

THE PROPHYLAXIS AND TREATMENT OF DIPHTHERIA.

At the recent meeting of the American Medical Association, Washington, D. C., Dr. J. Lewis Smith, of New York, read a paper on this subject. The room should be disinfected by adding to one quart of simmering water one or two fluid ounces of the following mixture :

R. Oil of eucalyptus.....3j.
Carbolic acid.....3j.
Turpentine, q. s. ad.....3vj. to 3viii.

Everything and every person not absolutely necessary for the comfort and management of the patient should be excluded from the sick room. Physicians undoubtedly conveyed the disease. They should always examine the fauces by standing behind or at the side of the patient, so that no ejected mucus may come upon them. After each visit they should wash thoroughly, in a sublimate solution, hands, face, and beard. Walking cases without fever, anorexia, or malaise diffused the disease. Daily inspection of the fauces of school children had been proposed. Convalescents should not mingle with healthy children for four weeks. He admitted the full claim of the Klebs-Loeffler bacillus to be the cause of the disease. It was a surface microbe—never penetrating the interior of the body, but attacking only mucous surfaces or cutaneous abrasions. It produces a ptomaine containing carbon, hydrogen, azote, sulphur, and oxygen, which, by absorption through both blood and lymph channels, causes the nephritis-granulo-fatty degeneration of heart muscle and paralysis.

The treatment should embrace hygiene, diet, and alcohol. Rectal alimentation could be followed for a time. Failure of appetite rendered the outcome doubtful. Diet could embrace milk with saroo-peptones, beef tea, or meat juice, and the various pre-digested compounds. Large and frequent doses of alcohol were positively necessary. It is quickly eliminated, and often will save life unless blood-poisoning has actually set in. In the proportion of one to five it has been shown to have a destructive action on the growth of the bacillus.

Locally we should remember that normal epithelium was a barrier to the germ's entrance, and hence our remedies should be such as not to destroy the epithelial covering. Denuded or diseased surfaces were favorable starting points for the disease. Corrosive sublimate, 1 to 8,000; carbolic acid, 1 to 50; salicylic acid, 1 to 80; has proved of service in arresting the germ growth. Potassic chlorate was useless in this direction, and he had come to discard its internal employment entirely. It had undoubtedly caused nephritis in many cases. The corrosive sublimate could be given by nasal injection, gargling, and internally. Where the false membrane was very thick and tenacious, equal parts of tincture of iron and glycerine should be given three or four times a day. Loeffler himself uses a mixture of carbolic acid, alcohol, and distilled water for the mouth. Our local remedies should be penetrating. Therefore, glycerine and water, never sirups and mucilages, should be our vehicles for all local applications. The official solution of iron chloride might be diluted three or four times for this purpose. While it undoubtedly contracted the vessels, it was often painful. It congeals the mucus of the fauces. Carbolic acid, Monsel's solution, and glycerine could be advantageously used in this way. For nasal disinfection a saturated solution of boracic acid was preferable.

For internal treatment, iron assisted the anæmic condition. Vegetable tonics, including quinine, were probably useless, as were also quinine insufflations in the oral cavity. The main

reliance was to be placed on the bichloride. He was in the habit of giving a two-year-old child $\frac{1}{2}$ grain every two hours; four years, $\frac{1}{4}$ grain; six years, $\frac{1}{2}$ grain; ten years, $\frac{1}{2}$ grain. His solution was made by dissolving the sublimate in alcohol and adding elixir of bismuth and pepsin. Sublimate solution, two grains to the pint, could be used for the nose. The mercurial should be continued at least one week, unless diarrhoea supervened, but not longer. Calomel had been suggested. Many gave an initial dose, and some continued it through the entire disease. It undoubtedly increased the anæmia. Of late it had been given in the New York Foundling Asylum by sublimation, from ten to forty grains being used, under a tent over the patient's bed. The indication for its use was the supervention of hoarseness. The attendants had been salivated in several instances, but the patients were apparently not injured. It seemed to lessen the necessity for intubation. The process might be repeated in three or four hours. The percentage of recoveries from intubation where necessary was better in the calomel cases than in others. For the nephritis he gave iron, and for the paralysis tonics, strychnine and electricity.

Dr. A. Seibert, of New York, remarked that we must see way down down to the epiglottis in order to have our examination amount to anything. Children should not be allowed to kiss each other when there was any sore throat about, and very young children should not be allowed to creep around on the floor. They scraped up the dust with their fingers, which they would afterward put in their mouths. Thus the germs which settled on the floor were conveyed to the sensitive membranes. The experiments of Gebhardt, of Bonn, have shown that false membrane could be dipped in a sublimate solution, and then, after drying and teasing, cause a bacillus development in a culture medium. It was, therefore, especially under the conditions of diphtheria, slow in germicidal action, but thorough if once brought into perfect contact with the affected areas. A five per cent solution of acetic acid has been shown to be quickly penetrating.—*Scientific American*.

A JOURNEY THROUGH THE AIR.

The air is in constant motion, and every current of air, from the lightest zephyr to the blast of the hurricane, is called wind. The force which sets and maintains it in motion is the warmth of the sun's rays. These pass through the air without appreciably warming it, but impinging upon the surface of earth and ocean they are absorbed; and the heat being again radiated warms the atmospheric strata nearest the surface.

But the ratio in which the different regions of the earth are warmed varies considerably. Around the equatorial belt the sun's rays fall vertically or nearly so and the heat is absorbed in a narrow area, but in higher latitudes the slanting rays diffuse an equal amount of warmth over a wider area. The zone of greatest heat has its centre north of the equator, owing to the fact that there is more dry land in the Northern Hemisphere, and that solid bodies absorb and radiate more heat than water. Over this warm region, which by no means covers the whole tropic zone, the heated air at the surface, becoming lighter by expansion, ascends through the cooler strata above it. It could not, however, continue to rise unless it were replaced, and this occasions the rush from the north and south of cooler air, which in its turn gets warmed and ascends. The ascent of the upward currents is arrested as they reach a rarer atmosphere, and being debarred from falling back by the presence of ascending currents from below, they take a