effects of mercury are observed—tenderness of the gums and a metallic taste in the mouth—this treatment is desisted from and iodide of potassium is administered, mercury being given again when its physiological symptoms have disappeared. Oleate of mer­cury or mercurial ointment, or mercury with lanoline, is applied to the primary lesion and rubbed in over the enlarged glands. This is continued for six months or a year. In the later stages of the com­plaint iodide of potassium is the main remedy used. There are therefore two distinct methods of treating syphilis,—the non-mer­curial and the mercurial. Both methods have been extensively tried by the present writer, and he believes that the mercurial is infinitely preferable to the non - mercurial method. Recent investigations point to the value of corrosive sublimate as a germicide, and in all probability the good results which follow saturation *οΐ* the system with mercury are to be explained in this way. It is said by the non-mercurialists that the administration of mercury masks the symptoms. There can be no doubt that the symptoms often appear after the mercury is stopped, but in a modified form, and there is no evidence that the mercurial treatment prolongs the disease. Syphilis has a tendency to natural cure, like all the continued fevers, and along with the administration of mercury careful hygienic treat­ment must receive particular attention, and often in weakly un­healthy people a long sea voyage is of great value. Any means which causes a free action of the skin, as, for instance, by periodic visits to thermal baths, is of great assistance in eliminating the poison.

Syphilis as commonly met with nowadays is not of so severe a type as it formerly was. One reason often given for this is that mercury was formerly always pushed until its full physiological effects were observed, and that the lowering of the patient’s con­stitution by this severe treatment aggravated the primary com­plaint. There may be some truth in this explanation ; but the principal reason in all probability is that the syphilitic organism does not now find so suitable a nidus or soil for its growth and development as it once did. Syphilis in the United Kingdom at the present moment is in the stage of an epidemic in its decline. This may be looked on as a startling statement ; but it is true of syphilis as of all infective diseases. A time must come when the soil is practically worn out, when it becomes so poor that the organ­ism grows only in a stunted form, producing a mild disease, till in time it ceases to grow altogether. It is not asserted that it will necessarily die out, because after lying fallow for a time the soil may recover its power and the disease be revived in a more virulent form, analogous to the luxuriant crop which follows after a period of fallow. Syphilis can be conveyed by the discharge from any syphilitic lesion occurring within two years after the commence­ment of the complaint. It cannot be conveyed by the normal secretions of the syphilitic person except in the case of the semen, which, impregnating the ovum in the female, causes the foetus to be syphilitic. Syphilization of the foetus is followed by syphilization of the mother. The blood of a syphilitic person is infectious for two years after the commencement of the attack. Pure vaccine lymph cannot convey syphilis ; if, however, it is mixed with blood it may convey it. No person who has had syphilis should marry until he has been entirely free from the complaint for two, or better still for three, years. If a person marries before this time pregnancy greatly increases the risk to the mother. If there is any suspicion of syphilis the mother should take mercury during the period of pregnancy. It is interesting to note how time has a modifying influence in a case of repeated pregnancies occurring in a syphilitic woman. At first there may be miscarriage in the early stage of pregnancy ; after a time abortions in the later stage ; there may then be a still-born child ; then one bora alive but syphilitic ; then a child born apparently healthy but soon becoming syphilitic ; and ultimately a healthy child is born and remains healthy, showing no evidence of syphilitic disease. The disease has worn itself out. The relation of apparently healthy people born of syphilitic parents to syphilis acquired during the course of their life may explain those remarkable cases of escape from syphilitic infection which constantly come under the observation of the surgeon.

5. *Tumours.@@*1

As the result of a local irritation an acute inflammatory swelling may appear. If the irritant is of a severe type the result may be local death. An abscess may form ; and, after the pus has escaped or has been evacuated, and after the original cause of the irritation has subsided, the swelling may disappear and the parts be restored to a condition nearly allied to the normal. If the irritant, however, is slight and its action prolonged, a chronic inflammatory swelling of the part may result. Although in many cases with appropriate treatment the induration disappears, in other cases it persists during the life of the individual. The indurated mass in its microscopic characters closely resembles the original anatomical characteristics of the part affected. When, for example, an organ like a gland is the seat of a chronic irritation a general increase in its size takes place. A hypertrophy or overgrowth has occurred, but as a rule

