

wards in so far as this offers opportunity for seeing the practical application of the teaching given. The Managers of the Royal Infirmary offer one-and-a-half years' training to those who wish to qualify as dietitians and they specially encourage nurses to take up this branch, in the belief that there will be more and more openings at home and abroad for those possessing such qualification. The students are trained in all branches of hospital food service, but particularly in the work of Dietetic Out-patient Department and the Diet Kitchen. Nurses to be eligible for the Diploma course in dietetics must be State Registered, must have a good general education (preferably holding the Higher Leaving Certificate) and some elementary knowledge of chemistry is required before enrolment. Enquiries regarding the course should be made to the Lady Superintendent of the Royal Infirmary.

An interesting point in connection with the Infirmary is the fact that it has not yet opened its doors to paying patients; it has no private wards. Within the walls of this truly magnificent hospital the patients have the finest medical and surgical treatment made available to them, and this in an atmosphere of hospitality, courtesy, comfort and hygienic surroundings unsurpassed, all this without the exaction of any payment whatever. No wonder, therefore, that Scotland regards this hospital of its capital city as one of the very finest of the country's beneficent institutions and that the great and the simple open their purses readily to its claims so that it may maintain its great prestige and its immense contribution continually to the maintenance of the well being of the nation and the relief of the nation's sick. I. M.

## URINARY CALCULI AND GALL-STONES.

W. J. HATCHER.

While the examination of urinary calculi and stones from the gall-bladder is not perhaps of tremendous importance, the results are, however, often interesting and may be of assistance to the physician in preventing a recurrence of the trouble. Certainly any stones removed in theatre should always be sent for examination, and in the case of suspicious objects passed in the urine or found in the fæces, it is essential that they should be properly examined, in order that pseudo stones may be excluded. A rarer type of stone is the salivary calculus which forms in the salivary ducts.

### Urinary Calculi.

Most of the urinary calculi which come to hand in the laboratory are, on examination, found to consist of urates, phosphates or calcium oxalate. Mixtures of these substances are quite common; in fact, a "pure" stone is by no means the rule. Other substances may also be present, such as, for example, cystine, xanthine and calcium carbonate. The first two are usually supposed to be due to an inborn error of metabolism; they are, however, all somewhat rare. As regards the commoner stones—that is, those consisting of urates, which include uric acid, phosphates and calcium oxalate—the frequency of "mixed stones" makes for considerable difficulty in the subsequent treatment of the patient. For example, if a substance such as acid sodium phosphate is prescribed, as it might well be, there is always some danger of encouraging the formation of uric acid; alternatively, if alkalis are ordered, there is almost the certainty that phosphates will be deposited. Some years ago a very interesting theory was advanced; this work was based upon animal experiments, and it gave strong evidence that the absence or deficiency of a fat-soluble vitamin was directly connected with the formation of stones. Out-patients will often give a history of having passed "gravel" or "sand" in their urine, and

sometimes will bring with them for the physician's inspection very queer objects which they allege have been found in their urine. There is also the patient of that rather peculiar mentality who will deliberately set out to deceive the doctor. All these specimens find their way to the laboratory in due course, and investigation of the nature of the substance will usually prove whether or not they are fragments of calculi.

### Gall-Stones.

Unlike urinary calculi, biliary calculi almost always consist largely of cholesterol, with frequently a trace of bile pigments. Pure pigment stones are occasionally met; usually, however, these stones are mixtures of cholesterol, calcium, phosphates or other substances combined with bilirubin; a small amount of iron or copper may also be present. Gall-stones may be passed in the fæces, and laboratory investigation of any suspicious objects will quickly establish the fact if the object is a true stone.

### Concretions.

Proper examination of concretions and enteroliths passed in the fæces is very necessary, if only to exclude the possibility of any of them being gall-stones. Concretions are usually masses of fats surrounding some hard substance such as a tiny bone. Bismuth and Carmine are often responsible for the formation of so-called concretions. Often these are quite large; they are, of course, very easily identified.

### Enteroliths.

Enteroliths are very hard lumps, usually of a round shape, and they may be composed of fæcal matter or even undigested food surrounded by a crust of inorganic matter. Enteroliths must not be confused with hard masses of fæces called scybala.

### Laboratory Examination.

While the actual tests employed are quite simple, they require reagents not usually available in the ward test room, and it is always necessary to send the stones to the laboratory. If the stone is of sufficient size it is usual to cut it in halves, partly for the purpose of determining if the stone has formed round a foreign body and partly for retaining half the stone as a teaching specimen. On one occasion the writer was astonished to find a surgical swab in the centre of a kidney stone. Enquiry into the patient's history brought to light the interesting fact that some years previously the patient had undergone a kidney operation, though not in our hospital.

The affection of patients for their stones is always a matter of wonder to the writer; it appears to be quite a common practice for patients to have their stones made up into necklaces, etc. The writer well remembers one lady who expressed keen disappointment at the small number of stones removed. To appease her and please the ward staff a further supply was sent. These were obtained from a pot which contained a very mixed collection of urinary and biliary stones, the product of years. It is to be hoped that the necklace was never produced for the inspection of an expert.

### A MEMORANDUM ON TYPHOID FEVER.

A Memorandum on Typhoid Fever issued by the Ministry of Health is published by H.M. Stationery Office, price 2d. The Memorandum deals with the history, prevalence, diagnosis, prevention and control of the disease, and contains an appendix on laboratory diagnosis.

Copies of the Memorandum have been sent to local authorities and Medical Officers of Health throughout England and Wales.

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