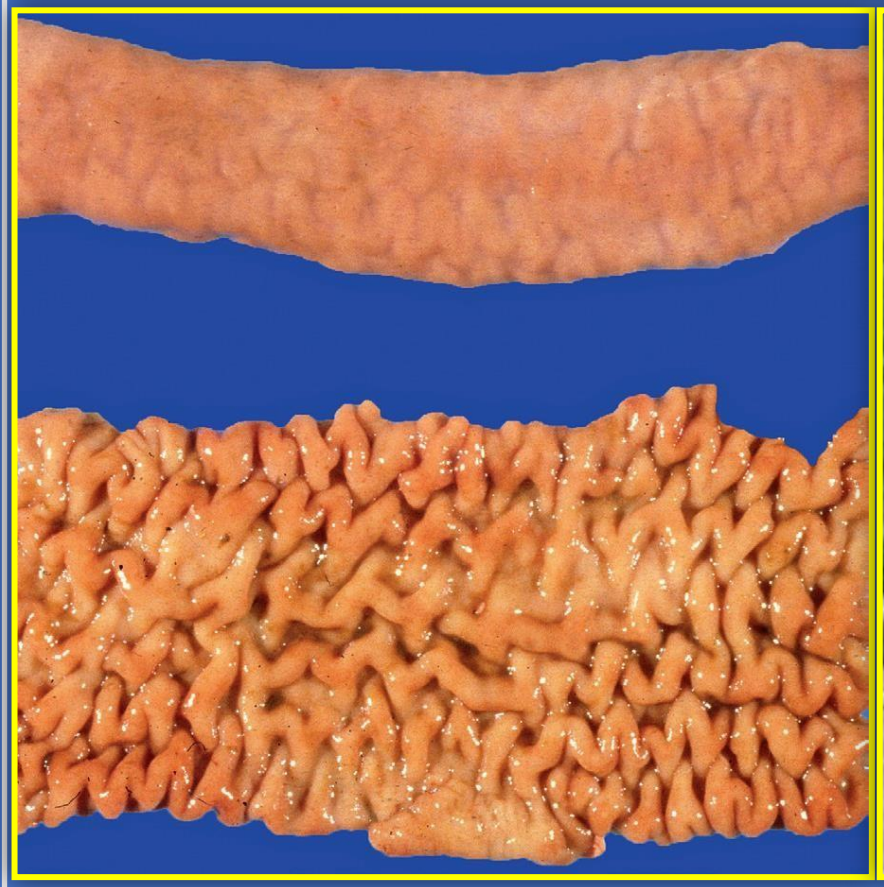
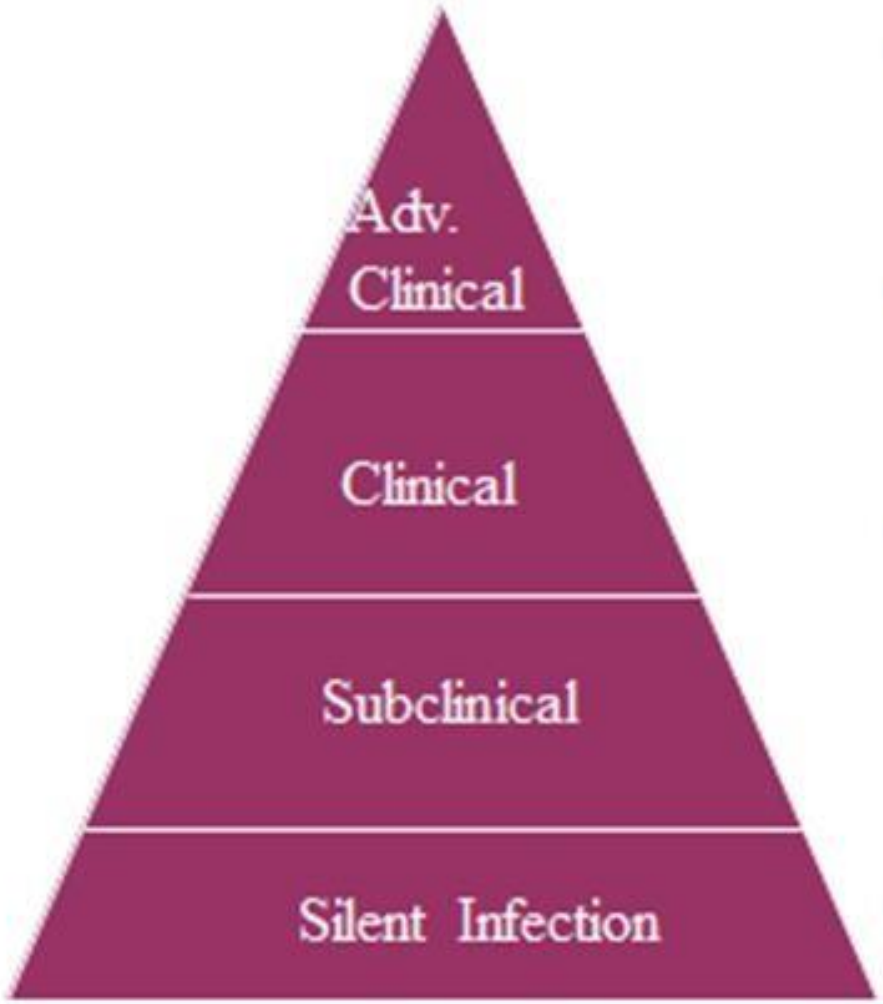
Paratuberculosis (Johne's disease)

