DIPHTHERIA PREVALENCE AND GENERAL INSANITARY CONDITIONS.

Dr. Giaiuntá (Gior. d. Soc. ital. d'ig., Milano, 1898, No. 8) communicates the result of an extended epidemiological inquiry into the incidence of diphtheria, during the twenty years 1877-1896, in the city of Catania (pop., 1896, 116,000). During the nine years, 1877-1885, the deaths per 10,000 at all ages were 15.8; while in the nine years, 1886-1894, they fell to 7.1; and in the five years, 1893-1896, they were only 2.7. These two nine-yearly periods were characterised by a sudden rise in the mortality and a slow decline, but the maximum in the first period (1879) was thirty-four per 10,000, while in the second period it was sixteen.

Taking the whole twenty years, the influence of season is very marked. The lowest month is August (4.8), and the highest is January (12.25); and taking the summer quarter as June, July, and August, it is 5.71; while the autumn and winter quarters are 10.9 each, and the spring 8.3. The meteorological elements which differentiate the seasons are temperature, relative humidity, and rainfall. Taking the whole twenty-years period, he shows by curves of temperature, relative humidity, and rainfall, that the two latter agree directly with the diphtheria death curve, while the first agrees with it inversely. This epidemiological inquiry establishes the fact, demonstrated in the laboratory, that moisture is favourable to the growth of Löfler's bacillus, and that, in common with all micro-organisms, sunlight is unfavourable to it. He discusses the part which catarrhal inflammations of the mucous membrane of the throat, etc., play in giving a nidus for the bacillus, as well as the question of mixed infection with streptococcus, staphylococcus, etc., being more likely at certain seasons and making the disease more fatal. The important consideration is the cause of this marked diminution in diphtheria mortality. Serum treatment is virtually not practised at all, and disinfection is little followed. There is no disinfection by the municipality, and no hospital for infectious diseases. It is in general sanitary improvements that the explanation is to be looked for. The old city, largely built on the somewhat steep lava slopes of Mount Etna, was chiefly made up of narrow streets, extremely filthy, and allowing of little circulation of air. There were no pavements, and the cesspools in the porous lava drained away readily into the soil and into the water of the nearest wells. He says these cesspools were much prized by the proprietors of the houses, as they never required emptying! Within the last twenty years this old quarter has been gradually abolished, and virtually a new city has been built, with wide and well-paved streets, which permit of the entrance of abundance of light and air. The soil, being protected from pollution by paving, is now purifying itself. An
abundant and pure water supply has been provided, which permits of cleanliness both of the person, the houses, and the streets.

The Care of the Consumptive Poor.

MM. Netter and Beanlavon reported on this subject to the Paris Congress on Tuberculosis (Presse méd., Paris, 1898, No. 64)—In Paris there are more than 6000 tuberculous patients chargeable to the administration of the "Assistance Publique." In the cases of the poor treated in their own homes, prophylaxis by disinfection of sputa, etc., is very difficult, and in the majority of cases almost quite illusory. But, however carefully the sputum is disinfected, they consider the patient still a source of infection to those near him, as, adopting the views of Flügge, they believe that in coughing without expectoration, and even in speaking, the bacilli are discharged for quite an appreciable distance into the air. Treatment in sanatoria is the only solution of the question, whether you view it from the point of curing or simply isolation, with its corresponding protection of those still unaffected. For cases in the early stages, sanatoria should be provided in the country, on sites specially selected as regards exposure, prevailing wind, soil, etc.; while in advanced cases, where isolation is the main feature (though cure is also aimed at), the sanatoria should be near the cities, to permit of the patients easily seeing their friends, and thus removing one of the objections to becoming inmates. Putting on one side the humanitarian question, the certain saving of life is a direct gain to the State. The Health Department of the German Empire calculates that, supposing 12,000 phthisical cases were annually treated, and that as a result of treatment 9000 of them can work on an average three years more; then, allowing £25 as the mean annual wage earned, the gain to the community, after defraying all expenses of sanatoria, is £375,000. But besides the upkeep of the sanatoria, the families dependent on the inmates must also be supported during the absence of the wage-earner. In Germany, where there is compulsory insurance against sickness, accident, and old age, an admirable method is followed. The insurance companies, finding that the most of their sickness pensions were for phthisical patients, made arrangements for sending them to sanatoria, and got part of the cost of their treatment there paid by the sick societies, which always pay the cost of medical treatment for their members. The expenses for the support of the families of the inmates incurred by the insurance companies are also in part defrayed by these sick societies. Thus in Germany the cases are got at the early stage where there is the highest percentage of cure, and the insurance companies recoup themselves for the expense of the treatment they have to meet by the diminished sickness pensions they have to pay. According to the authors, isolation hospitals are quite as costly and not nearly so efficacious as special sanatoria.

