Royal British Nurses' Association.

Incorporated by Royal Charter.

THIS SUPPLEMENT BEING THE OFFICIAL ORGAN OF THE CORPORATION.

LECTURE.

Her Royal Highness the Princess Arthur of Connaught, R.R.C., S.R.N., President of the Association, has graciously consented to take the Chair at a lecture to be given by Mr. James Carver, F.R.C.S., on Thursday, June 23rd, at 3 p.m. The subject of the lecture will be Modern Investigations on Kidney Conditions with special reference to Tuberculosis of the Kidney. The lecture is likely to prove one of great interest, as Mr. Carver is an eminent authority on the subject on which he is to speak, and it will be illustrated by fine X-ray photographs shown from an X-ray viewing box.

ANNUAL MEETING.

The Annual General Meeting of the Corporation will take place on Tuesday, June 28th, at 3 p.m. We hope that all members who can will make a point of attending on that date.

LECTURE ON DIABETES MELLITUS.

By BENJAMIN BARLING, ESQ., M.D.

The lecture given by Dr. Barling on the subject of diabetes covered a great deal of ground, and those who attended it have expressed much appreciation of the large amount of information which it contained.

The disease has its name because "diabetes" means the passing of large quantities of water and "mellitus" is connected with the Greek word for honey, emphasising the importance of sugar in the ætiology of this disease. To understand what takes place when a patient develops diabetes it is necessary to call to mind the digestion and metabolism of food. Carbohydrates are digested first by the ptyalin in the saliva, and the process is completed by the amylase of the pancreatic juice in the duodenum. In the form of glucose, sugar is carried in the blood stream to the liver, where it is stored as glycogen, or to the muscles where it is metabolised to produce energy and heat. Fats are split up by the steapsin of the gastric juice and emulsified by the bile so that they can be absorbed by the small intestine. When carbohydrates are metabolised the end products are carbon dioxide and water, and the products of fat should be the same. If, however, there is incomplete metabolism of carbohydrates in the blood, there will also be incomplete metabolism of fats, and it is from the partially metabolised fats, the ketone bodies, and particularly β hydroxybutyric acid that the acidosis which produces diabetic coma results. A normal person can take large quantities of carbohydrate without harm, but if diabetes is present the result may be serious. It has been said that fats are burnt in the flame of carbohydrate, but in the absence of the flame they only smoulder. The digestion and metabolism of protein are not of great importance in the disease of diabetes, except in so far that it is impossible to substitute protein for the fats and carbohydrates in order to increase the diet, as excess of protein produces wasting of the tissues.

Aetiology of the Disease.

It is often asked whether diabetes is hereditary. If one parent is a diabetic it does not follow that the child will suffer from the disease, but, if both parents are diabetic, the possibility is that the child may be likewise. Diabetes in children is much more serious than in elderly people, and is due to a different set of causes. In the elderly a generalised arteriosclerosis affects the blood supply to the pancreas, as well as to other parts of the body. The very stout and those who have always eaten liberal quantities of very rich food are most liable to develop diabetes. The Jews, whose food is often rich and contains considerable quantities of fat, are very prone to the disease in later years. The pancreas becomes too tired to supply sufficient internal secretion to metabolise the excess of fats and carbohydrates. Diabetes is also found in conjunction with gall-bladder trouble. There appears to be a connection between hypercholesterol in the blood and the incomplete metabolism of fats. The direct cause of diabetes is the absence of the controlling influence over carbohydrate metabolism. The pancreas has two secretions, external and internal. The external is poured into the duodenum by way of the pancreatic duct, and it contains ferments necessary for digestion. The internal secretion comes from those parts of the pancreas known as "the islands of Langerhans." The work of Minkowski and Mering first proved that these islands produce insulin. They tied the pancreatic duct of a dog and discovered that, provided the dog's food was predigested, it could live healthily. In time all the pancreas atrophied except the islands. On the other hand, if the pancreas was removed the dog immediately developed diabetes. It is now known that there are two types of cells in the islands of Langerhans, the α and β cells, and it is the latter which produces insulin. Early attempts to extract insulin were unsuccessful, because the powerful pancreatic juice destroyed the internal secretion when the pancreas was removed from the dead animal. The work of Banting and Best made the manufacture of insulin possible. To counteract the action of the pancreatic juice they threw the newly-extracted pancreas into a 70 per cent. solution of alcohol. It was later discovered that a solution of picric acid had the same effect as the alcohol. Insulin picrate is formed, and this is then treated with hydrochloric acid, so that the insulin comes to us in the form of insulin hydrochloride. The presence of insulin in the blood enables the body to metabolise carbohydrates, to convert them into glycogen for storage in the liver, and to enable the muscles to burn them to produce energy. If insulin is deficient or absent there is a large amount of glucose in the blood stream which the liver is unable to convert entirely into glycogen. This passes to the kidneys, whose function it is to maintain at a constant level the different constituents of the blood. The

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