

12. *The Müller-Kolaczek's Biological Reaction* is based on absence of proteolytic ferment from these fluids. Without entering into the details of the test we may point out that proteolysis can occur in purely tuberculous pus—(1) if iodoform has been used for treatment; (2) if there is a mixed infection; or (3) both conditions obtain; (4) anti-ferment action has to be remembered as a possible contingency. The last point is under investigation.

13. *Drug Tests*.—It has been found by Landolfi that administration of sodium iodide causes no reappearance of the drug in the effusion in cases of tubercle.

14. *Inorganic Constituents*.—The concentration of *chlorides* varies from 0.024 to 0.087, the higher value being met with in a case of long standing. The content in chlorides is decidedly higher in peritoneal tubercle than in pleural. *Phosphates* are usually present in only very small amount.

15. The total concentration of *Electrolytes* varies from 0.179 to 0.343, with an average of 0.236 for peritoneal fluids, and 0.299 for pleural. The detailed significance of these observations is considerable, and has been dealt with elsewhere. It is, however, worth calling attention to the fact that in *early* stages of tubercle the "salt" ratio may remain below unity.

16. The *Osmotic Concentration* is usually rather higher than normal. It varies between 0.297 and 0.313, when it approaches that of blood.

The above condensed notes will, it is hoped, be of service to those who propose making excursions into this new and promising field of research.

SANITARY TENEMENTS FOR TUBERCULOUS FAMILIES.

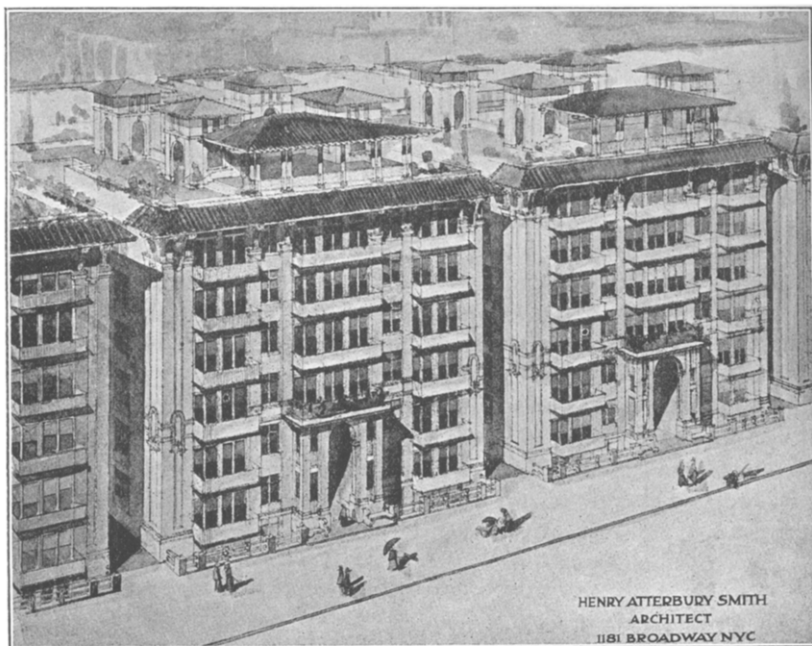
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It has long been felt by thoughtful physicians, who come much in contact with tuberculous disease in the poorer classes of society, that for any lasting benefit to accrue to them the problem must be more vigorously attacked in the home itself. Valuable as are sanatoria in the treatment of tuberculosis, their greatest usefulness will probably always consist in the care of the well-to-do patient, who can put hygienic measures into practice, and continue after leaving the sana-

torium the right mode of hygienic living, which alone makes probable his permanent recovery. The lesson inculcated at great cost in the sanatorium is largely lost upon the poor patient, who, after a brief sojourn amid the ideal conditions of a well-conducted institution, is returned to the squalid living conditions which generated his disease. Relapse is almost inevitable, and there is a bitter pathos and tragic irony in the hard situation of the intelligent consumptive who has



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learned how to live in order to keep well, and who by reason of his poverty cannot do so in the wretched homes of the poor in large cities.

