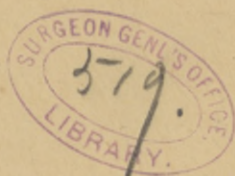


HERRICK (S.S.)

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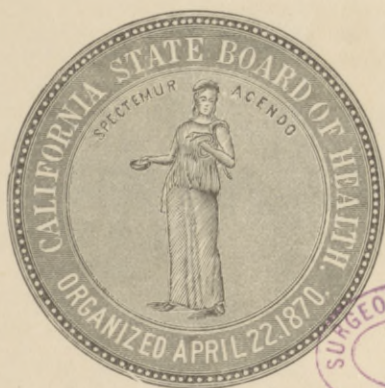
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By S. S. HERRICK, M.D., of San Francisco.

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THE SANITARY CONTROL OF TUBERCULOSIS.

By S. S. HERRICK, M.D., of San Francisco.

The bacillus tuberculosis as the causative agent, and the infectious nature of the various tubercular maladies, are assumed as settled. As to heredity, it is now about time to conclude that this figures mainly, if not entirely, as a predisposing condition. We may also dismiss endemic influences as causative, however much they may affect the prognosis of tuberculosis. There can be no climatic exemption of the inhabitants of Iceland, the Farøe, Shetland, and Hebrides islands, while the same race is scourged by pulmonary phthisis in Scandinavia. Moreover, the Eskimaux have escaped, for the simple reason that they have not been visited by phthisical voyagers.

A few instances, on the other hand, illustrate how certain localities become and remain deadly to their occupants, from constant subjection to the presence of tuberculous emanations in a confined atmosphere. In a certain office in Paris, during eleven years, fifteen out of twenty-three clerks died of tuberculosis. Cornet states that nearly 63 per cent of the deaths among the religious orders devoted to the care of the sick in Germany have been due to tuberculosis; and that in the Prussian prisons, for fifteen years, nearly 46 per cent of the male prisoners died of phthisis. It is certain that the huts of the Eskimaux have no sanitary advantage over these civilized abodes, except absence of tubercular infection. Dr. Flick's observations in Philadelphia during twenty-five years show that many of the houses in the fifth ward had six to eight deaths from this disease, and that over one third of the houses where deaths occurred had more than one case. He states that, during his residence at Blockley Hospital, two out of fifteen of his associates died, and he himself was thought for a time to be a victim, of pulmonary consumption.

The fact that the general progress of curative medicine has failed to reduce materially the fatality of these maladies, which still carry off more than 10 per cent of all who die, proves the necessity of prevention rather than cure. The chief danger exists in the products thrown off from the diseased organs; that is to say, the sputa from affected lungs, the alvine discharges from intestinal tuberculosis, the discharges from scrofulous ulcers, the natural secretions of diseased glands. The sputa of consumptives are more mischievous than all the rest. We know now how these carriers of infection must be dealt with, so as to render them innocuous without serious trouble. It is quite practicable for every affected person within doors to deposit infectious matters in a disinfecting liquid, and when abroad to carry a small receptacle similarly charged; or pieces of thin, unsized paper might be used and then burned.

In the light of knowledge now the common property of the medical profession, and largely shared by intelligent people throughout the civilized world, the time is at hand for our sanitary authorities to act

in this matter. The State Board of Health of Michigan set the example at its meeting held in October, 1893, when the following was adopted:

Resolved, That hereafter consumption (and other diseases due to the bacillus tuberculosis) shall be included in the official list of "Diseases Dangerous to the Public Health," referred to in Sections 1675 and 1676, Howell's Statutes, requiring notice by householders and physicians to the local Health Officer, as soon as such a disease is recognized.

The explanation is added: "The question of isolation of the patient is not mentioned. Its purpose is to secure to the local health authorities and to the State Board of Health information of the location of each case of this most dangerous disease, with the view of placing in the hands of the patient reliable information how to avoid giving the disease to others, and in the hands of those most endangered information how to avoid contracting this disease."

