

Genus- Dictyocaulus

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Dictyocaulus : Morphology

- The adult worms are slender, medium sized about up to 8 cm long.
- Females are about one third longer than males.
- They have a whitish to grayish color.
- The body covered with a cuticle, which is flexible but rather tough.
- The worms have a tubular digestive system with two openings.

- The gut of worm is visible from outside as a dark line.
- They also have a nervous system but no excretory organs and no circulatory system, i.e. neither a heart nor blood vessels.
- The female ovaries are large and the uteri open at the posterior end of the body.
- Males have a copulatory bursa with two short and thick spicules for attaching to the female during copulation.



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Dictyocaulus viviparus

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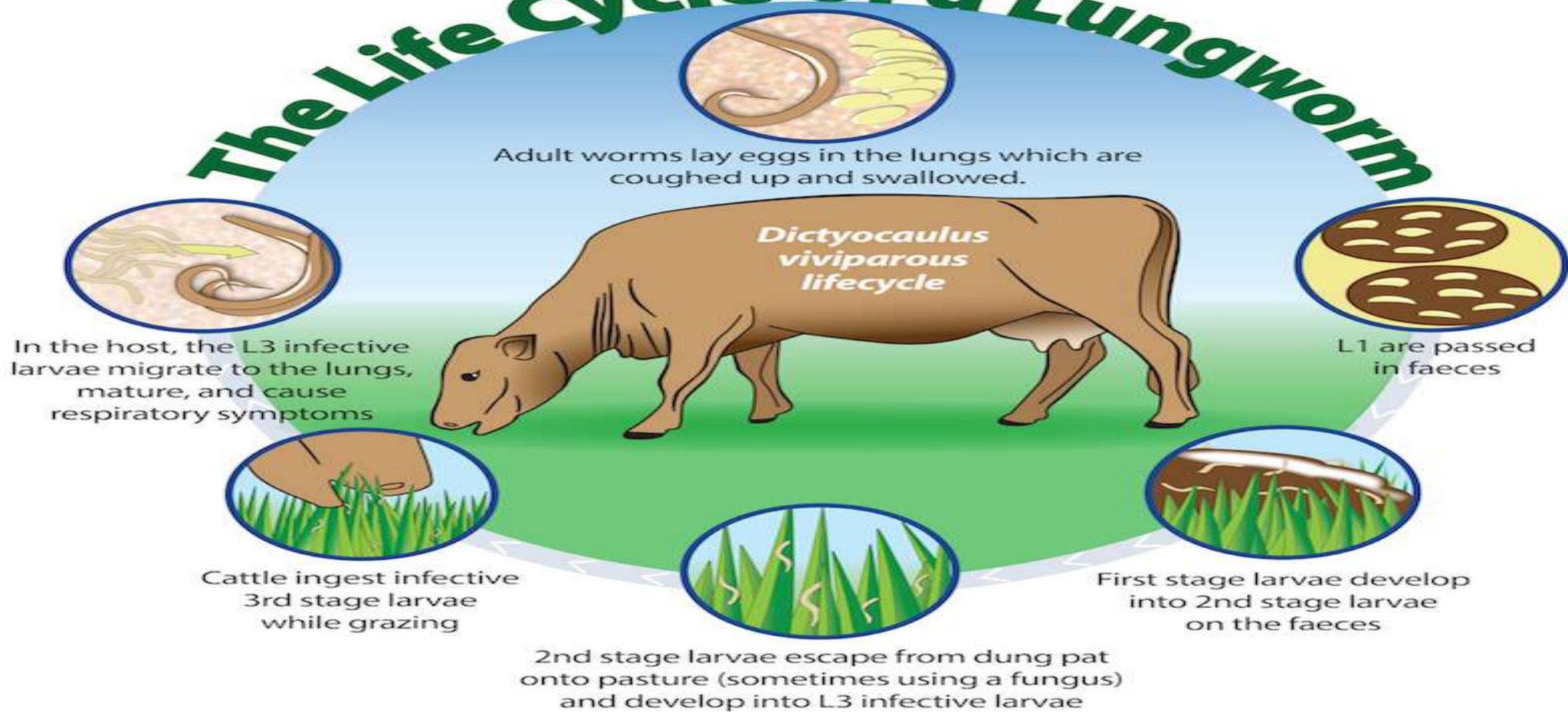
Dictyocaulus viviparus

