

THE NEW CURE FOR DIPHTHERIA, CROUP, ETC.

If the facts placed before the Hygienic Congress held at Budapest last month be not overstated, then the whole world owes a deep debt of gratitude to the young French savant, Dr. Roux, for the patient and heroic researches which have led to the discovery of an effectual cure for croup and diphtheria, and opened the way for further results not less startling. Such is the introductory announcement in the *London Daily Graphic*, which also gives the following:

The distinguished Dr. Marsan points out how the new method was established. Diphtheria is produced by microbes which plant themselves in the membrane of the throat; and multiply; but unlike the bacilli of other infectious diseases, they remain obstinately in the same position, neither penetrating the system nor the blood. But if the deadly animalcules remain at the door, they are still able to secrete a poison of extreme violence, called "toxin," which quickly penetrates the circulation and infects the whole body. This toxin, thanks to the achievements of science, can now be isolated, and in the form of a fine powder will cause almost immediate death when injected into animals. However, it has been found that if a very small dose be introduced into certain animals, especially the horse, only a feeble reaction is produced. By repeating the operation, with gradually increasing doses, the organism of the animal finally revolts, and becomes not only impervious to the toxin, but destroys it, and from this singular result is due the origin of the new substance with which Dr. Roux wages war against diphtheria. In a word, it is the basis of a great revolution in the medical world, which henceforth will recognize in "Serum therapy" a heaven-sent system to root out most of the diseases connected with childhood. As Dr. Marsan well says, there are toxins and anti-toxins for all microbic affections. Serum therapy will eventually discover a remedy for all infectious diseases. Yesterday it was tetanus in animals that it cured, to-day it is diphtheria, to-morrow it will be tuberculosis.

If you go to the Institut Pasteur, you will find comfortably stalled in the garden some ten or a dozen cab horses, in prime condition, aged from six to nine years, whose mission in life is to furnish the precious fluid which every day snatches many a young life from an untimely grave. They are in their measure unconsciously solving the problem of how to stop the depopulation of France. They are well cared for, there is no cruelty in the process, no suffering entailed. The first process is to inject the deadly virus—the toxin—into the shoulder of the horse. This, of course, at first causes a slight indisposition, but after a

while no ill effect is felt. The second step, as shown in one of the views, is to draw from the neck of the "prepared" animal a judicious quantity of blood. If the blood be allowed to stand for a while, the red corpuscles settle to the bottom, and the operator can then draw off the fluid, of a yellowish hue, resting above and containing the serum, or antitoxin. This, in its turn, is injected under the skin of the patient by means of a syringe analogous to that used for injecting morphine.

On February 1, 1894, Dr. Roux began operations at the Hospital for Sick Children, Paris. He had a good supply of serum, and each day on making his visit to the hospital, he treated all the children he found there, in whatever state or condition of croup or diphtheria. There was no selection of subjects, a point to be borne in mind, nor was the ordinary treatment in any way modified or set aside. Things went on exactly as they had before, except that a new element had been introduced—namely, the serum. During 1890, 1891, 1892, 1893, before Dr. Roux began his system, 3,971 children suffering from croup and diphtheria were admitted into the Hospital for Sick Children. Of these, 2,029 died of the disease, the mortality thus being 52 per cent. On the other hand, from February 1 of this year up to July 24, the date up to which Dr. Roux furnished statistics to the Congress, the serum was applied to all without exception, and, out of 448 children, there were only 109 deaths—that is, the mortality had decreased to 24 per cent. As the conditions during these periods were the same, the difference between 52 per cent. and 24 per cent. indicates the indisputable benefit derived from Dr. Roux's treatment. If we take the same period at the Trousseau Hospital, Paris, where the old methods prevail, we find that out of 520 children admitted there, 316 died, thus giving a mortality of 60 per cent.

But this is not all. The serum, if applied, say, to a child suffering from quinsy, not only puts that ailment to flight, but renders the subject impervious to croup and diphtheria; and even measles and scarlatina are found to be of very rare occurrence, and then only of slight character, when the system has been fortified by Dr. Roux's wonder cure. The 24 per cent. represents the saving of the lives of 120 children in six months in one institution. The gain would have been more considerable but for the deplorable hygienic conditions of the Hôpital des Enfants Malades. Many of the deaths, too, were the result of further complications, such as heart disease and bronchopneumonia, which made the work of the physician very difficult. Generally speaking, a single injection is sufficient, and Dr. Roux has never given more than two. The dose consists of two-fifths of amount of serum injected into the side by one puncture. The temperature