

## WHERE THE DANGER LIES IN TUBERCULOSIS.

### A Study of the Social and Domestic Relations of Tuberculous Out-Patients.\*

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DURING the past year I have visited in their homes 190 out-patients of the Johns Hopkins Hospital suffering from tuberculosis. These people represent the poorer classes, who are compelled to work on in their illness to support themselves or their families. They are scattered over all parts of the city, but about 85% are limited to particular districts. One large area about the hospital, within a radius of 10 to 15 squares, and extending south-eastward along the harbor as far as Canton. The other district, angular in shape, follows West Baltimore and South Charles streets in a strip from 6 to 8 squares broad and 10 to 15 squares long. Throughout these two districts, which represent the oldest parts of Baltimore, we find the greatest massing of the poor. According to their social and domestic conditions our 190 patients divide themselves naturally into blacks, whites, and Russians. The Russians are distinguished from the rest of the whites by their exaggerated unsanitary condition.

I have tabulated the details of my observations on the sanitary environment in the individual cases under the following headings: location, crowding, cleanliness, light, and ventilation. Of course, there is no absolute standard that can be taken as a basis, yet according to my impression of the now generally accepted ideas of what would constitute a fair hygienic condition, I consider this summary to be a reasonable estimate of the existing conditions.

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## SUMMARY OF TABULATION.

Total number of patients . . . . .	190	}	Whites . . . . .	130
Number of houses occupied . . . . .	234		Blacks . . . . .	40
			Russians . . . . .	20
		RUSSIANS.	BLACKS.	WHITES.
Bad sanitary location . . . . .	69%		40%	30%
Insufficient light and ventilation . . . . .	83%		71%	46%
Overcrowding . . . . .	76%		50%	46%
Personal and household cleanliness . . . . .	75%		66%	43%

These statistics reveal a most distressing state of affairs among the Russians, who are dangerous elements in our midst as breeders and spreaders of this disease. They are fairly well limited to a triangular area bounded by Monument Street, Central Avenue and Jones' Falls. This represents one of the very oldest parts of the city, and the houses now used as tenement houses were originally built for private dwellings. They are packed into these dark, unventilated tenement houses, often families of from 6 to 10 in 2 small, filthy rooms. The halls are never lighted, and seem to be never cleaned. Thus shut in from fresh air and sunlight, living in filth sometimes absolutely beyond description, their resistance to disease must naturally be lowered. We can but fear, therefore, the danger of infection that attends the reckless distribution of tuberculous sputum about the halls and dirty rooms.

The blacks form an intermediate class between the Russians and the rest of the whites. Sixty per cent of them have at least fairly good locations. There is, however, a decided drop in the percentage of other elements that go to make up hygienic environment. Seventy-one percent have insufficient light and ventilation. The houses in the narrow alleys and courts, where so many of them live, are roughly and cheaply built, and have not the facilities for proper light. Fifty per cent of the negroes are overcrowded, and a much higher percentage (66%) are dirty. Their poverty in many instances is extreme. Perhaps on this account there appears to be among them a greater neglect of the sick. One man was found who had been confined to his bed several weeks with almost no care whatever. His father came in daily to bring him a few scraps of food. The poor fellow was spitting at random over everything within reach. His bed and the walls and floor besmeared with sputum were extremely unsightly. Some observations

in similar cases were still more disgusting, because made in the season when swarms of flies were found crawling over the walls and bed, feeding on the sputum. It seems unnecessary for me to say here that such individuals should be removed to some hospital or sanatorium, and that someone should be responsible for the disinfection of such rooms.

The colored people seem to be especially careless about smearing their sputum over their clothing. While talking with them I have frequently had occasion to stop individuals from depositing their spit on the corner of an apron or some other garment worn.

Turning now to the whites, who form the most interesting and most hopeful class for the trial of our methods of prophylaxis, the statistics show that 70% have at least fairly good location. In regard to light, crowding, and cleanliness, less favorable percentages present themselves. This only emphasizes the greater need of such prophylactic measures as have here been undertaken.

Though in many cases the facilities for proper light and ventilation are inadequate, yet a large number of the 46% living with insufficient light and ventilation do so because the houses are kept dark and close by keeping the blinds and windows shut. Oftentimes the crowding is not from want of room, but from a natural tendency of the individuals of a household to huddle together.

When the consumptive is ill enough to be confined to the house, it is common to find that he has been given a couch in the corner of the family living-room, which is generally the darkest and closest room in the house. Frequently if the patient finds difficulty in getting up and down stairs, he prefers to spend his nights also on his couch in the corner.

