

Lectures on the Nursing of Lung Diseases.

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CHAPTER I.

IN order to explain the nursing which is required for patients suffering from diseases of the Lungs, a short description of the breathing tract in a condition of health, and the work which its several parts perform, will not be out of place.

From the back of the mouth a tube passes down into the chest, in front of the gullet, or œsophagus, which, in popular language, is termed the windpipe. The upper part of the windpipe consists of a small box formed of bones in front and at the sides, and behind of strong ligaments, to which the name of the *Larynx* is given. This contains the vocal cords, by the vibration of which the voice is produced. The box is more prominent in a man's throat than in that of a woman, the projection being known as the *pomum Adami*, or Adam's apple, in consequence of an ancient legend that a piece of the apple, which Adam was hurriedly swallowing, stuck fast in his throat. As a matter of anatomy, the story lacks confirmation; because, if the fruit lodged in the larynx, our first father must have been speedily choked. But legends do not bear anatomical dissection.

At the bottom of the larynx, the breathing tube is composed of rings of cartilage, and is known as the *trachea*. This passes down into the chest and there divides into two parts, one passing to the right, and the other into the left lung. In these organs, each tube divides again and again, each branch sub-dividing in its turn as it passes through the substance of the lung, growing smaller and smaller in its calibre in the process; until at length every one of the hundreds of minute tubes ends in a tiny cul-de-sac, or "air cell," the walls of which are of extreme thinness, with tiny blood vessels around them, and the whole being supported and bound together by the soft elastic tissue of the lung, which enables the organ to expand or contract as the air enters or leaves the chest. The air-cell then may be regarded as the essential part of the lung; and it must be observed that the blood, in the tiny capillaries has only the thinnest possible wall between itself and the air in the

"cell"; so that there is no difficulty in the oxygen from the inspired air being sucked up by the blood which has been loaded with carbonic acid during its passage through the body, nor in the carbonic acid passing out from the blood to the air cell, and being then expired. In fact, the most important process in the whole body is carried on in these tiny cells; the blood being purified by the exchange of life-giving oxygen for poisonous carbonic acid, whilst, at the same time, by the chemical change which takes place it is heated and thus is enabled to convey renewed warmth to every part of the body.

This brief explanation is sufficient to show that if the lungs do not act efficiently, and the blood is not therefore properly oxygenated, the poisonous carbonic acid will remain in the blood. The circulation then becomes sluggish, the brain becomes overloaded and inactive, the nervous system ceases to perform its work, and death follows. If the obstruction in the lungs is more complete, the condition known as asphyxia is produced, and death rapidly ensues. The essential needs then for pulmonary action are the free ingress and free egress of pure air into and out of the air vesicles. The whole of the breathing tract from the mouth downwards must be regarded as part of the pulmonary system, and it will be well, therefore, to commence by considering the diseases from which the upper part may suffer.

To commence with the pharynx or back of the mouth, we find that there are placed the tonsils, a small gland on each side, at the back of the tongue. These glands may be regarded as danger signals, placed there by Nature to denote the presence of dangerous disease in the air, which, by its entrance might seriously injure the lungs. The tonsils, in fact, possess the most marked antipathy to impure or poisoned air. Many persons suffer from what is termed sore throat—that is to say, from congestion of the tonsils—when they are exposed even to damp air. Few people escape such a symptom—that is to say, such a warning, if they are only wise enough to take it—if exposed to sewer gas or objectionable odours arising from the presence of decaying matter, or dangerous bacteria, in the air. We have termed the tonsillar congestion a danger signal because the admission of such disease-laden air to the lungs may be followed by various diseases.

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