

ing the particular seat of attack, or not, it is very probable that one reason why the lower lobes throw off the catarrhal products more easily than the apices is that the moisture contained in the catarrhal secretion of the apices gravitates to the base, leaving that in the latter dry and unyielding, while that of the base possesses greater fluidity, and is therefore more readily expectorated. Then, again, it is evident, if other things are equal, that catarrhal deposits are thrown off more easily in localities where the lungs are active than where they are quiet, and it is well known that the apices have less respiratory motion than any other portion of the lungs, hence this weakness also contributes to the danger of the retention of infiltrated products, which become nuclei for still further accumulation. It thus appears why it is that croupous pneumonia, so seldom, if ever, terminates in phthisis, and, why, even in catarrhal pneumonia, the infiltrated products at the base are thrown out, and those in the apices are left behind, which makes the latter so vulnerable to phthisis in this disease.

I think, if what has been said is true, it follows that a catarrhal infiltration in an apex, in the vast majority of cases, if not in all of them, comes to stay, *i. e.*, it is a chronic affection, and tends towards disintegration and excavation from the very start. In other words, such a case is not one that belongs to the domain of catarrhal pneumonia, but is one of catarrhal phthisis from the very beginning. If, therefore, an infiltration, or even a prolonged expiration, occur in an apex without involving any other portion of the lung, we are undoubtedly justified in calling it a case of incipient pulmonary consumption, of the catarrhal form.

In taking up the thread of our argument, when digressing to discuss the comparative pathology of croupous and catarrhal pneumonia and their relations to catarrhal phthisis, it must be remembered that we had not traced the pathological process of catarrhal phthisis any further than the stage of accumulation and pressure of catarrhal elements upon the alveolar walls and interlobular septa. The infiltration very seldom involves a whole lung, or a whole lobe of a lung, but is generally scattered throughout an apex, and affects isolated groups of alveoli, or of lobuli. Thus far the process is principally limited to the alveolar walls, their epithelium and their blood vessels, and the interlobular septa, but the continued accumulation of the catarrhal secretions will, through their pressure on the surrounding circulation, cut off their blood supply, and hence become circumscribed foreign masses, which undergo a slow process of cheesy degeneration, soften from the centre to the periphery, are expelled, and leave behind cavities, large or small, in proportion to the amount of tissue destruction.

It is during this stage of excavation that the true tubercle is generated. Probably, in virtue of a specific element derived from the decaying catarrhal masses, a new poison originates here,

which is chiefly absorbed by the lymphatics in the surroundings of the affected parts. These vessels carry the poison along their ascending courses as they arise in the alveolar wall, and twine around the bronchioles and blood vessels; and it is here, in the beginnings and in the channels of the lymphatics, that this poison incites new nodular growths, which are genuine tubercles, but differ from those yellow aggregates, or nodules, which are found in catarrhal phthisis, both in genesis and structure. They are evolved from interstitial connective or lymphatic tissue, and are growths, or a hyperplasia, and not mere accretions, like the so-called yellow tubercles. These nodular growths first manifest their appearance in the alveolar wall, the surface of which they force into the cavity. By and by the continuity of the alveolar wall breaks, and the newly-formed interstitial connective tissue cells are forced into the cavity of the air cells. A number of nodules following such a course will very soon overcrowd and over-distend the vesicles, and, very naturally, those infiltrated areas will be cut off from their blood supply and disintegrate, in the same way as those of catarrhal infiltration. This is the stage in which the tubercular growth is so liable to be mistaken for the catarrhal infiltration, and *vice versa*. Both forms occupy the alveolar cavity, but on minute examination it will be found that one is composed of interstitial connective tissue growth, and the other chiefly of catarrhal products. Frequently, however, the two processes are so intermixed that their respective products are indistinguishable. Thus, then, after catarrhal infiltration has once brought on cavitation, and reinforces itself by tubercular infiltration and cavitation, it is evident that the destruction of lung tissue is very materially accelerated; and this explains why it is that a patient enjoys almost comparative immunity from the disease as long as the continuity of the lung is not broken, and why the disease advances more rapidly after this period has been reached.

This, then, is the tubercular form of pulmonary consumption, and differs from the catarrhal form, inasmuch as it usually is secondary to it. It is decidedly an affection of the lymphatic or connective tissue, while the catarrhal form is an affection principally of the epithelium of the alveoli.

Fibrous or interstitial phthisis, as it is sometimes called, differs, both in course and in duration, from the catarrhal and tubercular forms. It is essentially a hyperplasia of the fibrous connective tissue, or, in other words, an affection of the framework of the lung and the pleura. It is slow in its progress, and is usually preceded by bronchitis and bronchiectasy. It is thus often induced or preceded by a catarrhal inflammation of the bronchial tubes. Tubercles also form an integral element in fibrous phthisis, but the slowness of the disintegrating process allows time sufficient for its products to become better organized, and, hence, there is less danger of caseation and destruction of tissue.