

when touched ; teeth black and crumbling ; salivation, Pyorrhœa.

Worse. Anger, indignation, grief, mortification, sexual excesses.

Better. After breakfast, warmth, rest at night.

Sulphur 30, 200. There is swelling of gums with beating pains in them ; hæmorrhage from gums associated with throbbing pains.

Thuja 30, 200. The gums are swollen, inflamed, dark-red in streaks ; teeth decay next to gums and they are very sensitive ; gums retract ; pyorrhœa alveolaris.

Zincum Met. 6, 30. The gums bleed and are swollen ; gums painful while eating, ulcerated, white.

The Method of Treating Tuberculosis.

BY DR. RANA T. H. A. DONDINEAN, B. A.

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The reply was "My dear Sir, you are, God forbid, digging your own grave with your own spade and shovel, but I am the last person to suffer to see you too miserable in the company of your honourable wife. But beware, you would be too hard upon your good wife, within a fortnight, unless you mend your habits and give a healthy and sacred tone to your thoughts and imaginations. She would be more desolate and gloomier than you are. I can not allow a lady's picture or a novel even to remain in your room. Don't kill each other, I say. Indulgence is death immediate to you and infection and death to her afterwards."

But one great thing remains out of consideration, the prevention of contamination, chiefly bacterial, by eradica-

tion of bovine tuberculosis by an educational campaign in all-pure-cattle breeding and a material advance in the campaign for better milk, viz state certified milk free from tuberculous contamination and bovine diseases under chemical inspection and state control by penal legislation.

In this connection Indian consumers of milk ignorant and indifferent heretofore should remember (1) that milk readily absorbs odors from the air (2) that dirt particles and bacteria from the cow's body and the air find their way into the milk. (3) that feeding after milking, washing, and clipping the cow's udder and flank and other aseptic measures and (4) that the use of milking machines minimises the germ contents of the milk and (5) that the discovery of the value of the covered and small-topped milk poil has safeguarded the spread of communicable diseases. These facts have been proved in a scientific and practical way by the tuberculin test of the International Association of Dairy and Milk Inspectors in Washington and the American Association of medical milk commissions, the reforms of which are sure to minimise the spread of the fell disease now ramping by leaps and bounds in India.

THE TUBERCULOSIS SITUATION, THE MARKET MILK QUESTION, AND INDIAN INDIFFERENCE.

The history of Tuberculosis from the time immemorial is a history that repeats itself. Fact repeats itself, though figures are multiplying. The virtues of open air treatment and abundance of nutrition are truths repeatedly advised and insisted upon. The most effective curative medication lies in its practical prevention. The absolute fact of its infectiousness has been proved by Aristotle even. Aphrodisias, who saw the light of day in the second century regarded the breath of the "phthisical patients" as poison-

ous. Its propagation, according to Aristotle, is attributed to vitiation of the air by infected persons. The Arabian physicians held the same view. In Florence, Verona, Nantes, Bologna, Venice and Naples (late) there were regular propaganda against the spread of infection and legislation against pulmonary tuberculosis. The clothings of patients were burned in the market place of Nantes. The New York Board of Health are combating these cases by employing medical inspectors and trained nurses visiting families and attending hospitals. Poor and ignorant patients increase in number. In 1903, 25,000 persons out of a population of 2,186,017 suffered from the disease, but owing to state supervision and legislation the death rate varied from 2'88—2'68. The subtle nature of the infection had induced a feeling of indifference but the question is certainly one of great importance and magnitude and requires education of the public mind as to the importance of preventive measures, and foundation of education centres for the eradication of the disease.

The measures adopted are as follows :—

- (1) The burning of the old clothes of sufferers.
- (2) The destruction of the infected sputum.
- (3) Isolation of the patients and removal out of the city, partly for their own welfare and partly to protect the community.
- (4) Disinfection of rooms, beds and utensils used by patients.
- (5) Penalties inflicted on patients frequenting or visiting market places, and using public conveyances.
- (6) Prevention of adulteration of milk and inspection of infected cattle and their breeding.
- (7) Inspection of slums and hotels.
- (8) Inspection of persons before admission to public places clubs or institutions.