It has for several years been a cherished plan of the writer to attempt in some degree the solution of this difficulty in the treatment of the tuberculous poor, by the erection of a type of building in which tuberculous families might live and enjoy at low rentals many of the best features of sanatorium life. This idea has been developed in the sanitary tenement, the practical accomplishment and actual construction of which have now been made possible through the munificence and wise philanthropy of Mrs. William K. Vanderbilt senior, who has devoted 1,000,000 dollars to the purpose of building four such tene-

ments in New York City. Upon a site admirably suited to the purpose, adjoining one of the small city parks, and fronting on two streets, these buildings are now in course of construction. When completed, they will house about 400 families, and will be conducted in connection with the Tuberculosis Clinic of the Presbyterian Hospital of New York. A number of novel architectural features will be introduced. There will be ample courts for air and sunlight, to which access will be had through passage-ways extending from street to street, designed similarly to the *Durchhäuser* of German and Austrian cities. Outside staircases in each of the four corners of the courts will afford separate entrance to each suite of rooms, thus insuring greater privacy and eliminating entirely the dark, ill-ventilated, disease-breeding interior hall and staircase, which are such abominations in the ordinary type of city tenement. Bedrooms and living-rooms are placed in the front of the buildings, and are provided with open-air balconies communicating with the rooms by large windows, hung in three sections, extending from floor to ceiling, thus making the balconies continuous with the floor areas, and encouraging their liberal use for outdoor sleeping and dining. The roofs are to be fitted with open loggias, toilet-rooms, seats, and shrubbery, making them as attractive as possible, and utilizing them to the fullest extent for fresh-air treatment and outdoor life, which can be continued with comfort for nearly the entire year in the almost subtropical climate of New York. Every apartment will be heated from a central hot-water system, and in the kitchens gas-ranges will be installed, provided with exhaust hoods to carry off the odours and vapours of cooking. Tubs and showers with hot-water supply will insure every facility for baths. In the basements will be laundries, drying closets, and a disinfection plant. The construction throughout will be of steel, terra-cotta, and concrete, and will be absolutely fireproof.

It is believed that this type of dwelling will not only be an efficient aid in the actual treatment of cases of incipient tuberculosis, but an even greater benefit will be its influence as a measure of prevention, in extending to the healthy members of the patient's family the protection of a hygienic home. The clinic physician and visiting nurse are well aware of the appalling frequency with which other unsuspected cases of tuberculosis, especially among children, are found in the families of consumptives applying for treatment in our dispensaries. Better living conditions will prevent the development of disease in delicate, anæmic individuals who otherwise would be favourable candidates for tuberculosis. In these sanitary tenements the advantageous, hygienic environment will be supplemented by the watchful supervision of physicians and nurses. As is the case

with every other potent instrumentality in the warfare against tuberculosis, there will accrue many other incidental benefits. The sanitary tenements will encourage cleanliness, temperance, thrift, and all the social virtues which make for a higher plane of living.

A NOTE ON THE DISINFECTION OF SPUTUM AND SPUTUM-FLASKS.

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EVERY well-equipped and scientifically directed sanatorium for the treatment of consumptives is compelled to provide efficient means for the safe, speedy, and economic disposal of sputum and the disinfection of sputum-flasks used by the patients. A short description of the new apparatus which we have recently introduced for the disinfection of sputum and sputum-flasks in the Neue Heilanstalt für Lungenkranke, at Schömberg, near Wildbad, in the Schwarzwald, will, I think, be of interest and practical service to readers of this Journal. Our apparatus has the advantage of being both simple and inexpensive. The sputum is disinfected by means of overheated steam.

The *Sputum Disinfector* consists of a boiler with a sieve. All the sputum of the patients is poured out into the boiler. More compact particles and other solid substances which by accident have got into the sputum remain in the sieve, where they are disinfected by the steam. The steam enters into the boiler through a circular tube, which is provided with little spray-holes above and below. When using the disinfector, not more than three-quarters of the boiler is filled with sputum, after which the boiler is replaced and the steam turned on. The steam, which is pressed downwards, stirs up the sputum, which has previously settled at the bottom of the boiler. After twenty minutes the steam-supply is stopped, and the off-flow opened, thereby carrying the whole contents of the boiler into the drain. Hot and cold water is then turned on, and in passing through the same circular tube effects a thorough cleaning of all parts.

The *Spittoon Disinfector* serves the purpose of disinfecting, cleaning, and thoroughly rinsing out spitting-flasks, etc., used by the patients. The apparatus consists of a box of rectangular shape, opening with a well-fitting lid, resting on four legs, between which two shelves are fixed. The supply of steam and hot and cold water to the bottom