

Etiology of NonInfectious Interstitial Pneumonias

■ Inhaled Toxicants

- Smoke – thermal and chemical injury
- Organic dusts (hypersensitivity reaction)
- Manure “pit” gases – H_2S , NH_3
- NO_2 from silos

■ Ingested Toxicants

- Plant toxins

■ Feed lot interstitial pneumonia – cause unknown

Hypersensitivity Pneumonia (extrinsic allergic alveolitis)

- Sporadic disease
- “Farmer’s lung” in humans
- Affects housed adult dairy cows
- Type III hypersensitivity to inhaled organic antigens
- Fungal spores of *Saccharopolyspora rectivirgula* (*Microspolyspora faeni*) in moldy hay

Hypersensitivity Pneumonia (extrinsic allergic alveolitis)

- Disease - acute or chronic
- Clinical signs - dry cough, dyspnea, fever
- Gross pathology:
 - Mild – multifocal subpleural granulomas
 - Severe - AV to diffuse consolidation, emphysema
- Histopathology – proliferation alveolar epithelial cells, lymphocytic infiltrate, fibrosis

Parasitic Hypersensitivity

- Parasitic infection
 - *Dictyocaulus viviparus* – “reinfection syndrome”
 - *Ascaris suis*????
 - *D. filariae* – sheep - levamisole treatment

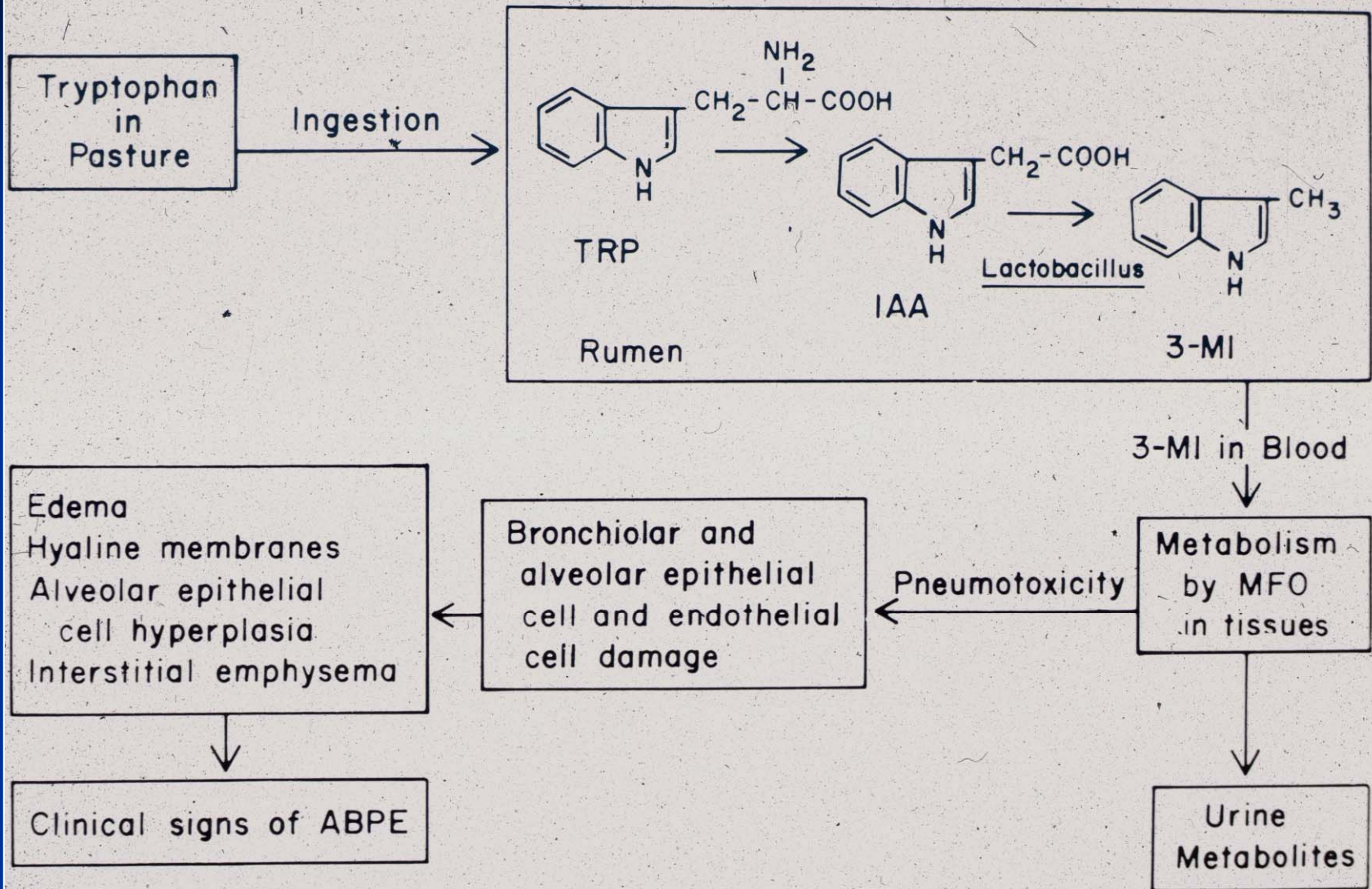
Etiology of Interstitial Pneumonias: Ingested Toxicants