Paratuberculosis (Johne's disease)



Johne's Disease Stages of Infection



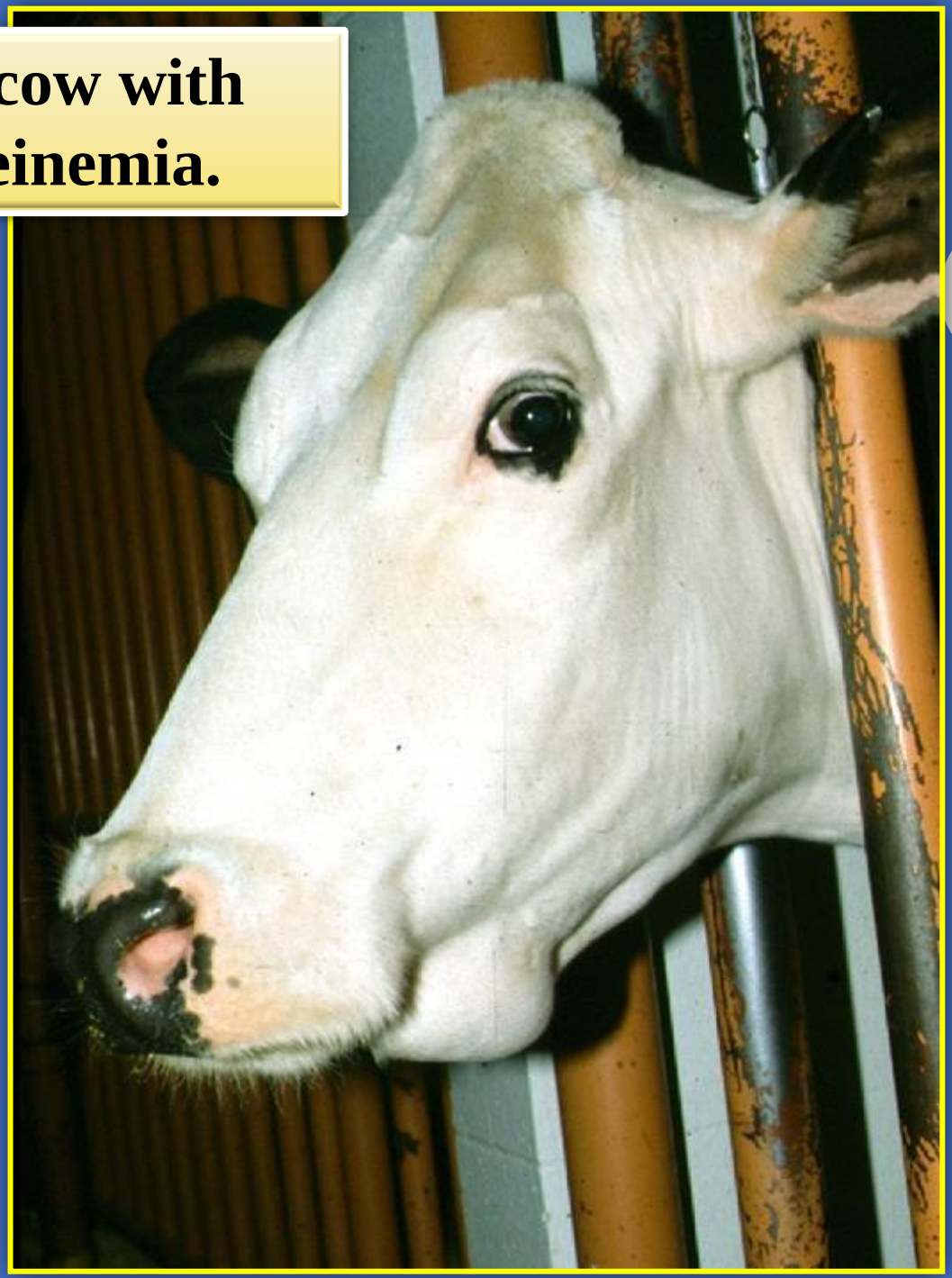
- Advanced clinical animals- severe emaciation, diarrhea, bottle jaw, wasting
- Clinical-Weight loss, diarrhea, less milk production but good appetite
- Subclinical-Infected animals have MAP in their bodies but no evidence of disease. They are shedding bacteria and contaminating the farm
- Silent-No evidence of disease, no shedding of bacteria.