Knopf (Med. Rec., N. Y., 24th September 1898) contributes a paper on the State and municipal care of consumptives. Besides the regularly enforced laws against bovine tuberculosis, and the hygienic and prophylactic measures against tuberculosis in man, through sanitary regulations and public instruction, every State or municipality must take upon itself the care and treatment of curable and incurable cases of tuberculosis.
among the poor and those who cannot afford to enter private sanatoria, or have at home the best possible treatment. Just as there are Commissions in Lunacy for determining when a person is a proper subject for State care as a lunatic, so there should be commissions, composed of general practitioners and health officers, for determining the admissions into a State or municipal consumptive sanatorium. This commission would medically examine the applicant and other members of the family, and report the condition of the patient's dwelling, and its previous history re tuberculosis. They would also determine whether the patient could pay for his treatment, and whether his family in his absence would become destitute. The author thinks there should be also a "maternity sanatorium," where tubercular mothers could go a few months before delivery and remain some time after—the children to be artificially fed or wet-nurses employed, and the mother treated under the best hygienic conditions. The provision of sanatoria for consumptives would diminish the incomes of medical practitioners, and hence, for all work done in connection with such institutions by medical men, they should be remunerated by the State or municipality.

The Disinfection of Rooms Occupied by Tubercular Patients.

M. Martin, Inspector-General of Health for the City of Paris, describes (Presse méd., Paris, 1898, No. 64) the practice in Paris and the difficulties there met with. Few private houses are so arranged that easy or thorough prophylaxis by disinfection, etc., is possible. Cracks in roof and walls, paper on the walls and fissures in the flooring, give abundant places for tubercular dust to gather, which is with difficulty reached by disinfecting means. In the dwellings of the poor, where all these conditions are accentuated, there is too frequently added general uncleanness. What chance has prophylaxis when a one-roomed house occupied by a family, a member of which is phthisical, is at once kitchen, eating- and sleeping-room? Yet it is in such circumstances the most of the disinfections are carried out.

In 1892 the practice of disinfecting houses occupied by tubercular patients, either during their illness, after death, or before occupation by a new tenant, was begun and extends yearly. There were 10,000 such disinfections in 1897, and for the first six months of 1898 there were nearly 7000. Two years ago an investigation showed that there were 2500 phthisical poor living in their own houses. This was too great a number to cope with, considering the then existing disinfecting staff. A hundred cases were taken in different parts of the city, and only ten of these refused to allow disinfection. As a mean, each case had eight different disinfecting visits, though some of them that continued a year had as many as fifty.

Each case is supplied with two coloured-glass spitoons, in which water is generally put to a depth of about an inch. A solution of carbolic acid was first used, but the smell was found irritating to the patients. The used spitoon is to be cleansed every day by putting it into a pan of cold water, which is slowly heated to boiling, the contents being then discharged into the water-closet. But experience shows that in many cases this simple precaution cannot be carried out from the
want of such an ordinary utensil as a pan, and during most of the year from the want of a fire. All soiled linen (handkerchiefs, etc.) used by the patient are removed weekly for disinfection by steam. After use it is required to be plunged into boiling water for five minutes, but this, for reasons already mentioned, is often impossible. In these circumstances such linen is recommended to be kept apart, pending its removal to the disinfector. At the weekly visit, the disinfected linen is returned and the infected linen taken away, and the water-closet and all utensils used by the patient treated with a disinfectant; cresol being as a rule employed. After death, cure, or removal, the house and its furniture is disinfected. The author points out the following, as the conditions of practical efficient disinfection:—(1) Certain and rapid destruction of pathogenic organisms; (2) relative harmlessness of the substance used both for the occupants and the furniture, etc.; (3) cheapness and ease of application; (4) as far as possible, absence of disagreeable smell. The gaseous disinfectants, according to M. Martin, cannot be recommended. Sulphurous acid, if used efficiently, requires a long time—twelve hours for the actual disinfection, and at least twenty-four hours more before the room can be used. Formic aldehyde has great germicidal power, but no method has as yet been devised to make it sufficiently penetrating. Moreover, twenty-four hours' exposure to this vapour is necessary, and the room cannot be occupied for some days later. Thus neither of these methods of disinfection are practicable in the cases we are considering.

The method chiefly followed in Paris is that of spraying with a solution of corrosive sublimate and common salt. This, if carefully and methodically done, and repeated after an interval of some minutes, causes such a thorough wetting and impregnation of the walls and roof, as to produce in a few hours a disinfection as complete as can be obtained in a much longer time by gaseous disinfection. Moreover, this thorough spray of the room and its furniture, requiring such a movement of the contents of the room, ensures at least at this time that it is washed out.

Whenever a tubercular patient seeks admission to one of the hospitals, his address is sent to the disinfecting department, which at once asks permission to disinfect the house. This is sometimes, however, not granted. The great obstacle to the popularising of disinfection in cases of tubercle, is that the patient is often stamped by his neighbours as plague-stricken, and is sometimes even compelled to leave his house. To remove all such objections and obstacles, the education of the public is necessary as regards the infectivity, the preventibility, and the curability of phthisis.