- L tryptophan, 3-methylindole
- 4-ipomeanol, moldy sweet potatoes –
Fusarium solani – outbreaks reported in New
Zealand
- Purple mint -*Perilla frutescens* ketone
- Stinkwood – *Zieria arborescens*
- Rapeseed, kale, canola reshoots
(glucoscintilates)– *Brassica* spp.

Acute Bovine Pulmonary Edema/ Emphysema (ABPE) – Fog Fever

■ Occurrence

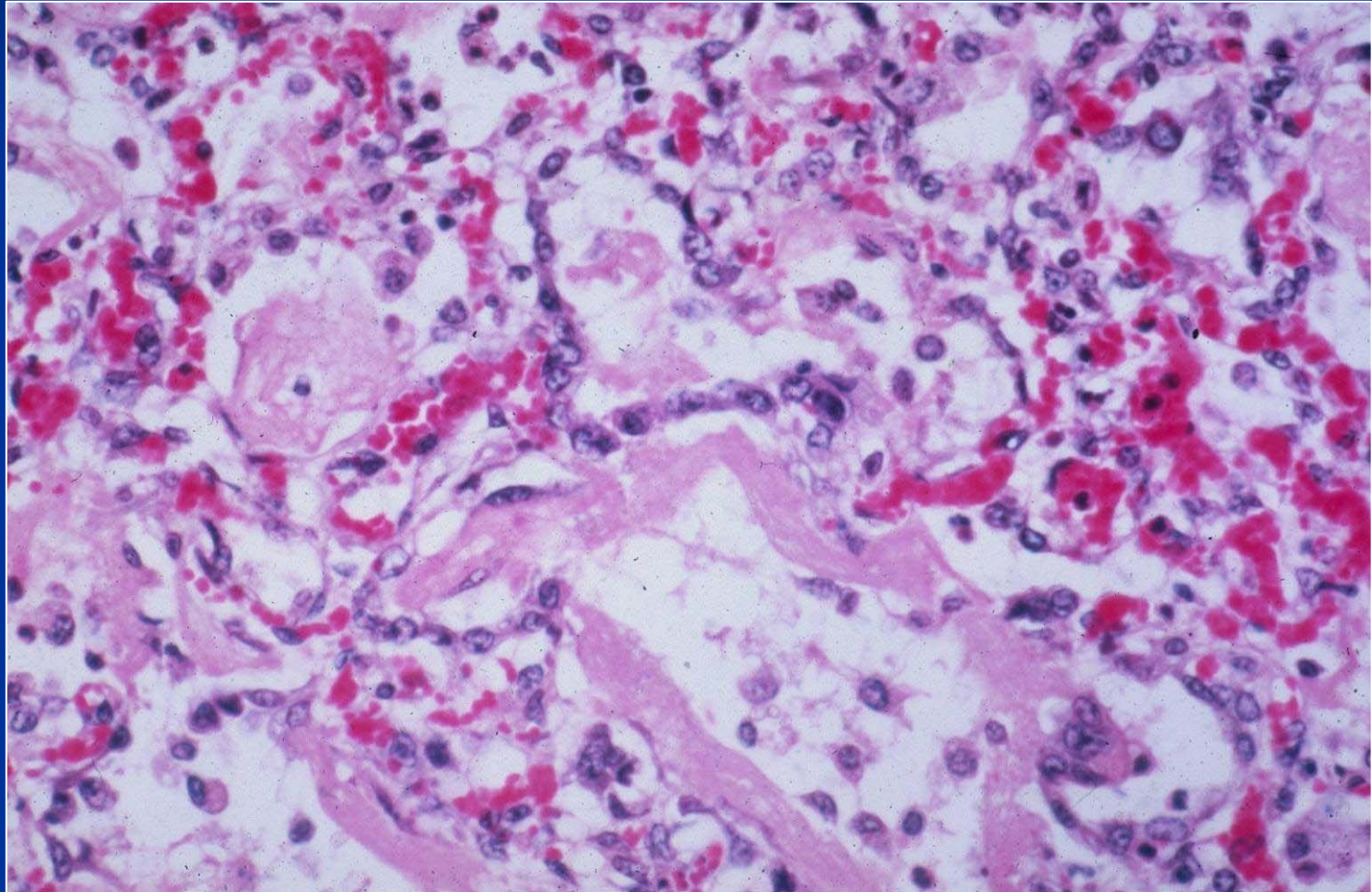
- UK, Europe, USA, Australia
- Fall
- Adult cattle >2 years old
- Abrupt change to lush pasture (within 2 wks)
- In Australia, where autumn growth largely grass rather than clover
- Goats/sheep are susceptible experimentally