The main signs of Johne's disease in cattle are progressive weight loss and chronic diarrhoea

A Holstein cow with clinical paratuberculosis exhibiting marked weight loss.

Although animals will usually eat until the day they die, they continuously lose weight and waste away.

Submandibular edema (bottle jaw) in a cow with clinical paratuberculosis and hypoproteinemia.

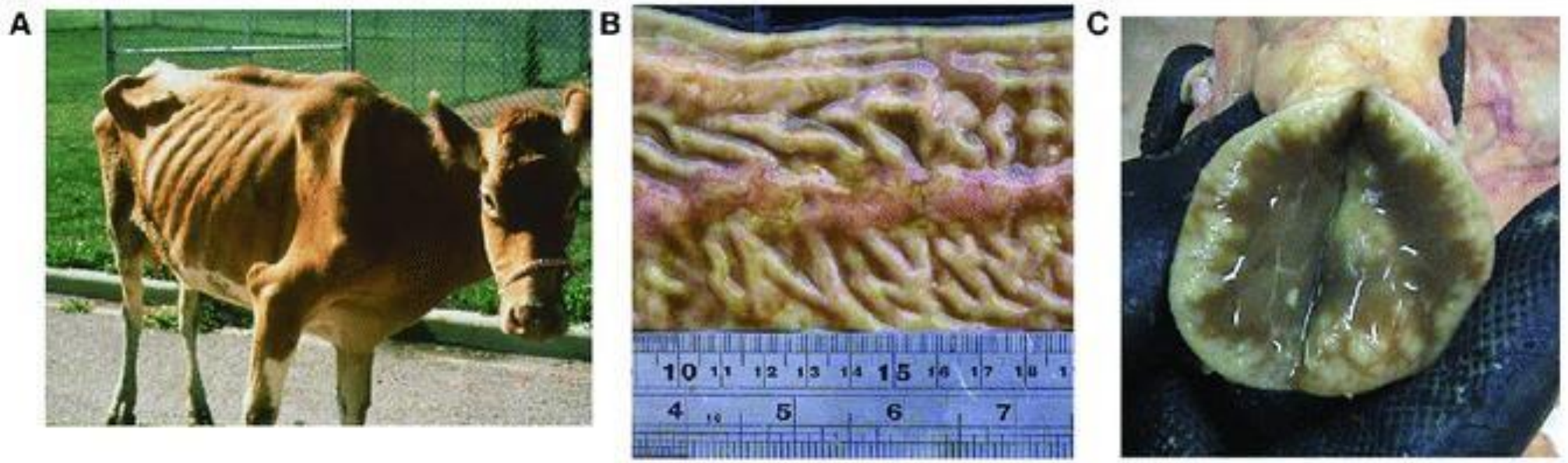


Cow's with Johne's disease (paratuberculosis) generally suffer with profuse watery diarrhea which is refractory to treatment.

Picture E is an endoscopic view of normal cow intestine.