In December last, Dr. Herman Biggs, of the Health Department of the city of New York, made a report, which embodied these recommendations:¹

"1. That a circular be prepared for distribution among the people, setting forth the danger of contagion from tuberculosis, and the fact that the discharges from the lungs of tuberculous patients are not only dangerous to others, but also to the patient afflicted; and also setting forth the danger of expectorating in places where the sputum is liable to be dried and carried by the air in the form of dust.

"2. That physicians and other persons to whom the knowledge of the existence of a case of tuberculosis may come, be requested to report to this department all such cases within seven days of the time when such person comes under observation.

"3. The medical sanitary inspectors should, as a part of their duty, investigate doubtful cases of the disease reported and take specimens of the sputa for diagnostic purposes, the same as is done in cases of diphtheria. These specimens should be transmitted to the Division of Bacteriology for examination, and the Division of Bacteriology should be properly equipped for such examination for the purpose of obtaining definite knowledge upon which the proper sanitary *surveillance* of those suffering from tuberculosis can be based. Upon the verification of the diagnosis, the inspector should visit the physician reporting each case, and request him to fully instruct his patient and the persons with whom he is in contact, concerning the nature of the disease and the danger of its transmission. If the case be reported by laymen, or if the physician prefers that the inspector should assume the aforesaid duty, then the inspector should personally perform this service."

Also: "That this Board urge upon hospital authorities of the city of New York the importance of separation, so far as possible in the hospitals of this city, of persons suffering from pulmonary tuberculosis from those affected by other diseases, and urge that proper wards be set apart for the exclusive treatment of this disease."

And "That the Commissioners of Charities and Corrections be recommended to take such steps as will enable them to have and control a hospital, to be known as the Consumptive Hospital, to be used for the exclusive treatment of this disease; and that, as far as practicable, all inmates of the institutions under their care suffering from tuberculosis be transferred to this hospital."

Likewise it was recommended that the department provide disinfect-

tion in suitable instances, and that proper cuspidors be provided in public places, factories, etc.

It having transpired that the Board of Health of Philadelphia had this subject under consideration, the College of Physicians, at its meeting January 12, 1894, took it up, as proposed by its council, in the following terms:

Resolved, That the College of Physicians believes that the attempt to register consumptives and to treat them as the subjects of contagious disease, would be adding hardship to the lives of these unfortunates, stamping them as the outcasts of society. In view of the chronic character of the malady, it could not lead to any measure of real value not otherwise attainable.

That strict attention on the part of physicians in charge of the individual cases, insisting on the disinfection of the sputum and of the rooms, on adequate ventilation, and on the separation of the sick from the well, as far as possible, will meet the requirements of the situation so far as they practically can be met, and better than any rules that, for diseases so chronic, can be carried out by Boards of Health.

That the College of Physicians respectfully requests that no official action be taken by the Board of Health, except the insisting on disinfection of rooms in which consumptives have lived and died in instances in which such procedure is not likely to have been adopted under the direction of the attending physician.

The following substitute was offered by Dr. L. F. Flick:

Resolved, That we recommend to the Board of Health of the city of Philadelphia the registration and disinfection of houses which have been infected by tuberculosis.

That we recommend to the City Council of the city of Philadelphia the establishment of a municipal hospital for the treatment of persons suffering from tuberculosis.

After thorough discussion of the whole subject the substitute was rejected, and the original resolutions adopted.²

In the course of the discussion allusion was made to resolutions adopted at the late meeting of the American Public Health Association at Chicago, asking that registration should be practiced; also to similar action taken in the Section on Hygiene of the Pan-American Congress of 1893, and by the Congress of Tuberculosis at Paris in 1888 and 1891. Dr. Flick stated that under the precautions taken at Berlin, between 1884 and 1891, the mortality from consumption declined from 3.455 per 1,000 of population to 2.811, or .644 in seven years; while in Philadelphia the reduction was .623 per 1,000 in ten years; and in Paris the mortality remains about the same as it was thirty years ago from this disease—4.574 per 1,000. In England instructions have been published to inform consumptive patients how to avoid dissemination of the infection by the North London Hospital for Consumptives, the Royal National Hospital for Consumptives at Ventnor, the Manchester Hospital for Consumptives, and the County Borough of Oldham. The Medical Officer of Health of Manchester offers to disinfect gratuitously any house designated by a qualified medical man. The French "Ligue Préventive" has issued instructions to guard against danger from tubercular infection. In Germany disinfection is compulsory in houses where deaths occur from pulmonary consumption.