Where large families are crowded into two or three small rooms, the kitchen must also serve as a bedroom, and almost invariably, especially in winter time, the one with a cough is favored with a place in the kitchen close to the fire.

*Occupation.*—The occupation of some of these patients has a practical bearing on their relation to society. In the majority of cases their occupation confines them

within doors. This means that rigid precautions need to be taken to destroy the spit. Individuals at work are prone to spit carelessly about them. When this chance to be on the floor of closed rooms protected from the sunlight, the germs may retain their virulence for a long time. As these germs become stirred up from time to time, they may infect other occupants of the room, or be deposited on the materials worked upon. As an illustration: In a filthy, unventilated room I found four men working on willow ware. One of the men, a consumptive, was spitting about the floor and even on the willows. I feel certain that the other three men were in imminent danger of direct infection.

The sweatshops have a goodly representation among these 190 individuals. Patients often tell me that among the 20, or 30, or 40 individuals who work in the room with them they can point to several who have pulmonary troubles similar to their own.

Not a few of these patients have to do with the handling of food which might easily become contaminated by contact with their soiled fingers. In our list we find cooks, bakers, cracker packers, and keepers of little milk and meat shops represented.

Following the studies of Flick in Philadelphia, the Board of Health of New York City has demonstrated, by the results of an investigation made to determine the distribution of tuberculosis in that city, that much importance attaches to the idea of house infection. Their statistics show that tuberculosis is not uniformly distributed, but that the bulk of the cases are confined to narrow limits in certain streets and houses. They have noted the development of cases of tuberculosis in families that have successively occupied these houses. A look at their maps shows that sometimes six or eight patients were in a house at one time. I might state here that in several instances I learned that patients had developed the disease subsequent to occupation of houses previously occupied by tuberculous patients. Several times I found two patients, and on one occasion four patients, living in the same house. In all these cases they were members of the same family.

While my statistics are too limited to admit of any conclusions, they do point to the rapidity with which

Baltimore houses are becoming centers of infection. During the brief period that these 190 cases were under my observation they had occupied 234 houses. When the tuberculous occupants move out new occupants move in without any attempt at disinfection. In 58% of these cases the family history was absolutely negative, which suggests the possibility of a general source of infection, and may we not look to infected houses as one of the most important?

My work has been to visit these tuberculous patients in their homes and give them a few simple instructions on the nature of their disease, the mode of its contagion, and methods of its prevention by the cultivation of habits of cleanliness, the destruction of the sputum, and the admission of air and sunlight into their houses. In many instances among these poor people the patient can and will be given a sunny room in the house, in a measure isolated from the rest, with very little inconvenience, when they learn that any benefit may be derived from such a step. Most of the patients and their families as well are absolutely ignorant of the idea of contagion. The few that have begun to look upon the disease as communicable, because of their ignorance of the mode of infection and methods of prevention, live in deadly fear that they transmit or contract the disease. To such the information that the elements of contagion are in the sputum, and can be destroyed, is heralded with gladness. If the physician has not informed the patient as to the exact nature of his disease, I have not found it necessary to do so. It is enough for him to know that it is transmissible, be it in his mind throat-trouble, catarrh, or bronchitis.

The need of this kind of education of the public by house-to-house visitation is intense, and I feel that most of these individuals, unless it be the Russians, are teachable.

When we have taught the tuberculous patient to destroy his sputum, to rid his room of carpets and other germ catchers, and to throw open his windows to admit the sunshine and fresh air, we may then begin to look for a visible decrease in the tuberculous entries on our dispensary records.

The statistics of the Board of Health of New York

City show a remarkable decrease in the death-rate from tuberculosis since they began a systematic education of the tuberculous poor, and the disinfection of tenement houses occupied by tuberculous patients.

On account of limited time I can but feel that my work lacks thoroughness. To really follow these cases by repeated visits has been impossible. Nevertheless I am happy to say that in the few cases in which subsequent visits were made I found visible signs of an effort to follow my directions. I recall one case in particular. At the first visit I found my patient, a young man of 21 (the oldest of 5 boys, all at home), spitting at random into his handkerchief, or into the sink, or on the floor, just as he found it most convenient. Dried sputum was in evidence all about the room, which made it very disagreeable for the rest of the family. Not one member of the family had had the least suspicion of fear of contagion. At a second visit, one week later, I found that the floor had been scrubbed with lye, and the patient was carefully collecting his spit in a vessel containing antiseptic fluid. The mother showed herself to be especially grateful for my few words of advice and warning.