

## BRONCHO-PULMONARY TREE AND SEGMENTS OF THE LUNGS OF BUFFALO CALVES

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### ABSTRACT

The study revealed that the main bronchi emanating from trachea and principal bronchus on the right side gave off nineteen branches while on the left, these were fifteen in number. The branching of pulmonary arteries and veins followed the same pattern as that of the bronchial tree. However, crossing over of fine arteries and veins from one segment to other was evident which was absent in the bronchial tree.

**Key words:** Broncho-pulmonary segments, bronchial tree, pulmonary veins, pulmonary artery

The anatomy of the bronchial tree has been described by Aeby (1880) but till-date, the classification of the broncho-pulmonary segments is not clear. The accurate information on this aspect will be of great help to the pathologists, surgeons and physicians aiding in diagnosis and treatment of respiratory disorders. Thus the present work was undertaken to study the broncho-pulmonary tree and the segments of lungs in the buffalo calves.

### MATERIALS AND METHODS

The study was conducted on 20 buffalo calves which had been used by the students for myology practicals. Piecemeal removal of the lung parenchyma starting from the apical bronchus was done in 5 out of 20 lungs, so as to expose the branching pattern of this bronchus. The same technique was applied for other main branches emanating from the principal bronchus. For the purpose of clarity, at places minute branches were severed. The margins of the lungs were left undissected, so that the bronchi remain fixed. After having dissected the bronchial tree, the line diagram was drawn.

In five pairs of lungs, saturated solution of lead oxide prepared in a mixture of soap solution

and water was injected into the trachea. Immediately after the filling, the lungs were radiographed in dorso-ventral position. Similarly, five pairs of lungs were injected with the contrast material for studying the pattern of pulmonary arteries and so also the pulmonary veins. All these lungs, injected with contrast material and being radiographed, were again dissected after removal of the contrast material through excessive washing with water.

### RESULTS AND DISCUSSION

**Right lung:** The numbers or alphabets given hereafter are marked on the line diagrams viz. Figs 1-5). The trachea gives off the tracheal bronchus at the level of 3<sup>rd</sup> or 4<sup>th</sup> rib which enters the cranial lobe of the right lung. The tracheal bronchus just after its origin gives out a branch from its dorsal surface. This branch (RCr-1) is directed dorsally and supplies the central and the dorsal part of the cranial lobe. The main branch (RCr-2) then continues cranially and supplies the cranial part of the cranial lobe. Just close to the origin of the tracheal bronchus another branch is given out which is directed caudally. At times this branch and the tracheal bronchus have a common opening into the trachea. This caudally directed branch further gives a branch that is directed caudo-ventrally (RCr-3) and the main

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