

An Opinion on Consumption.

Sir,—Dr. Savarelli's paper at the recent Rome Congress deserves the attention of every thoughtful person. It strikes a new note in the consideration of tuberculosis, and that is, the power of the healthy organism to resist deleterious bacilli.

The only real preventive medicine is to take all the measures possible to increase the sum of vitality in the organism. To ignore the influence of mind over body, as is the rule with medical orthodoxy, is a fatal mistake. The human organism is a living machine, which must be intelligently studied in all its parts. In every case of consumption there has been for a long time previous to the onset of the disease a steady decline of the vital scale. In other words, the organism was unable to generate nerve force in sufficient quantities to positively resist noxious influences.

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Answers to Correspondents:

Sewage Disposal for Hospital Building.

Dr. C. Howson, of Islay, Alberta, writes asking advice as to the best system of sewage disposal for a small hospital containing ten beds with a possibility of as many as twenty patients, with nurses and help. The hospital is apart from other buildings and located in a country place. The water supply is obtained from a well in basement.

We are also asked to give the approximate cost of an adequate system.

There are several methods of disposing of sewage from isolated buildings where there is no main sewerage system for the district. The adoption of any one method depends entirely upon local conditions with reference to suitability. There is no cut and dried system which can be said to meet all conditions.

In the above case the most important feature appears to be that the sewage be led for a distance away from the building in such a manner that any percolation cannot possibly affect the well in the basement, either from leakage from the sewer, or by way of the method of disposal chosen.

If a sufficient area of friable sandy soil can be found at a sufficient distance from the well with a falling gradient from the

location of the well, then such soil may be utilized for purposes of sub-irrigation. With this system, small sedimentation tanks in duplicate should be built, through which the sewage passes at a sufficiently low velocity to allow the solids to settle out. The liquid is then conveyed to the soil by means of small sub-soil drainage tile pipes and distributed under the ground surface at a depth from 1 foot 6 inches to 2 feet. Failing suitable porous land it is necessary to construct an artificial filter area composed of broken stone well drained. There are three factors relative to sewage purification which may or may not be fully demanded, depending upon local conditions. These are:

- (a) Removal of solids from the sewage.
- (b) Oxidation of the unstable organic compounds, which, if allowed to putrefy, cause a nuisance.

(c) Disinfection of the resultant effluent from (a) and (b) if the final liquid is to be turned into any water which is used for domestic or dairy purposes.

The factor (a) is usually dealt with by sedimentation tanks. The factor (b) by land suitable, or otherwise by artificial areas of porous material. The factor (c) by the application of a solution of chloride of lime and water to the effluent. The amount of chloride of lime required depending upon the efficiency of the factors (a) and (b). From 6 to 12 lbs. of chloride of lime per 1,000,000 lbs. of sewage may be required, presenting the proportion of from 2 to 4 parts of free chlorine per 1,000,000.

The cost of any such system for an hospital as described, depends again upon the extent of purification required and as to how far topography and local conditions lend themselves to any particular scheme.

We must advise the authorities connected with the institution, to call for the advice of an expert, or submit to him data, as follows:

Topographical map of location of the hospital showing some portion of suitable land say 300 square yards in area on to which a fall may be obtained in order to convey the sewage by gravitation.

If artificial filters are required, the tanks and filters will require about from 6 to 7 feet head between influent and effluent, for efficient operation. If suitable land is to be obtained then the head may be from 3 to 4 feet only.—*Ed.*