

## TUBERCULOSIS AND "I.K." THERAPY.

By MISS GLADYS TATHAM.

### I.

Tuberculosis is a racial poison. Not in the same sense that syphilis is, but, in the enormous toll it exacts from the population every year, tuberculosis must rank as a serious menace to national health and efficiency. It is calculated that one out of every ten deaths, from all causes, is due to tuberculosis. Choosing 100 persons, between the ages of twenty and thirty-five, it is estimated that over 30 per cent. will be found suffering from tuberculosis. The disease is most prevalent during what ought to be the most productive period of a human life. Yet human beings are not necessarily predisposed to tuberculosis. Given suitable environment and freedom from hereditary taint, tuberculosis could probably be reduced to a minimum, even as smallpox has been. A predisposition to tuberculosis may be caused by:—

- (a) Hereditary taint.
- (b) Chronic alcoholism or other intemperance.
- (c) Overwork, malnutrition, debility, &c.
- (d) Bad environment.
- (e) Injuries (damaged cell tissue) may cause a local predisposition.

It is generally agreed nowadays that tuberculosis itself is incapable of being transmitted from parent to offspring in the same way that the micro-organisms (*spirochætæ pallidæ*) of syphilis are handed on. But the susceptibility to tuberculosis is undoubtedly hereditary. In practice it has been found that about one-third of the children of tubercular parents develop the disease. Bad environmental conditions are probably responsible for as many cases of tuberculosis as all the other predisposing causes put together. While overcrowding—with its attendant evils of impure air, defective and deficient sanitation, moral laxities, &c.—is permitted in our towns, we can never hope to abolish the great "White Plague" from our midst. It is all very well to build sanatoria and devise expensive methods of curing tubercular individuals, but it would be better (and cheaper!) to *prevent* and eradicate the disease altogether. Perhaps an efficient sanitary system, housing reform, sufficient food and warmth to maintain health for all, appears too Utopian to be realised at present, nevertheless these ideals should be groped after, even if unattainable, by every health missionary in the kingdom!

Tuberculosis is classed as a communicable (infectious) disease. It is invariably associated with its specific living organisms, and can only be spread by the transference of these organisms. The "dose of infection" varies with the individual, and with the same individual at different times according to the degree of his resistance to the poison. The researches of Carl Spengler\* have proved that the erythrocytes (red blood cells) are the main seats of the production and accumulation of those substances which enable the body to neutralise the toxins of tuberculosis. Anything which lowers the vitality of the body, and thereby impoverishes and diminishes the patient's blood, will become a predisposing cause to acquiring tuberculosis.

Tubercle bacilli are distributed through the air largely as dust, which arises from dried sputum. They are also expelled in microscopic droplets when a tubercular individual coughs or sneezes without adequately protecting his mouth and nose.

Infected milk or other articles of food may also cause tuberculosis in young infants or adults with a predisposition to the disease. Adults are usually considered capable of digesting moderate doses of tubercle bacilli, but young infants frequently become sufferers from intestinal tuberculosis. At the same time the very general idea that unboiled milk is capable of giving infants tuberculosis is rapidly losing ground. The experiments made by Spengler and others appear to prove the extreme rarity of bovine tuberculosis being communicated to man. Spengler was the first worker on the subject to distinguish between "True Bovinus" and "Humano-longus" tubercle bacilli. This obviously introduces a serious factor of uncertainty into the results of other investigators of the possible conveyance of infection from cattle to man. It is by no means certain that the bacilli sometimes found in human beings (differing from Koch's "Brevis" bacilli), and reported as "True Bovinus," were not in reality "Humano-longus" bacilli. Only thorough investigations will definitely settle this point.

### II.

When the late Professor Koch introduced his tuberculin he gave the following description of it:—"I have produced a material which I find has a very marked influence on tuberculosis." He also intimated that it would have little or no influence on Phthisis. In spite of the very

\* At the Koch Institute, Berlin, and at his clinic in Davos.

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