History repeats itself, and the wise man of old declared: "There is nothing new under the sun." *Apropos* of this point, Dr. Flick has recalled an extremely interesting experience in Southern Italy.³ In the year 1782 the following regulations were established in the Kingdom of Naples:

"1. That the physicians shall report the consumptive patient, when ulceration of the lungs has been established, under penalty, for the first, of 300 ducats, and, upon repetition, of banishment for ten years.

"2. That an inventory shall be made by the authorities of the clothing in the patient's room, to be identified after his death, and if any opposition shall be made, the person doing so, if he belongs to the lower class, shall have three years in the galleys or in prison; if to the nobility, three years in the castle and a penalty of 300 ducats.

"3. That the household goods which are not susceptible shall be immediately cleansed, and those that are susceptible shall be at once burned and destroyed.

"4. That the authorities themselves shall tear out and replaster the house, alter it from cellar to garret, carry away and burn the doors and wooden windows and put in new ones.

"5. That the poor sick shall be removed to a hospital.

"6. That newly built houses cannot be inhabited before one year from their completion, and six months after plastering and repairing have been done.

"7. That Superintendents of hospitals must keep in separate places clothing and bedding for the use of consumptives."

Other severe penalties were denounced to those who buy or sell objects which had been used by consumptives to servants, members of the family, and to any others who may violate the regulations. The destruction of property and enforced vacation of houses newly built or repaired for six or twelve months were unnecessary, but the segregation of the sick and the disinfection of all articles defiled by sputa were wise provisions. The law remained in force until the amalgamation of Naples and Sicily into the Kingdom of Italy in 1860, but it is not probable that it was strictly enforced, as some of its provisions were unreasonable and harsh.

The testimony of writers toward the end of the eighteenth century indicates that tuberculous diseases were more prevalent in the Neapolitan dominions than elsewhere in Europe, and their mortality is estimated by Dr. Flick at 10 per 1,000 of population in 1782. In 1834 they were reported about as prevalent at Naples as at London and Paris, but in 1848 De Renzi declared that their ravages had greatly abated, though the restrictions had been somewhat relaxed. There is evidence that the mortality from phthisis in Naples was 4 per 1,000 per annum in 1834; but in 1887 it had declined to 1.16 from phthisis and general tuberculosis in the urban population of the Neapolitan territory, while in the same population for the rest of Italy it was 2.20 per 1,000. This decline is the more noteworthy from the greater prevalence of tubercular diseases in the Neapolitan dominions than elsewhere in Italy when the law went into effect, and from the fact that Southern Italy has been largely resorted to by consumptive invalids. Notwithstanding the repeal of the restrictive law in 1860, it is probable that its essential features are still observed as a matter of custom.

But it should not be presumed that the contagious nature of pulmonary phthisis was first suspected in the eighteenth century. Hippocrates supposed heredity to figure in its causation, and was silent on its contagiousness; but contagion is ignored in all his works which have come down to us. On the other hand, Isocrates, his contemporary, speaking of empyema (evidently meaning pulmonary phthisis) indicates that it was then considered contagious. Aristotle and Galen seem to have shared this opinion. Lommins (writing in 1563) regarded phthisical sputa as contagious. Dr. Richard Morton, at the beginning of

the seventeenth century, asserted that consumption may be contracted from a bedfellow, like a contagious fever. Morgagni (1760) expressed his fear of dissecting bodies dead of this disease, on account of its contagious nature. Indeed, Tanner⁴ asserts that, until about 1790, pulmonary phthisis was generally considered contagious. From that date its contagious property rapidly went into discredit until the discovery of the bacillus tuberculosis.