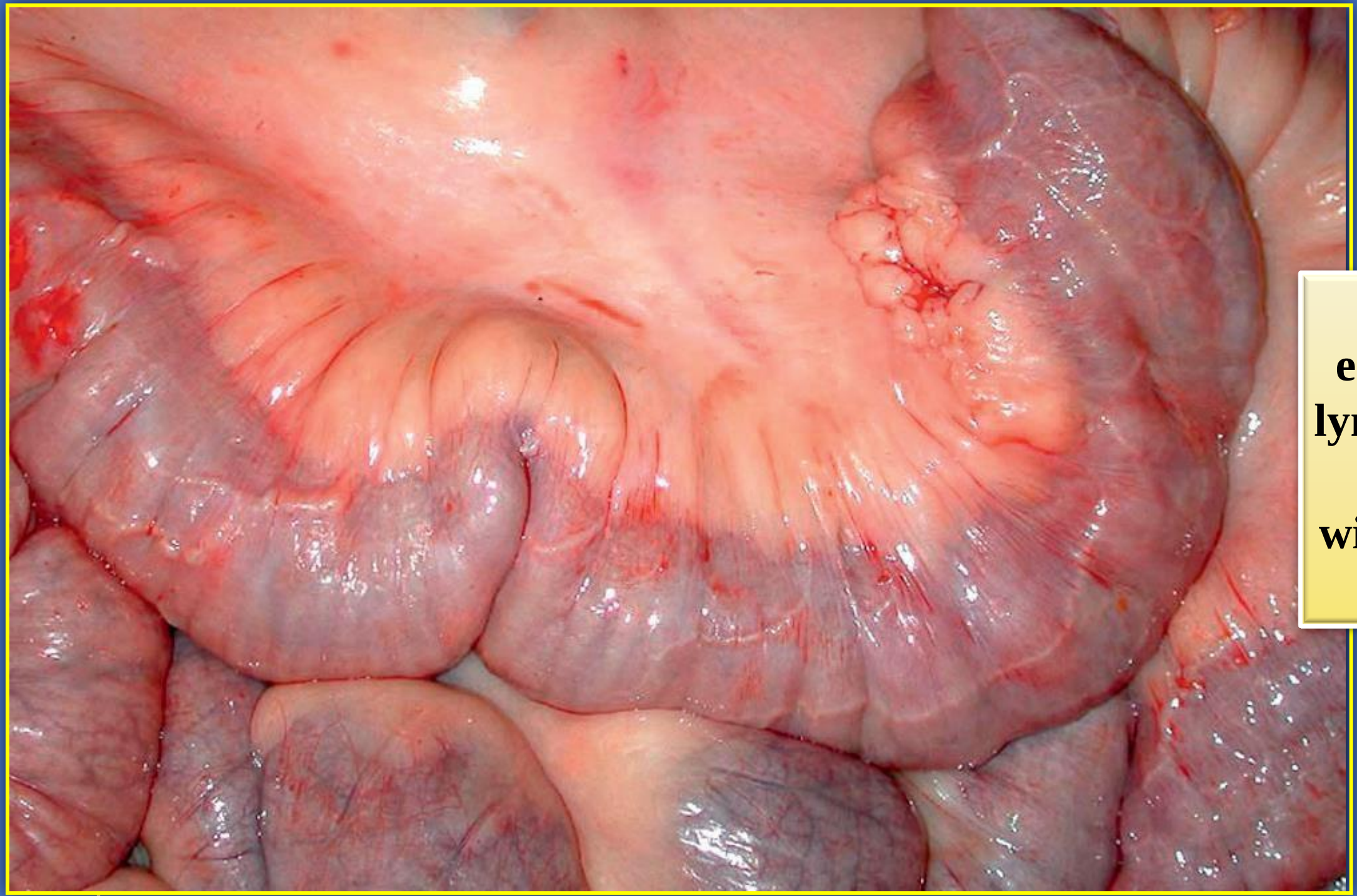
Picture F is an endoscopic view of a Johne's infected cow, showing the characteristic swelling and corrugation of the lining of the intestine that occurs at the clinical stage of infection.

Thickening of the intestinal wall results in poor absorption of nutrients and diarrhea in affected animals.