- (9) Enforcing use of clean habits.
- (10) Disinfection of laundries.
- (11) Disinfection of public urinals and privies.

Cases of absolute negation of the above measures are enormous in India.

(1) The traffic in old coats, beds etc. in the Indian markets. The poor people are the purchasers, ignorant of infection.

(2) Spitting on floors, windows, walls, beds etc., indifferently and unsuspectingly.

(3) Sleeping on the same bed and living in the same room with the patient, in the hearts of crowded cities.

(4) Absence of lime washing of rooms, absence of cleaning of beds, clothes etc., eating out of the same plates used by the patients, and partaking of the foods left by the patients after meal, smoking the same hookah, and drinking out of the same cups.

(5) Patients are associating freely in public places, in libraries, tea-shops, theatres, clubs, sweet-meat-shops etc.

(6) Milk is adulterated without impurity, mixed up with water, various kinds of milk of various cows, often dirty and infected, are mixed up unscrupulously.

THE LAST POINT DESERVES ESPECIAL DELINEATION.

The researches of the Bern Dairy School at Riitti-Zollikofen regarding control of the quantity of milk and milk-products, analysis of margin cheese, observations on the influence of fertiliser on the fitness of milk for cheese making and various statistics regarding cream industries are highly instructive. The Test Associations and breed improvement in Malnis (Sweden) are doing a great service to suffering humanity. Dr. E. Kohn Abrest

has published an article regarding the treatment of milk in cities especially of that from tuberculous cows.

In his opinion heat is the only agent of preservation allowable from a hygienic stand point. Milk from healthy cows under sanitary conditions, if pasteurized immediately will keep for at least 24 hours at ordinary temperature and longer at lower temperature. If the milk is to be preserved for a considerable period it must be sterilised by heat. Milk from tuberculous cows contains products of secretion from the tubercle bacillus that are not destroyed by heat. The effect of treating milk with carbon dioxide gas under pressure on the development of lactic acid in milk, fresh separator skim milk, fresh whole milk is beneficial. In case of cows affected with udder tuberculosis (which is extremely virulent) the practicability of milking machines is very promising.

Dr. E. H. Schorer's article in the Journal of Infectious Diseases No. 3. pp. 295-337, 1912 shows that our better classes of milk contain little sediment, market milks containing more dirt but fewer cells than certified milks. The Tromsdorff tube is a convenient method for examining dirt and cells. Cream on rising carries with it a large portion of the bacteria in milk. Of the bacteria in good milk about 30 p. c. are acid producers. Market butter and cream contain virulent streptococci which play an important part in epidemic sore throat and transmit to man anthrax actinomycosis, actinobacillosis, and mammary actinophytosis. The pathology of these diseases is akin to that of tuberculosis. Bovine tuberculosis is prevented by vaccination of cattle through alimentary tract. (These facts are coldly neglected in India).

From the last sentence it is clear that tuberculosis as well as other fatal diseases are transmitted to men through animal contact and assimilation of animal food as well as:

milk. But we have to stretch our imaginative vision further, as a great medical authority of ancient India has stated and advised "In order to cure man, first cure the plants which are infected, then cure the animals which derive the infection from the plant-world. If the vegetable kingdom is pure, the animal kingdom is pure, and if the animal kingdom is pure, can the human system be impure or infected." Hence the plant kingdom is to be freed from diseases by manure properties first. Hence the Ayurveda is so strict about the disinfecting process of the plants. The animals which serve us with food must be freed from diseases by strict sanitary precautions and necessary inoculations especially in chronic hypertropic enteritis of cattle (referred to by a famous French Physician named E. Lienaux) which ultimately lead to fatal tuberculosis.

Cow pox vaccine is a protection against foot and mouth diseases of cattle, more especially against stomatitis.

