

irritation. Yet often fats which have been heated and cooled are more digestible than when they have not passed through such a process, and they are also slightly more nutritious because water has been driven out of them; this last fact causes them to become more granular and so the digestive juices more easily penetrate them. One can, for instance, digest a larger quantity of dripping when it is cold than when it is hot.

In considering the digestion of fat we come across another instance of how nature is one of the best teachers of dietetics. Nature, or instinct, taught people how to arrange their meals long before food hygiene became a subject for study; thus we found them eating meat and potatoes together and so balancing, to some extent, the intake of protein, carbohydrate and fat. We have an even more striking instance of nature as teacher in connection with the present subject. You find people eating macaroni and cheese, bacon and beans, bread and butter. Why are they impelled to such combinations? For the reason that fats inhibit the flow of gastric juice and if carbohydrate (such as bread) is taken without fat then it very soon becomes penetrated by the hydrochloric acid and therefore, being now acid, passes quickly out of the stomach. Thus the individual suffers from hunger very soon after the meal, and this is well illustrated by the Scotchman who always took butter in his porridge for "he did not get hungry so soon." If fat is taken with the carbohydrate then the flow of gastric juice is much reduced and the meal remains longer in the stomach.

We hope in a later issue to deal shortly with some of the more important fats in use. Limitations of space do not allow us to do so now.

I. M.

THE SURGICAL SPECIMEN.

SPECIMENS FOR HISTOLOGICAL EXAMINATION.

JOHN HATCHER.

Though the results of histological examination of surgical specimens are rarely as spectacular as many other laboratory investigations, the findings are, however, of equal importance. In many respects the surgical specimen is the Cinderella of all specimens, yet few other specimens repay so well careful preliminary treatment. What does not seem to be fully realised is that the moment the tissue is removed it begins to undergo degenerative changes, which, if allowed to progress sufficiently far, will prevent the pathologist from giving the surgeon a full and satisfactory report. In the case of tumours on the so-called border line of malignancy, this may well be of tremendous importance to the well being of the patient. Briefly, this means prompt and proper fixation of the specimen.

Fixation.

Fixation of surgical specimens means killing, without distortion, the tissue cells and preserving them in a state very similar to that which they presented in life. I say in a state very similar to that which they presented in life, because the ideal fixative has yet to be invented, for though there are many excellent fixing solutions, they all cause a certain amount of tissue distortion; it is, therefore, essential that it should be minimised by early and correct treatment. Though there are an enormous number of histological fixing solutions available, a 10 per cent. solution of formalin is almost universally employed for general work. Sometimes the solution is made up in physiological saline by the inclusion of 0.85 per cent. sodium chloride. Some authorities contend that less distortion is

caused to the tissue by its use. Personal experience suggests that any improvement is more theoretical than practical.

Formula.

<i>Ten per cent. Formalin.</i>			
Formalhyde	...	...	100 cc.
Water	...	...	900 cc.
<i>Formal-Saline.</i>			
Formalhyde	...	...	100 cc.
Sodium chloride	...	...	8.5 grams.
Water	...	...	900 cc.

Either of these two fixing fluids are excellent for general use. There is one small point which is worthy of comment, that is the strength of formalin used. Actually formalhyde is a gas, only about 40 per cent. soluble in water, in which form it is supplied by the commercial houses. Therefore, the so-called 10 per cent. formalin solution, commonly used as a fixing agent and which consists of one part formalhyde and nine parts water, is, strictly speaking, a 4 per cent. solution, in which manner it is occasionally described. Naturally this is apt to cause confusion, unless the facts are fully appreciated. Fixation is carried out by immersion of the specimen in the fixing solution, and it is very important to see that the vessel selected is of adequate size to take sufficient fluid to fully cover the whole of the specimen. If the specimen floats in the fluid the portion projecting above the fluid must be covered with gauze or wool soaked in the fixing solution; alternatively, if it sinks a pad of wool or gauze must be placed on the bottom of the container. As to containers, enamel buckets and jam jars are the most convenient vessels for holding the specimens during fixation, and an adequate supply can usually be ensured, a very necessary point.

Prompt fixation has already been mentioned. Unfortunately operating theatres are usually busy places, and attention to specimens is apt to be left to clearing-up time. This is bad technique and whenever possible the specimen should be fixed immediately it is removed.

Labelling.

No article on surgical specimens however brief would be completed without some reference to the importance of correctly labelling the specimen. Besides such essential details as the patient's name, age and ward, the laboratory staff also find very useful a full description of the nature of the specimen and any essential details from the patient's case history, particular care being paid to any previous operations of a similar nature, which the patient may have had.

Specimens for Bacteriological Examination.

Any surgical specimen required for bacteriological examination must on no account be fixed. The specimen should be received directly into a sterile container and protected from contamination by air-borne organisms during transport to the laboratory.

EMOTIONAL CAUSES OF ACCIDENTS.

Emotional maladjustments as a cause of accidents are discussed in an article by Dr. Lydia G. Giberson, industrial psychiatrist, in *National Safety News*.

"For years," says Dr. Giberson, "I have observed the emotional maladjustments of employees and it is my experience and my judgment that the majority of accidents have their sources in the human factors. I believe that an accident is a telltale symptom of emotional illness."

"Causes deep in the private life of the worker may bring about in their logical sequence accidents which are completely unexplainable on the surface."

Dr. Giberson specifies two basic requirements for an accident: lack of physical coördination and lack of attention.

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