

ILLUSTRATIONS OF TUBERCLE.

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[The term tubercle, though synonymous with "nodule," has generally come to imply a certain form of deposit occurring in a peculiarly fatal diathesis. The importance of this need not be dwelt upon here.]

That constitutional tendency which leads to the deposit of tubercle, and is to be found wherever the necessary stimuli of life, and, above all, pure atmospheric air, are deficient, predisposes to other diseases as well; it assists the approach of the enemy, and actually places the fortress in his power before a formal assault is made. Though we no longer believe in the elements of Thales, we may, without a great stretch of the laws of the natural sciences, admit that air is the chief element of health or disease, according as it is supplied to the lungs in its unadulterated condition of four-fifths nitrogen and one fifth oxygen, or as it carries diffused through it carbonic acid gas, carbonetted hydrogen, sulphuretted hydrogen, the effluvia of cesspools and drains, the poison of influenza or cholera, the emanations of the variolous or typhous patient.

Allow me briefly to advert to the origin of tubercle. We possess sufficient evidence to shew that it is derived from the blood: that it transudes from the capillary vessels of the part in which we find it: and that, after having been deposited it is liable to undergo certain further changes. On a close examination of incipient tubercular deposit, we may always note that there is congestion in the tissues immediately surrounding it. In the pia mater of the Sylvian fissure, we see an increased redness, in which a few vessels are more prominent than usual; in the pulmonary parenchyma we may, especially by the use of the microscope, discover the engorgement of the interlobular capillaries investing the air vesicle into which the tubercle is being secreted; in the mucous membranes of the intestines we see the exquisite arborescent arrangement of the congested vessels, tending from the mesentric attachment to the point where we observe the deposit shining through the mucous surface from the submucous tissue, in which it has collected.

The first elimination of the morbid products acts like a magnetic point of attraction, and generally serves as a centre round which the deposit progressively enlarges by eccentric deposition. The amount of vascular action accompanying the elimination, varies in different individuals; in some, there is scarcely a perceptible increase in the sanguineous current; in others, we cannot deny the presence of acute inflammation, shown both by the congested state of the blood-vessels, and by the presence of plastic exudation and exudation corpuscles. In ordinary inflammatory conditions, we may actually observe the part taken by the capillary vessels in the process of transudation.

We see the inflammatory product immediately after its passage through the vascular membrane, coating the vessels; and, if my limited observations justify the statement, we may see the same matter within the vessels adhering to the coats previous to its discharge. Whether it be so or not, whether we may be enabled to observe the transition of the contents of the vessels into the surrounding parts or not, it is evident that we ought not to be satisfied with ascertaining the fact of the exudation as the primary change. We are driven to take one step more, before we gain the fountain head of the exudation; we therefore look to the constitution of the blood itself in tubercular disease, in order to ascertain whether any deficiency in the normal components, any variation in their relative amount, any new products, are to be met with, which may explain the source of the extravascular deposit. All observers, who have brought either the microscope or chemical analysis to bear on this subject, are agreed that there is an alteration in the blood indicating want of vigour and tone. There is a general increase in the fluid parts, the water and albuminous constituents; while the solids are diminished, the