A note from the hoary pages of the Ayurveda is at the same time, invaluable in the luminous world-galaxy of Therapeutic notes. The origin of Tuberculosis is due to the following, according to Charak :—(1) বেগধারণা or due to retention of tears, urine, stool, semen, winds, eructations, yæons, vomitings, sneezings, coughs, breath (inhalations and exhalations), thirst, hunger, sleep and all excited feelings, passions, and carnal desires, fear, grief, shock and shudder.

(2) সাহস or due to suddenly attacking an enemy in a combat and loss of semen and strength by the exertion, or due to riding violently.

(3) বিষমাশনা or due to taking poison or contracting contagion or infection, through contact and adulterated foods.

(4) কফঃপ্রধানৈর্দেহৈস্তু কক্ষ্মেষ্ বসবজ্জ্ব অনন্তরা সর্বে ধাতবঃ স্মীয়ন্তে,

ততঃ মানব শুষ্যতি। মার্গাবরোধে রস রক্ত ক্ষয়ঃ, কুপিতবাতেন রসস্য শোষণাচ্চ। শুক্রে স্মীণে মজ্জা স্কীয়তে, মঞ্জনি স্বেদেহি স্কীয়তে। শুক্রে স্কয়াং বায়ু কুপ্যতি। তত বায়ুকোপাং পিত্তকোপঃ স্যাং।

The vital substances and fluids in the mucous membranes, air-sacs, nerves, veins and tissues all dry up and the human body is emaciated. The blood decreases in quantity and the wind increases and rushes upwards. Semen decreases, the marrow diminishes and the bones decay in size and weight. The biles, too, preponderate. Then Tuberculosis appears in six forms :—

(1) Heat and burning in the shoulders, sides, palm of the hands, feet, and slow fever in general.

(2) Cholera, Asthma, difficult respirations, bloody expectoration and effusion of blood, ultimately profuse.

(3) Hoarseness and suffocation, contraction of the muscles, sides and shoulder blades.

(4) Burning all over the body, diarrhoea, dysentery, & hæmorrhage.

(5) Impotency due to loss of blood, semen, and vital powers.

(6) Flatulence and loss of appetite, extremely sluggish liver and anemia, excessive thirst and nausea.

(7) Mental symptoms :—night sweat with nervous exhaustion and prostration, tired feeling, despair of life and sometimes with tendency to commit suicide as a means to get rid of all worries.]

The remedies most strongly recommended by Charak and Susruta are amongst others :—

(1) Control the stools by setting right the sluggish liver and (2) Control the Semen by thickening it.

Again, the followings are the recommendations of the Bengal Public Health Dept :—(3) Increase the blood and vital powers by absorbing as much vitamin, as possible, through good food.

(4) Enjoy sun-light and fresh air, (day and night) and never cover the head.

(5) Take exercise interspersed with judicious rest.

(6) Observe cleanliness (so that you do not infect yourself and others) and aloofness (especially from children), trying always to disinfect yourself.

In fine, "A *careful* consumptive is not dangerous to those with whom he lives, but a *careless* one is."

(Rana T. H. A-Dondinean.)

In the opinion of Harit and others, this disease is due also to taking food uncongenial to the health of the sufferer, and indulgence in sexual intercourse, in disregard of consequences (the sexual desires are extremely inordinate at all stages of the disease). The patient often dreams as if he were being carried away by crows, porcupines, snakes, vultures, monkeys, lizards etc. or as if he were in front of a dried up river, tree or woods full of smoke and fire. The brain is also full of phlegm which is scarcely relieved except by death. There may be some sores in the thigh which heralds the disease, in many cases, the fatal sequel of which is putrid expectoration. The heart diseases also appear and lead the sufferer to a despicable state.

The following articles of food are forbidden :—Rich food with spices, betel-nut and betel-leaves, tobacco, onions, garlic, rich pulse, acid things, bitter vegetables, piper, beans, half-cooked and stale foods and curries.

Purgatives and laxatives, exertions, co-habitation, hard work, keeping late hours, and all desperate actions—are calculated to hasten death.