the hypertrophied gland is only altered in size ; it retains its general shape and functional activity. Occasionally the hypertrophic area is localized, and to a great extent separable from the original gland by a more or less distinct capsule. In the mammary gland, for example, a local hypertrophy may occur, the microscopic characters of which resemble imperfect gland tissue. Between this condition and an adenoid or glandular tumour of the mamma no distinct line of demarcation can be drawn, and the probability is that the ade­nomatous tumour of the mamma is caused by local irritation. It may be the immediate outcome of a misdirected or excessive functional activity. The great practical difference, however, between it and true hypertrophy is this, that it can only be removed by opera­tion. The adenomatous tumour closely resembles in some of its microscopic characters one of the varieties of epithelioma, of which an increase in the columnar epithelium lining the acini in the gland is the main characteristic. This tumour is not a simple tumour like the true adenoma ; it does not grow slowly ; it is not encap­sulated ; the cellular elements in it not only invade the surrounding tissues but tend to pass into the lymphatic vessels and reach the lymphatic glands in the arm-pit, where they grow and form second­ary tumours similar in microscopic characters to the original growth. From these secondary foci a further invasion may take place, and the cell elements may reach the blood-stream and be caught in the capillaries, forming there new growths, till the patient dies from the general implication of the whole system. This form of tumour has been termed a *malignant adenoma.* While it has originally the microscopic characters of a simple adenoma, if we look to its life history we have in it an excellent example of a malignant tumour. Microscopically it is a stepping-stone between the simple and the malignant type of tumour ; clinically.it is characteristically malig­nant. The mammary gland is composed of glandular tissue and fibrous tissue. A hyperplasia of the fibrous tissue may occur in consequence of an excessive irritation of the glandular tissue, or apparently a primary increase in the fibrous tissue may occur locally, giving rise to a simple fibrous tumour of the mamma, of which fully developed fibrous tissue is the microscopic characteristic. This overgrowth may become encapsulated and give rise to no symptoms except those referable to its gradual increase in size, and after the gland in which it lies has fulfilled its life history it may stop growing, degenerate, and decay. In the uterus, *e.g.,* those fibrous tumours which occur after the time of child-bearing is past, after the uterus has fulfilled its destiny, cease to give any further trouble and are only inconvenient in consequence of their size. Fibrous tissue in the early stages of its development is largely composed of cell elements, and there are tumours, *e.g.,* in connexion with the mamma, which have their prototype in the undeveloped or cellular stage of fibrous tissue. These tumours also are essentially malignant. They grow rapidly, and are richly supplied with thin-Availed blood­vessels ; the elements of the tumour pass directly into the blood­stream, and reach the capillaries, where they are arrested and where secondary growths like the original growth in their anatomical characteristics are formed, causing the death of the patient.

In what has just been said it will be seen that there is no distinct line of demarcation between the inflammatory swelling and the hypertrophy, between the hypertrophy and the tumour proper, between the simple and the malignant tumour. The local irrita­tion can be traced in the case of the inflammatory swelling and the hypertrophy, and it is highly probable that both the simple and the malignant tumour are also due to local irritation. It must, however, be acknowledged that it cannot always be traced. If the malignant tumour is not due to local irritation, but to a general dyscrasia or peculiarity of the patient, the surgeon has slight grounds for recommending its removal. If, however, he believes that all tumours are evidences of local irritation, he is fully justified in recommending their early and complete removal—in the case of the malignant tumours before they have time to spread by the lymphatic or blood-stream to distant parts, in the case of simple tumours before they have assumed characteristics of malignancy, as these tumours sometimes do. The mammary gland has been taken as an example of an organ in which tumours frequently occur. The reason for this frequency, if we believe in local irritation as a cause of tumour- growth, is not far to seek : from the time of puberty to the time when it terminates its functional activity this gland is in a constant state of vascular unrest and functional change. Both forms of tu­mour are met with in all the organs and tissues of the body. Simple tumours are generally composed of fully developed tissue, similar to the tissue in which they lie, the simple fatty tumour occurring in connexion with fatty tissue, the simple fibrous tumour in con­nexion with fibrous tissue, the osseous tumour in connexion with bone. The malignant tumour, on the other hand, is generally formed of undeveloped tissue which has not yet fulfilled its destiny, whieh is not only misplaced in situation but in time. The carti­laginous tumour has its prototype in cartilage, for that which covers the ends of the long bones and enters into the formation of a joint is a fully developed tissue. The true prototype of the cartilaginous tumour is not, however, fully developed cartilage, but one or other of those forms of cartilage which as regards their developmental

@@@1 Compare Pathology, vol. xviii. p. 367 *sq*.