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Dictyocaulus : Life cycle

- They have a direct life cycle.
- Adult worms reside in the bronchial tree of lungs of the infected host, lay eggs into the bronchi.
- These eggs are coughed up and subsequently swallowed by the infected host.
- The eggs hatch into L1 larvae in the gastrointestinal tract of the infected host.
- These L1 larvae are shed in the feces of infected host, which become infective L3 larvae after two moulting. These larvae also transported through the agency of Pilobolus fungi.
- At the time of grazing host ingest the infective L3 larvae.
- These larvae go through the intestinal system and penetrate the intestinal wall, reach the mesenteric lymph nodes, where they mature into L4 stage larvae.
- These L4 larvae reach the lungs via blood circulation, where they become adults.

The Life Cycle of a Lungworm



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Dictyocaulus life cycle

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LUNGWORM LIFE CYCLE



Dictyocaulus life cycle

Dictyocaulus :Pathogenesis

- They are one of the most harmful nematode for horses and ruminants mainly responsible of verminous bronchitis .
- Young animals are more susceptible to the infections, particularly during their first grazing season.
- Larvae in the lungs irritate the lining of the airways, resulting into excess mucus production.
- The heavy worm load and excess mucus congest and even obstruct the airways.
- Damaged cells of lungs reduces the respiratory capacity. Secondary infections with bacteria or viruses can also be occur.
- In case of massive infections, excessive eggs or larvae may cause pulmonary consolidation, i.e. filling of the alveolar space with foreign materials instead of air.
- Typical signs are heavy coughing, difficult breathing and nasal discharge. Affected animals lose appetite and weight. Severe infections can also cause pneumonia, emphysema, and pulmonary oedema



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Dictyocaulus infection in lung

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Dictyocaulus in lungs

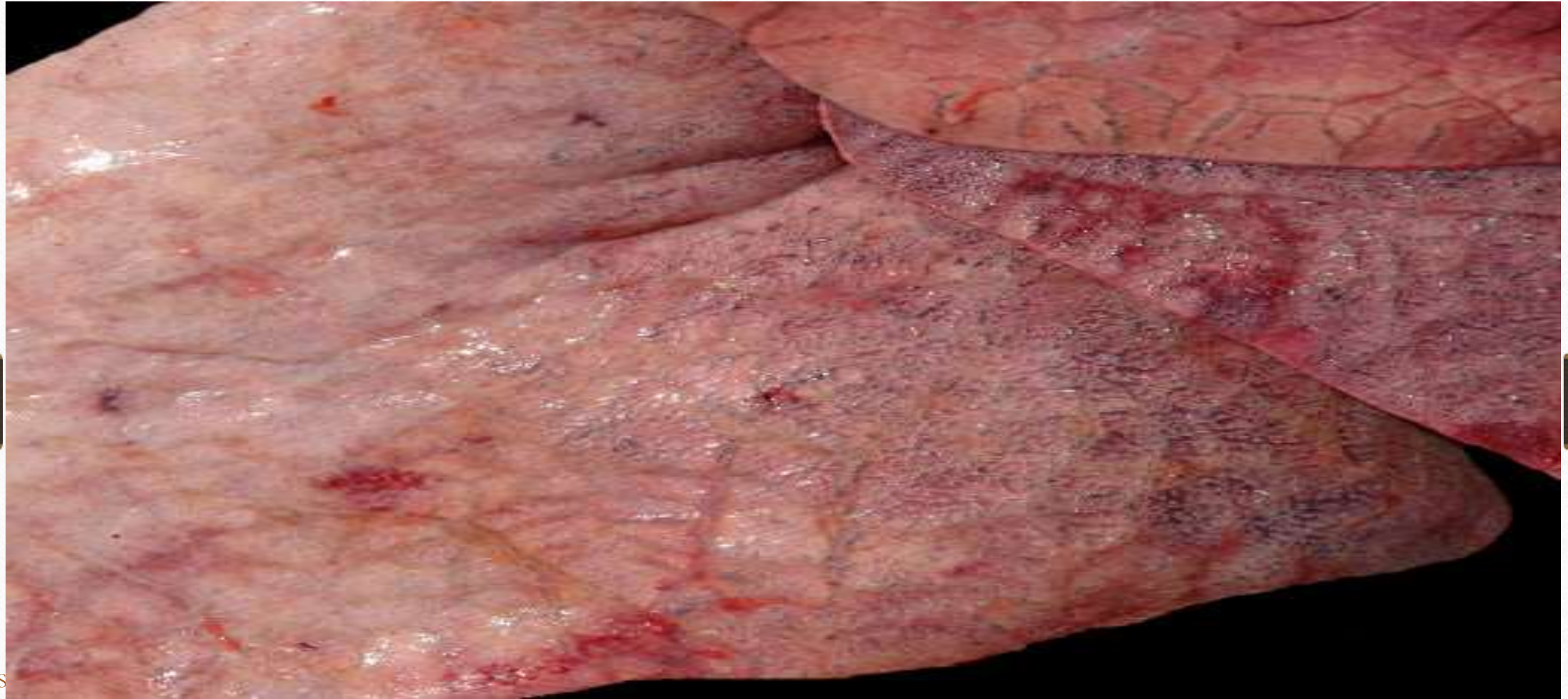
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Dictyocaulus in lungs

