

MEDICAL MATTERS.

SALVARSAN.

Miss Elisabeth Robinson Scovil writes as follows on Salvarsan in the *American Journal of Nursing* :—

Syphilis is perhaps the most dread disease known, certainly one of the most far-reaching in its consequences. Not only the victim himself suffers; he may communicate it to his wife and children.

The germ that causes the disease had been isolated, *Spirochaeta pallida*, it remained to find a drug that would destroy the micro-organism without injuring the patient. Mercury had been found efficacious if persevered with, but a more speedy remedy was desired.

Uhlenhuth, a German experimenter, had discovered that atoxyl permanently cured syphilis in rabbits, but its effect on man was so dangerous it could not safely be used in medicine.

Dr. Paul Ehrlich, director the Royal Institute for Experimental Therapeutics at Frankfurt, Germany, with the help of several assistants, began a series of experiments to discover a preparation of arsenic that would be as effective as atoxyl in destroying the germ and at the same time less injurious to the patient.

After long investigation he discovered a chemical compound, with arsenic as its base, which seemed to fulfil the requirement. Its descriptive name is dioxydiamidoarsenobenzol; this being rather unwieldy for common use, it was at first known as 606, from the number of experiment in which it was discovered, and later, as salvarsan.

It is a light-yellow powder, and is dispensed in sealed glass capsules, free from air but containing the vapor of wood alcohol to keep it from oxidation. It dissolves in water. There are various methods of preparing it for use. Sometimes an alkali is added which is neutralized by an appropriate acid and the neutral mixture used. Sometimes the neutral base is suspended in paraffin or other oil.

It is given hypodermically and injected either intramuscularly, subcutaneously or intravenously. The insertion is always accompanied and succeeded by pain, sometimes so intense as to require the use of morphia for several days. When it is injected into the muscle, or under the skin, there is infiltration and induration; when directly into a vein there are no local symptoms, but sometimes headache and gastro-intestinal disturbance. After the administration in any form there is often nausea,

vomiting and diarrhoea. When the intramuscular route is chosen, the salvarsan is usually injected into the gluteal region. The intravenous method produces the most rapid effect, and gives less discomfort to the patient.

Salvarsan acts with great rapidity on lesions of the mucous membrane, and it is of decided value in obstinate cases of syphilis appearing in the palms of the hands and soles of the feet. The latter cases do not as a rule yield good results when treated with mercury.

One case is reported in which a plantar sore of some extent disappeared after one intramuscular injection. It had existed for twelve years, and had been treated with mercury by several competent physicians. In another case a syphilitic eruption of the palms cleared up in one week after an intravenous injection.

Two observers who report a series of cases treated at the Johns Hopkins Hospital say: "Of the seventy cases treated, those in the primary stage, with chancres of from one to three weeks' duration, give the best results. Only one dose was given in each case, and the sore healed promptly. The results to date in this class of cases have been particularly gratifying, inasmuch as no further manifestation of the disease has appeared, although periods of from two to five months have elapsed since treatment.

"Another group of cases in which results seem to be very satisfactory is that in which the patients have received the drug following a vigorous course of mercury for periods of from a few months to a year, with the disease under control at the time. None of the cases in this group has so far recurred clinically, and in all that we have been able to follow serologically the Wasserman reaction has remained negative. Some of the cases have been under observation now for six months.

"Cases with active secondary or florid syphilis, however, although all of the lesions and clinical manifestations have promptly disappeared following the treatment, and in many cases the Wasserman reaction has become negative, almost invariably recur at a later date.

"In cases with the late recurring secondary and tertiary lesions, or in which more or less diffuse syphilitic processes are present in the body, an absolute eradication of the disease with one or more doses of the drug can scarcely be expected. In none of our cases of this type have we been able to accomplish permanent results with salvarsan alone, although a marked beneficial effect on the lesions has almost always been observed.

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