From the foregoing it is manifest that the control of tubercular diseases is a question which this convention should take under serious consideration at the present meeting. In my judgment, the State Board of Health and the local Boards of our State cannot long delay action, and must soon decide upon some line of proceeding. As to the propriety of the health authorities, both State and local, disseminating among the population printed instructions for destroying the sputa and all other discharges containing the tubercular bacilli, there can be no question; nor as to their duty to disinfect apartments and houses whenever requested to do so by the occupants. Further action, looking to the registration and supervision of cases, seems to require legislative authority. Section 394 of the Penal Code, which prohibits the public exposure of any one affected with a contagious disease, except necessary removal to a suitable place, was enacted before the tubercular diseases were included in that list, and probably would not apply in its present terms. Section 3094 of the Political Code provides for reporting cases of cholera, smallpox, scarlatina, and diphtheria, and might be amended so as to include all forms of tuberculosis.

It is not to be presumed that public opinion at present would tolerate any limitation of the personal liberty of tuberculous subjects. The Political Code, for eighteen years, has required lepers to be segregated from the general population, but no one is required to report such cases; and, although the local authorities are commanded to notify the Secretary of State of all such as are kept segregated, no registration has ever been made, and the law nowhere states penalties for violating this act. It is very doubtful whether a law requiring cases of tuberculosis to be reported and registered would meet with even a fair degree of observance at the present time. Probably it would be wiser to wait until the public become better informed on the subject; otherwise we must expect violent opposition from some and passive resistance from the majority. Before the meeting of our Legislature in 1895, the working of the registration plan in Michigan, and perhaps in New York City, may become apparent, so that the State Board of Health may understand how to advise suitable legislation; if not, we can wait two years longer. Sanitary legislation should be somewhat in advance of the popular demand, but cannot succeed in opposition to general sentiment. At any rate, it is competent for this convention to declare its opinion in favor of specific enactments whenever there shall be reasonable prospect of willing observance.

In conclusion, we must not forget that certain domestic animals, especially milch cows, are notably subject to tuberculosis. Recent observations show that nations are affected by tuberculous diseases in proportion to their consumption of milk, and its products. Thus the lower class of Egyptians and Chinese are contrasted with the Tartars, though the better condition of the latter apparently gives them the advantage. Somewhat less striking is the exemption of the Moors of northern Africa and the proneness of the Spaniards and Portuguese.

The prevalence of abdominal and intra-cranial tuberculosis among young children, diminishing as milk figures less in their diet, is also instructive. Cows are often seriously diseased before the appearance of cough, fever, and emaciation, but we have recently learned the trustworthiness of the tuberculin test, and it should be resorted to whenever there is cause for suspicion. The simple precaution of boiling milk would be a safeguard, if people could be induced to make it a strict rule; while it has been found that the bacillus tuberculosis is destroyed by exposure of milk to a temperature of 167° F. for ten minutes, or of 158° for fifteen minutes. Investigation by the New Jersey State Dairy Commission has shown, however, that all the constituents of milk are rendered less digestible by the temperature necessary for sterilization.⁵

It is believed by Bang, of Leipsic, that both the milk and the butter of the same, from cows with tuberculous udders, is infectious when used as food;⁶ but I am not aware of any tests yet made with cheese. Yet it would be unsafe to conclude that the milk is free of bacilli, when the udders are apparently not affected, for Ernst obtained seven positive results from fourteen inoculations of such milk.⁶

The above considerations make it extremely desirable that the herds of cows which furnish milk to our cities should be kept under strict sanitary *surveillance*. In Copenhagen the Milk Supply Company, which sells the yield of more than 4,000 cows, is under the direction of experts, who have no share in the profits. The cows are examined every two weeks by veterinarians, and all the milk and cream are filtered.⁵ Until we can have the benefit of such supervision, our safety lies in the sterilization of fresh dairy milk by heat.

¹ *N. Y. Med. Rec.*, Dec. 23, 1893.

² *Med. News*, Feb. 10, 1894.

³ *Trans. Am. Pub. Health Asso.*, 1890.

⁴ *Pract. of Med.*, p. 569.

⁵ *Sajou's An.*, 1893.

⁶ *Sajou's An.*, 1892.