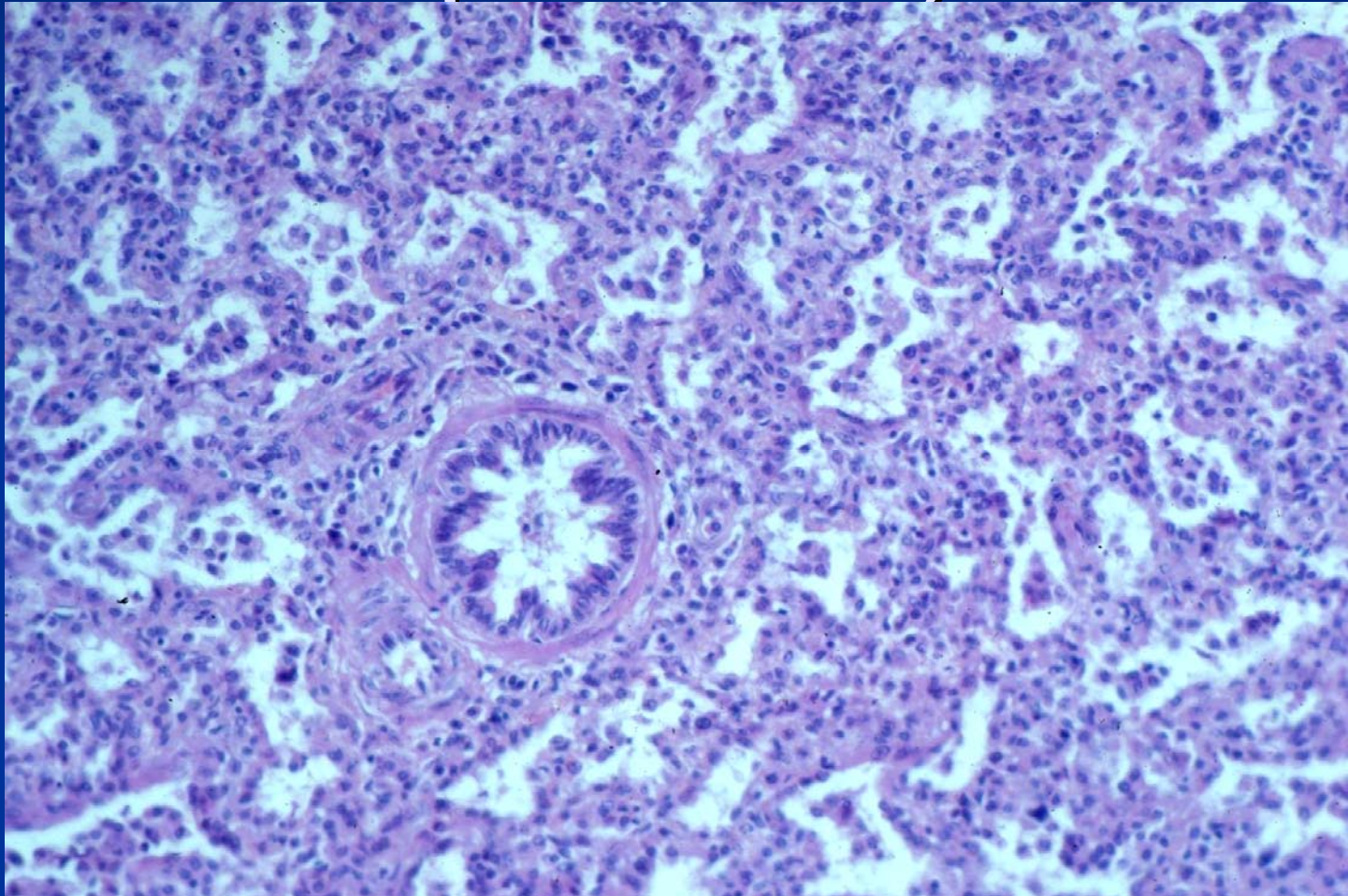
Acute Bovine Pulmonary Edema/ Emphysema (ABPE) – Fog Fever

- Gross lesion
 - Lungs do not collapse, heavy, wet, emphysema
- Histopathology: interstitial pneumonia
 - Hyaline membranes
 - Prominent type II cell hyperplasia
- Sequella
 - Interstitial fibrosis
 - May see bronchiolitis obliterans

Acute to Subacute Interstitial Pneumonia



Subacute to Chronic Interstitial Pneumonia (“proliferative” pneumonia)



Acute to Subacute Interstitial Pneumonia (type II cell proliferation)

