

fuchsin or gentian violet, and examined for the bacilli of Löffler. These are of the shape of a little, curved sausage, and may usually be easily distinguished from others present. They are about the length of tubercle bacilli, but two or three times their thickness. They are best found early in the case, being difficult to discover later on account of the numbers of other growths, and the large amount of fibrin in the false membrane. At this stage, however, the diagnosis has become evident. In cases of doubt in the early stages, it is better to mistake a simple angina for a case of diphtheria, than to make the contrary mistake.

3. The local parasiticide employed should be efficient against the bacillus of Löffler. It should be used in sufficient quantity and often enough to sterilize the false membrane. For this purpose, he employs salicylic acid in a dilution of $1\frac{1}{2}$ -2 in 1000. Chlorate of potash, benzoate of soda, and boric acid may be struck from the list of topical agents useful in the treatment of diphtheria.

4. Carbolic acid, sublimate, and all other agents should be avoided, which, used in strength necessary to sterilize the false membrane, are capable of producing an intoxication.

5. In applying the parasiticide, it is necessary to avoid all procedures which may open new doors of entrance to the virus by denuding the epithelium, or which may increase the fibrinous exudation by irritating the submucous tissues.

6. The effort should be made to reach all the diphtheritic surfaces with the parasiticide.

The author recommends that the solution spoken of be used by irrigation every hour or two hours, depending on the gravity of the case. In quite young children, where a considerable quantity of the solution is swallowed, it is well to make it of a strength of 1 in 1000 or 1500. He has seen excellent results follow this treatment. In cases in which the false membrane has become quite thick before the treatment was instituted, irrigation is not sufficient to sterilize it completely. In addition to it, it would then be well to use swabbing with some agent which will soften and disintegrate the deposit, and for this purpose he knows of nothing better than lemon juice. Chloral or papain may be employed for the same purpose. The great advantage of salicylic acid is, that it is an excellent parasiticide of the bacillus of Löffler, even in the strength of 1 in 2000; and that it can be employed in large amount without fear. The author quotes, finally, from the writings of several authorities, to show that he is upheld in his favorable estimation of the drug for the treatment of this disease.

THE TREATMENT OF DIPHTHERIA WITH A SPRAY OF HYDRONAPHTHAL, PAPAINE, AND HYDROCHLORIC ACID.

W. C. CALDWELL (*Archiv. of Pediatr.*, February, 1889, 97) makes the two propositions: 1. That diphtheria is at first a local sepsis, and that the temperature is due to the absorption of leucomaines, but that it is probable that later the microbe of septicæmia, and possibly of diphtheria, may enter the blood and produce a general disease. 2. That it is probable that the pseudo-membrane is over the site of the local, primary infection, and that the bacteria

are invading the lymph spaces of the submucous tissue beneath it. The indications for treatment, therefore, are the prompt, frequent, and effective application of drugs which will remove the membrane, and thus reach and arrest the growth of the bacteria. For convenience, he prescribes these drugs in the same mixture. They must, however, be such as do not antagonize each other, or in any way be incompatible. Thus, pancreatin is an active peptonizer, but can only be used in an alkaline medium; while bichloride of mercury is a powerful antiparasiticide, but also neutralizes to a certain extent the peptonizing ferment. After considerable clinical experiment he adopted the following method of treatment, which he reports in seven cases: 1. Keeping the bowels open. 2. Ingestion of two to six ounces of milk every two hours. 3. Spraying the throat with the following prescription: Papain, ʒij ; hydronaphthal, grs. ij ; acidi hydrochlorici dil., gtt. xv ; aq. destil., ad. ʒiv . By adding ʒiv of glycerine to the mixture, its solubility is greatly increased. Hydronaphthal is a powerful antiseptic, which acts either in a neutral or acid medium, and is not poisonous. The throat should be sprayed every half hour until the temperature falls; then every hour, unless the patient be asleep. In the cases reported, the temperature fell in from four to eight hours. It is very important to apply the spray thoroughly, which is not an easy matter. Three persons are required—one to hold the child's head, one to depress the base of the tongue, and the third to use the hand atomizer rapidly for a few seconds. The child is then given a little rest, and this procedure repeated several times. The thorough depression of the tongue is an essential feature. The author admits that the treatment is best adapted to the early stages before the disease has become constitutional, and thinks it probable that in a later stage there would be danger from heart failure, or from too great exhaustion from the force required in carrying out the treatment.

SULPHONAL IN INSOMNIA.

W. L. WORCESTER (*Journ. Amer. Med. Assoc.*, March 9, 1889) has administered sulphonal to 17 insane patients. Twenty grains was the maximum dose, except in one instance in which this amount was administered 3 times in the course of one night, and failed to produce any perceptible effect. With this exception 20 grains did not fail in any instance to produce sleep, lasting usually from 5 to 8 hours. No undesirable effects were noticed on the circulation, appetite, digestion, or general condition of the patient in any instance. In one case the administration was continued for 36 days, and in another for 23 days. In neither of these was it necessary to increase the dose, but the medicine appeared rather to be more effective during the later part of the treatment than in the earlier period.

E. H. KISCH (*Berlin. klin. Wochenschr.*, 1889, No. 7, 128) reports the results of his administration of sulphonal in 24 cases. The most favorable action was seen in 12 nervous individuals suffering from insomnia, the result of various conditions of excitement. In these a dose of from 7 to 15 grains was sufficient, after one-half to two and one-half hours, to produce sleep, lasting through all, or the greater part, of the night. Three other individuals were also favorably influenced by the drug, making 62.5 per cent. successes in all. He admits that the psychic influence of the administration of a hypnotic