of mixing the identity of two specimens, one an unsuspected malignant growth and the other an innocent tumour, would be disastrous, and quite apart from the distress caused, the unfortunate patients might, in the event of discovery, involve the institution concerned in a suit for damages.

Suitable labels are usually available, and the earliest opportunity should be taken of securely attaching one of these to the specimen.

Preliminary Treatment.

Whenever possible, this should be carried out in the laboratory, the specimen being sent fresh as soon as possible after removal. Many small institutions have, however, no laboratory of their own, and depend upon outside laboratories for this work, and such an arrangement entails fixation of the specimen in the theatre.

Fixation of tissue has been defined "as the killing and preserving of the tissue elements (the cells, etc.), in such a manner as to preserve them in the same condition as they appeared in life."

Ten per cent. formalin is an excellent fixative for tissue, but it must be appreciated that the 10 per cent. formalin usually employed is in actual practice only a 4 per cent. solution. Formalin is supplied by the trade in 40 per cent. strengths, and the fixing solution is 10 per cent. of this 40 per cent. solution, generally a 4 per cent. solution, though almost always referred to as 10 per cent. formalin, and the subject of much confusion in actual practice.

Formula of Fixing Solution.

Commercial Formalin (40 per cent. strength)	1 part.
Tap Water	9 parts.

Plenty of fixative should always be employed and care must be taken to see that it has ready access to all parts of the specimen. When dealing with large specimens, it is a great advantage if the actual portion required for microscopical examination is cut out and fixed separately. This practice will ensure proper fixation, and if the whole specimen is not required for mounting save considerable amounts of fixing fluid.

It must, however, be remembered that indiscriminate cutting may do much harm, and the surgeon should be asked to select a suitable portion for sectioning.

The provision of an adequate supply of suitable containers is a necessity; the humble jam jar is a convenient and satisfactory receptacle for many specimens; enamel buckets fitted with lids should be available for larger specimens.

Sending Specimens by Post.

If only a small piece of tissue, such as might be required for microscopical examination, is being sent, it should be placed in a well-corked bottle of 10 per cent. formalin and packed in a box with cotton wool; postal outfits may usually be obtained from the laboratory. Whole specimens intended for mounting require more careful treatment; they should first be well fixed, two to three weeks in plenty of 10 per cent. formalin, then packed in a reasonably air-tight tin containing large amounts of cotton wool soaked in 10 per cent. formalin, the specimen being wrapped in the wool. Well packed in such a fashion, specimens may be sent long journeys with perfect safety.

In the Laboratory.

It might perhaps be interesting to follow the passage of the specimen after it has reached the laboratory. Suitable pieces are selected for microscopical examination and fixation completed; this microscopical or naked eye examination is very important, as only a very small piece of tissue can be examined by the microscope, and it is essential that a typical piece should be selected. In order that the tissue may be examined under the microscope, it is necessary that it should undergo a course of preliminary treatment; this is known as sectioning.

When it is appreciated that the tissue is examined by being looked through and not at, the necessity of sectioning it into very thin slices or sections will be realised; these sections are often no thicker than the depth of a single cell. During the actual sectioning or cutting, the tissue must be supported by some embedding medium, frequently a special kind of paraffin wax. Before the tissue may be embedded in paraffin wax, all moisture must be removed, as it will not mix with the molten wax and the tissue is slowly dehydrated by gradual passage through increasing strengths of alcohol; the strength of the alcohol is only slowly increased, as too rapid withdrawal of the water would cause distortion of the delicate tissue cells.

In addition, it is necessary that the tissue should be passed through a bath of a fluid which will mix with both the alcohol and wax; finally the tissue reaches the molten wax and a little block is cast, the tissue in the middle of the block of wax.

The actual sectioning is carried out with the aid of a machine called a microtome; the thin sections are mounted on microscope slides and stained with dyes which pick out in contrasting colours the different tissue elements and cells present.

THE EPIDEMIOLOGY AND PREVENTION OF LEPROSY.

In an article on the above subject in *The International Journal of Leprosy*, Dr. R. G. Cochrane writes:—

"The hypothesis that leprosy is usually acquired in childhood or early adolescence is being more and more generally accepted. Lampe (1, 2) states that he is firmly of that belief, and holds that active measures should be concentrated chiefly on the children. It is also believed by many that this period is one in which, if the infection is implanted, it is most liable to spread and set up active disease. It seems entirely probable that a large proportion of cases do become infected during these periods, and that once adult life is reached the chances of acquiring the disease are greatly diminished. However, there is reason to believe that there are many cases in which infection is actually established but does not go on to the active disease. If a patient has had only slight evidence of a leprotic infection in childhood, and if this has remained inactive during the stress and strain of adolescence, the chances of its becoming active are slight. There is, of course, the possibility that latent foci may light up even under the most unexpected conditions, but preventive measures on a large scale cannot be formulated upon the exceptions to what may be found to be a general rule."

previous page next page