Nurse at the Union Infirmary, Prescot, and of Superintendent Nurse at Christchurch Union Infirmary.

Miss Valetta Shout has been appointed Matron of the Isolation Hospital, Gainsborough. She was trained at the Alexandra Hospital, London, and at Addenbrooke's Hospital, Cambridge, and has held the position of Charge Nurse at the City Hospital, Liverpool, and of Matron of the Sanatorium, Morecambe.

Charge Nurse.

Miss E. N. Watson has been appointed Charge Nurse at the Bolton Union Infirmary. She was trained at the Kingston Union Infirmary, and holds the certificate of the London Obstetrical Society.

Nurse.

Miss Rose Harman has been appointed Nurse in a West End Surgical Home. She was trained at the Kingston Union Infirmary.

Notes on Serum Therapeutics.*

(Continued from page 186.)

DIPHTHERIA.

In 1883, Klebs discovered the specific cause of diphtheria, and in 1884 Löffler succeeded in isolating the bacillus and growing it in pure culture. The bacillus is, therefore, known as the Klebs-Löffler bacillus. Roux and Yersin in 1888-1889 published important papers on the subject, in which they showed that the bacillus is capable of producing the various phenomena associated with the disease, including the formation of false membrane and diphtheritic paralysis.

They also succeeded in separating and studying the toxin, which they found to be capable of producing all the effects produced by the bacillus. In 1890 appeared the great work by Behring, to which reference has already been made; and the observations in regard to diphtheria made in that work were extended and strengthened in a paper by Behring and Wernicke in 1892.

Curative Action.

By showing that the horse reacted to repeated and increasing injections of diphtheria toxin, by manufacturing and circulating in its blood such quantities of antitoxin that a few cubic centimètres of their serum was possessed of sufficient curative power to be useful in the treatment of diphtheria in the human subject, Roux and Ehrlich first brought the subject from the experimental to the practical stage, and since that time the results obtained everywhere have proved the value of the antitoxic treatment of diphtheria.

It would be impossible here to enter fully into the statistics showing the enormous fall in the death rate from diphtheria since the introduction of the antitoxin treatment, but the tables appended are of interest as illustrating the results obtained in Great Britain.

* Reprinted from the *Indian Medical Record*.

Table I.

Statistics of Cases of Diphtheria treated in the Metropolitan Asylums Board Hospitals.

Year.	Cases treated by Anti-toxin: Per cent. of all cases.	Mortality: Per cent. of all cases.
1888-93 ...	— ...	28·5
1894 ...	— ...	29·6
1895 ...	61·8 ...	22·5
1896 ...	71·3 ...	20·8
1897 ...	80·2 ...	17·5
1898 ...	81·4 ...	15·5
1899 ...	— ...	13·95
1900 ...	— ...	12·01
1901 ...	— ...	12·5

From the above table it will be seen that the progressive fall in the death-rate corresponds with the increase in the percentage of cases treated.

Since the earlier works on the subject great improvements have been made in the technique of immunisation. One of the most marked advances has been in the direction of obtaining powerful diphtheria toxin, the first great essential for the production of powerful antitoxins. As a result of the advance of knowledge on this subject very powerful antitoxins are now obtained, a strength of over 1,000 units per c.c. being by no means infrequent. Although at the Lister Institute such antitoxins are not infrequently obtained, the serum is not sent out in different strengths at different prices, but a uniform strength in suitable volume for clinical purposes is fixed and supplied at one price. The bottle of antitoxin in each case contains at least 2,000 units.

Dosage.

Great difference of opinion still exists as to the suitable dosage of the antitoxin. The bulk of opinion now seems to be that for moderately severe cases, whether in adults or children, a dose of 2,000 units is sufficient, and for a very severe case 4,000 units. It is pretty generally agreed that it is more efficacious to give one large dose as early as possible in the disease than a number of small doses at intervals. Intravenous injection in severe cases has also been recommended. Behring says that by this method a gain of eight hours may be obtained. Only antitoxins free from antiseptics should be employed for intravenous injection, and care should be taken to avoid any precipitate which may be settled at the bottom of the flask.

One of the most important conditions of success in the treatment of diphtheria with antitoxin is that antitoxin should be injected early. This is very clearly brought out in the statistical tables printed herewith, the first of which (Table II.) shows the collected experience on the subject, the second (Table III.) the experience at the Brook Hospital of the Metropolitan Asylums Board.

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