

OUR PRIZE COMPETITION.

WHAT ARE THE PRINCIPAL DISEASES OF THE RESPIRATORY SYSTEM? WHAT ARE THE EFFECTS OF RESPIRATORY OBSTRUCTION? WHAT EMERGENCIES MAY SUDDENLY ARISE?

We have pleasure in awarding the prize this week to Miss S. D. Rossiter, Royal Naval Hospital, Haslar.

PRIZE PAPER.

The diseases which attack and thereby impede or obstruct the mechanism of respiration may be classed according to the particular structure of respiratory system involved. Roughly the system consists of nose, pharynx, larynx, trachea, bronchi and lungs, all of which depend upon the action of the intercostal muscles, these being controlled from nerve centre in brain.

The commonest *Naso-Pharyngeal* affections are: (1) catarrh; (2) adenoids and enlarged tonsils.

In condition (1) infection of the air-cells by the *Bacillus Catarrhalis* has taken place, resulting in inflammation and hyper-secretion of mucus by the mucous membrane.

In condition (2) you have masses of adenoid tissue obstructing the nasal air-way. *Eupnoea* or mouth-breathing arises; this is dangerous, as the warming and filtering process which normally takes place in the nose is obviated.

Laryngeal disorders may be divided into (1) acute, (2) chronic.

1. *Simple acute Laryngitis* may arise from chill or fatigue, and temporary loss of voice occurs; it also sometimes precedes the rash of measles, and is believed by some to be caused by the presence of Koplik's spots in the larynx.

Invasion of the larynx by diphtheritic membrane is the most dangerous acute condition, as complete obstruction of the respiratory passage may take place before the symptoms can be relieved by serum treatment; for this immediate tracheotomy is performed.

Acute Oedema of the Larynx is another highly dangerous condition, and sometimes occurs after the administration of a general anaesthetic, and failing relief from steam inhalation, tracheotomy may have to be performed.

2. *Chronic Laryngitis* may be due to (1) tubercle, (2) syphilis, (3) malignant growth or from long-standing voice strain. In the third condition, laryngotomy or tracheotomy are resorted to.

The Trachea and Bronchi are subject to inflammation from varying causes, cold and exposure to damp and fogs being the commonest

causes; when it extends to the bronchioles it assumes a more serious aspect, especially in the aged, for it entails a great strain upon the heart.

Bronchiectatic Cavities also follow bronchitis as a result of excessive dilation of bronchioles with shrinkage of lung tissue; these cavities are incapable of evacuating the mucous secretion, which becomes purulent, and the chronic condition of Bronchiectasis follows.

The principal diseases involving the lungs are—Broncho-Pneumonia, Lobar-Pneumonia and Hypostatic Pneumonia.

Broncho-Pneumonia frequently complicates the infectious diseases, particularly measles and whooping cough. The inflammatory process attacks the lung in small patches, these tending to spread from lobule to lobule, and by the slowness of the resolution incurring great heart strain.

Lobar-Pneumonia is due to infection of one or more lobes of the lung by pneumo-cocci. It is marked by three stages:—1. Congestion; 2. Consolidation; 3. Resolution.

The obstruction to complete aeration of the blood causes an excess of carbonic acid gas, which over-stimulates the respiratory nerve centre and results in *Hypernoea* or rapid respiration; to avoid the subsequent heart strain the patient must be kept at absolute rest.

Empyema, or pus in the pleural cavity, may follow any of the lung diseases, and for this, resection of rib is performed to allow of free drainage of the cavity from without.

Hæmoptysis from a tubercular lesion is unfortunately a common emergency, and may occur either in the very early or later stages of Phthisis.

Hypostatic-Pneumonia arises from stasis of the lung tissue, and must be guarded against in any tedious illness when change of position is not permissible.

Septic Pneumonia from absorption of toxins may follow any toxic state, and particularly of the throat and nose, e.g., retro-pharyngeal abscess and septic tonsillitis.

Surgical Emphysema, or air in the cellular tissues following tracheotomy, sometimes occurs, and usually ends fatally.

Pulmonary embolism blocking the pulmonary artery is another usually fatal respiratory obstruction.

HONOURABLE MENTION.

The following competitors receive honourable mention:—Miss E. C. Osborne, Miss Jean M. Jepson, Miss Catharine James, Miss P. Thompson, Miss Jane Branson.

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