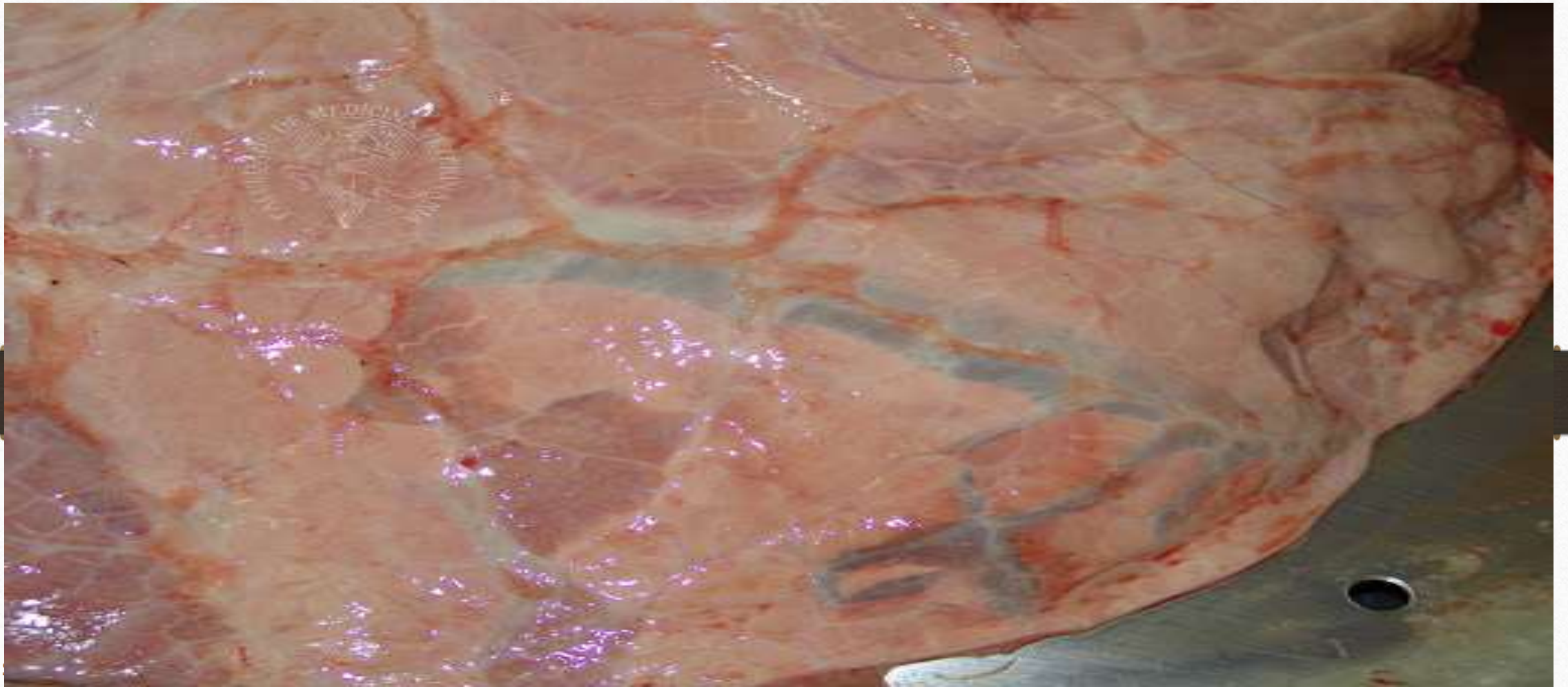
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Pulmonary oedema & emphysema

