Hamilton (H.)

medical tuberculosis

MEDICAL TUBERCULOSIS.

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Medical tuberculosis is limited by the exclusion of those cases which by surgical interference can be relieved.

Presuming that the constant factor of tuberculosis is the bacillus tuberculosis, its bacteriological determination is essential for the diagnosis of the disease. Having now indicated the field of the subject, it becomes easy to discuss briefly the several forms that demand treatment. The almost invariable presence of the bacilli in those afflicted with phthisical complaints makes one wonder if the bacillus tuberculosus is the universal cause of this fatal condition of the human organism. The system is affected with more or less rapidity not always in accordance with the physique of the individual.

The studies of Koch brought out an immense amount of information, although his original purpose was frustrated and his benevolent hopes unrealized, yet the publication of his postulates stimulated extensive and active research with sure principles upon which to formulate methods of treatment. A digression is made at this point into some of the effects of bacteriological growth and products. The simple growth of vegetation requires heat and moisture. The fungi bacteria require heat and moisture. They secure it at the expense of the normal physiological function that necessarily produces pathological physiological performance. This pathological condition is noted by irritation that shows its presence by sensitive degrees of febrile movement.

The alteration of the albumin present in the body into forms (chemical formula), which before the introduction of germs (bacilli) were inoxous, become through its parasitic ex-

istence, toxic—even to the bacterium itself. The object of germ life is to perform a vital cycle—probably best illustrated in vinegar, which live in great numbers in cider, by the germs and by their presence and animation change the saccharine material, through the alcoholic, to the acetous fermentation.

The process of making bread by yeast is another familiar illustration of this fact, stopped in its process by baking heat. Domestic wines are made this way, by stopping the fermentation in the alcoholic stage. Now observe that both *vinegar* and *alcohol* are antiseptics, preserving from decay vegetables and flesh.

Now the products of certain bacteria are *indol* and *phenol*—"antiseptics" we call them—should they in their cycle of living produce these by-products beyond the normal, they would cease their active career, provided no new albumins were offered for their consumption.

The *Tuberculin* treatment of tuberculosis disturbances in the coarser tissues was to a degree successful. Was it because those muscular tissues were firmer and changes in them slower? The application of these by-products locally in lupus, etc., had singularly fair results. In the lung tissues of a finer and more delicate character, it was impossible to reach the nidus of disease without also exciting an intense influence upon the general system. Whether the balance of the by-products to the life of the bacilli in lupus was so disturbed as to destroy the bacillus tuberculosis, remains beyond my ken—but it is a thought.

An alga in water previously used by an alga dies from its constantly used supplies of nourishment, and the excretions or by-products of its existence. Analogically, an animal would die in a closed vessel from the inhalation of his own exhaled carbonic dioxide—a by-product.

The art of the Japanese horticulturists that produce dwarf, undeveloped fruit trees is well known. Can we stunt or stop the growth of these parasites by cutting off their supplies? We have succeeded in surgery to such an extent that the continuity of healthy tissue is separated and repaired at pleasure by following the simple rules of modern surgical practice.

There is no pus in pure surgical interference. "Healthy pus!" who ever hears that phrase now?

Strümpel, measuring the irritation in consumptives, from the febrile movement observed in thermometic records, divides them into five classes:

Classes.	Morning.	Evening.
I. Sub-fever	N	100.4 to 101.3° F.
II. Hectic intermitt.	N+	101.3 to 104.
III. Remittent	100.4–101.3° F.	103.1 and upward.
IV.	Continuous	Fever.
V.	Irregular	Fever.

When we change the climate by altitude or latitude, *i. e.* returning the individual to his geographical place, we allay the ravages of the baccilli for a time.

We attempt and succeed when we send persons to the dry Colorado plains or the altitudes covered with balsamic pines. Where these are not possible, the application of the several essential (odorous) oils or their acid derivatives inhaled regularly, with generous diet and discipline of the general habits, we find an average rising from 50 to 80 per cent., benefited and have their lives prolonged. The United States is rich in varieties of climate suitable for persons with pulmonary disease.

Respecting the contagiousness of tuberculosis there can be no question. The German police ministry promulgated detailed orders in 1891, which have been copied; and we are now agitating the populous cities of New York and Philadelphia to adopt them. The enforcement in Germany of this proclamation has already attained gratifying results; and the next twenty years will testify to its great wisdom. Compulsory vaccination has almost eradicated variola from the schedule of the national calendar diseases of Prussia.

To sum up this matter:

1. Bacteriological diagnosis of the disease is essential.

2. The pathological process offers inducements of success in germicidal local treatment—which has succeeded so efficiently in modern surgery.

3. That the febrile movement should be diligently studied, both without and with active treatment, as insisted upon by Strümpel.

4. That climatic and sanitary conditions are necessary in the *whole* individual.

5. That every effort toward preventing the dissemination of *dried* sputum should be used.