

milk and flesh of tubercular animals introduced within the digestive tract is more worthy of attention but by far the most frequent source of infection is without doubt the tuberculous individual in whom the pathological process is located in the lungs. Here the expired air as the vehicle for this virus does not come under consideration, since the investigations of Naegle and others have shown that neither evaporations from the moist surface of the respiratory tract, or the forcing over it of a violent current of air, as in coughing, is able to carry the bacteria into the atmosphere. Tuberculous individuals, therefore, are only dangerous through their sputum, and only when it is dry and so distributed through the atmosphere that it may mix with the inspired air. That the healthy respiratory tract possesses means of protecting itself from the entrance of infective matter is clearly established, while it is also proved beyond doubt that under certain circumstances the respiratory passages may serve as the point of entrance of this virus to the lungs, and there be the starting-point of the phthisical process. If we now attempt to determine to what degree phthisical individuals, under ordinary circumstances, run the risk of causing the distribution of the bacillus, we will find that if phthisical patients started with the firm idea of destroying themselves and all around them as rapidly and as certainly as possible, they could not better accomplish their object than through the practices which we are every day encountering; for on all sides we find the universal habit of depositing the expectoration either on the floor or in the pocket-handkerchief—a procedure which is of all best calculated to favor the distribution of the sputum in dust form through the atmosphere. The sputum kept in the pocket, at the temperature of from 25° to 30° C soon becomes dry, and through friction rubbed to fine powder, and by subsequent use of the handkerchief by the patient himself is distributed through the atmosphere. The same applies to soiled bedclothes, shirts, etc.; in fact, Dr. Cornet, has been able to find bacilli in the dust of hospital wards, hotel rooms, private dwell-

lings, and prison cells in which phthisical patients have expectorated on the floor or in the pocket-handkerchief, while they were never found in rooms in which the spittoon had invariably been used. The prophylactic procedures based upon these observations are self-evident. All hygienic rules fall in importance far beneath the one axiom that sputum should be deposited only in spittoons, whether it come from a known phthisical individual or not. This may be attained by showing the phthisical patients that it is a means to their own protection; showing them that they otherwise are continually infecting themselves by taking new germs into their lungs. Therefore all dwelling-rooms, hospital wards, prisons, etc., should be furnished with spittoons and directions given that expectorated matter should be deposited in them. In several of the Berlin hospitals this rule is already in operation, and in these hospitals dust collected from rooms occupied by tubercular cases has been found to be absolutely free from bacilli. Where, as is the case in most of our large hospitals, it is not impossible, the contents of the spittoons should be rendered harmless by steam, while the spittoons themselves should always contain a little water. In case of death from tuberculosis, the dwelling-rooms should be thoroughly disinfected. The walls may be rubbed with freshly-baked bread,—a procedure proposed by Esmarch and based on scientific grounds. Bedding, carpets, etc., should likewise be well disinfected. So, also, in changing dwelling-places, even although they may not be known to have been occupied by tuberculous patients, they also should likewise be cleaned and purified. In hospitals, the separation of tuberculous patients from the other sick is desirable. Dr. Cornet believes that through the careful observation of these prophylactic principles, it will not be long before there will be a marked reduction in the spread of tuberculosis.

---

DR. SCHMELK, of Christiana, has found vast colonies of bacteria in the ice in Jerstedalsbræ glacier. During periods of thaw they multiply with great rapidity.