

duration lasting for years. Age, too, is a leading factor in discriminating whether phthisis shall be pneumonic or fibroid in its character. The older the person affected the more likely is it to assume the latter type. Stout people with an abundance of adipose tissue, other things being equal, are fit subjects for pneumonic phthisis; while thin, wiry individuals have a greater tendency to the long lived fibrosis.

Mechanical phthisis, styled also anthracosis, is almost always the result of the habitual inhalation of solid hard particles. In the history of this disease, of which I have seen many instances, the phthysical symptoms are often preceded by chronic naso-pharyngitis. Laryngological examinations, in old cases, display a dry condition of the mucous membrane in the larynx and trachea, with sometimes the foreign matter visible on the surface. Sometimes nature attempts to throw off the foreign incubus by spasmodic attacks of croupous pneumonia, but as the patient on recovery again reverts to the old occupation, each successive attack becomes a more serious drain upon his impaired vitality, and finally consolidation, with attendant emphysema and caseation, finish the story of a shortened life.

Whether mechanical phthisis takes on the form of pneumonic or fibroid disease, depends largely upon the youthfulness, inherent vitality and constitutional bias of the sufferer: but the rule is for it to simulate the fibroid variety.

Miliary tuberculosis is by far the largest division of phthisis pulmonalis. In it the influence of family history is very great. Williams wisely distinguishes between hereditary and family predisposition. His experience gives 12 per cent. as the hereditary influence among the better class of phthysical patients; while family influence, with its greater breadth, gives 48 per cent. This family influence is greater among women than men in the proportion of 57 to 43, owing to the more sedentary life of the former.

Abnormalities of anatomical structure is a very important element in producing predisposition to phthisis, and has been ably discussed by Roberts, Bowditch, Garland and others. Beneke says: "There can be no doubt that an organism with a large heart, capacious arteries, small lungs and large liver, will work

out an entirely different result from one of the same age with small heart, narrow arteries, large lungs and small liver." His conclusion from extended observation being that ordinary phthysical subjects, with caseous pneumonias are distinguished by possessing small hearts, narrow arteries, large lungs, small livers and short alimentary canals.

In speaking of the conditions antecedent to the development of phthisis, Westbrook dwells upon the fact that the residual air in the lungs always prevents the foul air from being entirely expelled, and that any substance accumulating in the alveoli can only be liquified and absorbed, or expelled piecemeal. Should neither of these occur, the substance must remain, and either undergo some form of decomposition, usually caseous, or organize into new tissue. There are also certain circumstances which favor the development of tubercle in the apices which we are somewhat apt to forget, namely, the three factors engaged in the agency of expiration: 1st, the elastic contractility of the lungs; 2nd, the resistance of the chest walls; and 3rd, the upward pressure of the diaphragm. As Westbrook well puts it, "Only one of these, the elasticity of the lungs, acts upon the extreme apex;" while the power of the others gradually extending downwards, reaches a maximum at the base. As a consequence, the ordinary conditions, even in health, are not favorable to the full ventilation of the apex. In addition to this, the force of gravity tends to drain the fluids downwards, leaving dry abnormal products to harden; and pathological anatomists well know how dry and anemic the apices are usually found to be.

We are indebted to Frank Donaldson for an able article treating upon the influences of city life upon consumptives, meaning those who inherit a predisposition to phthisis. The comparative unhealthfulness of cities over rural districts he proves by statistics: In Amsterdam there are 171 deaths to 100 births; in Berlin 131 deaths to 100 births; and in London 124 deaths to 100 births. In London annually the deaths exceed the births by 10,000. As a consequence London would decline rapidly in population if it were not for the constant influx of strangers. In England the proportion of the death rate from consumption is 25 per