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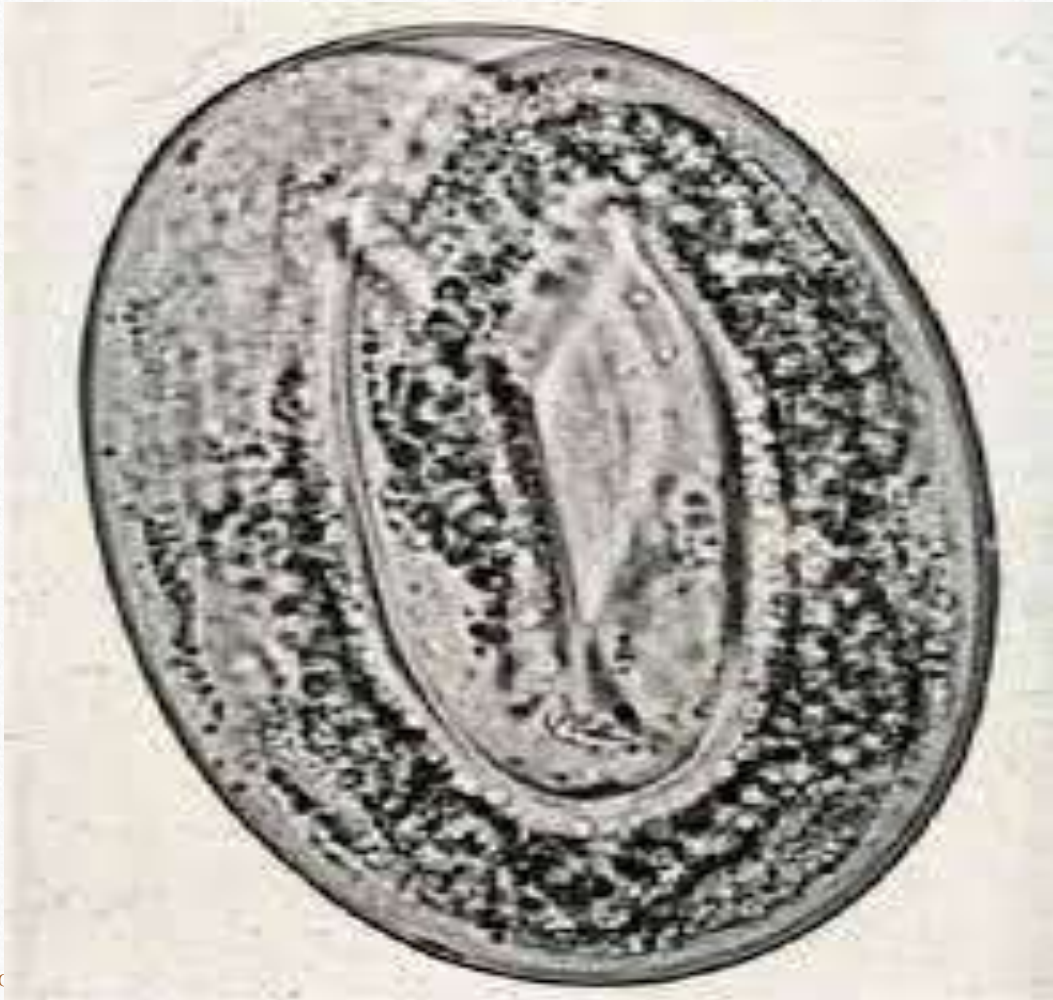
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Pulmonary oedema in sheep

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Dictyocaulus : Diagnosis

- By observation of clinical signs and symptoms .
 - Diagnosis can also be confirmed by detection of larvae in the feces.
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Eggs of lung worm

Source- Google

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Dictyocaulus : Prevention & control

- Rotational grazing with a change interval of 4 days significantly reduces pasture contamination.
- Alternate grazing with sheep and/or horses may be considered.
- Keeping the pastures as dry as possible and away from excessively humid atmosphere, this can reduce the exposure of livestock to infective larvae
- Strict hygiene and sanitation should be maintained.