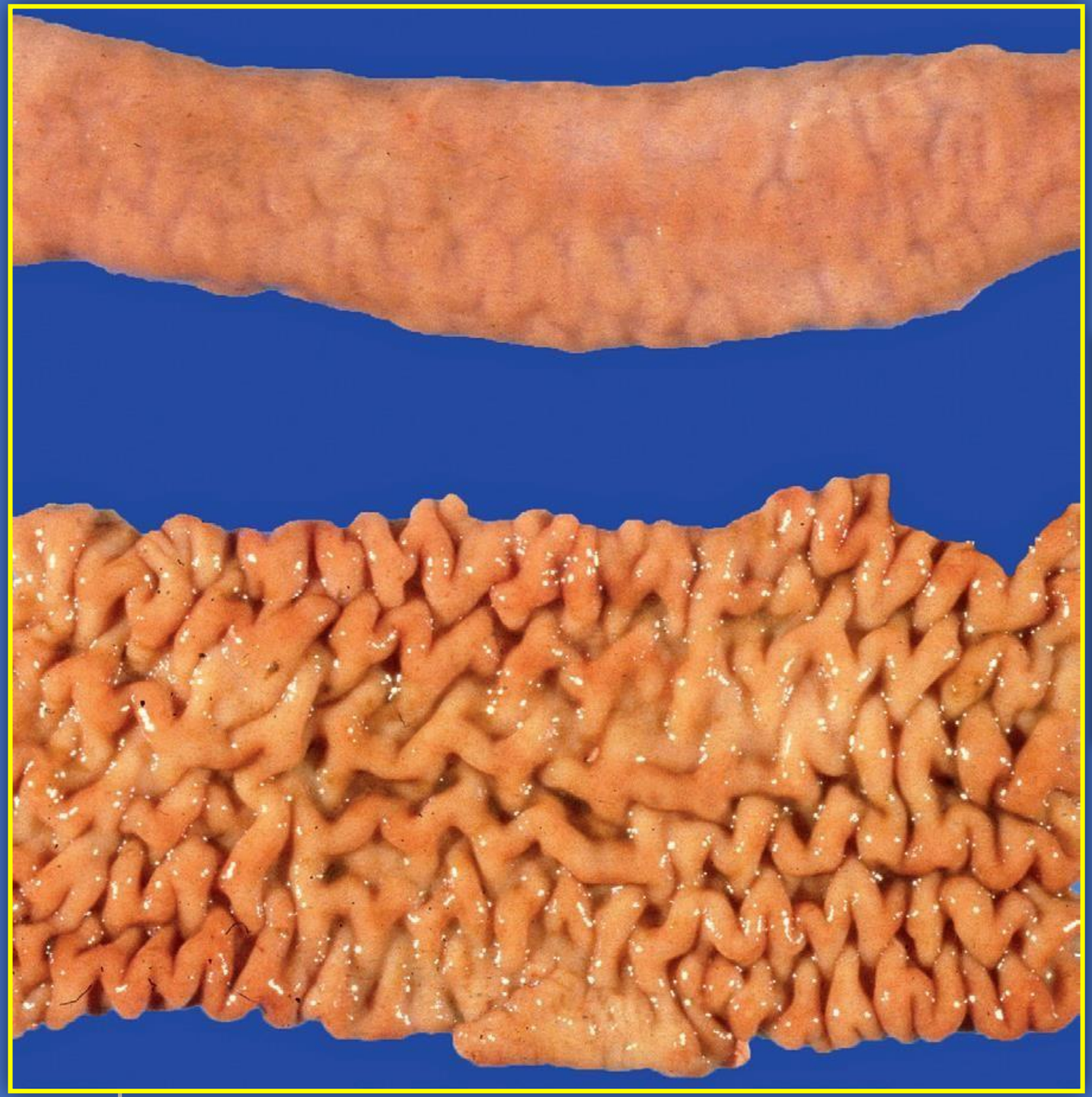


Johne's disease affected animal caused by *Mycobacterium avium* subsp. paratuberculosis. (A) Severely debilitated cow with common symptoms of chronic diarrhea, malabsorption, muscular wasting, and malnutrition. The host cellular immune response leads to the typical granulomatous enteritis seen as thickening of the (B) intestinal mucosa with prominent Peyer's patches, and (C) lymph node showing hyperactive lymphoid tissue (white spots).

Goats, sheep, and related aniamls with Johne's disease (paratuberculosis) generally do not have diarrhea, but continue to lose weight.

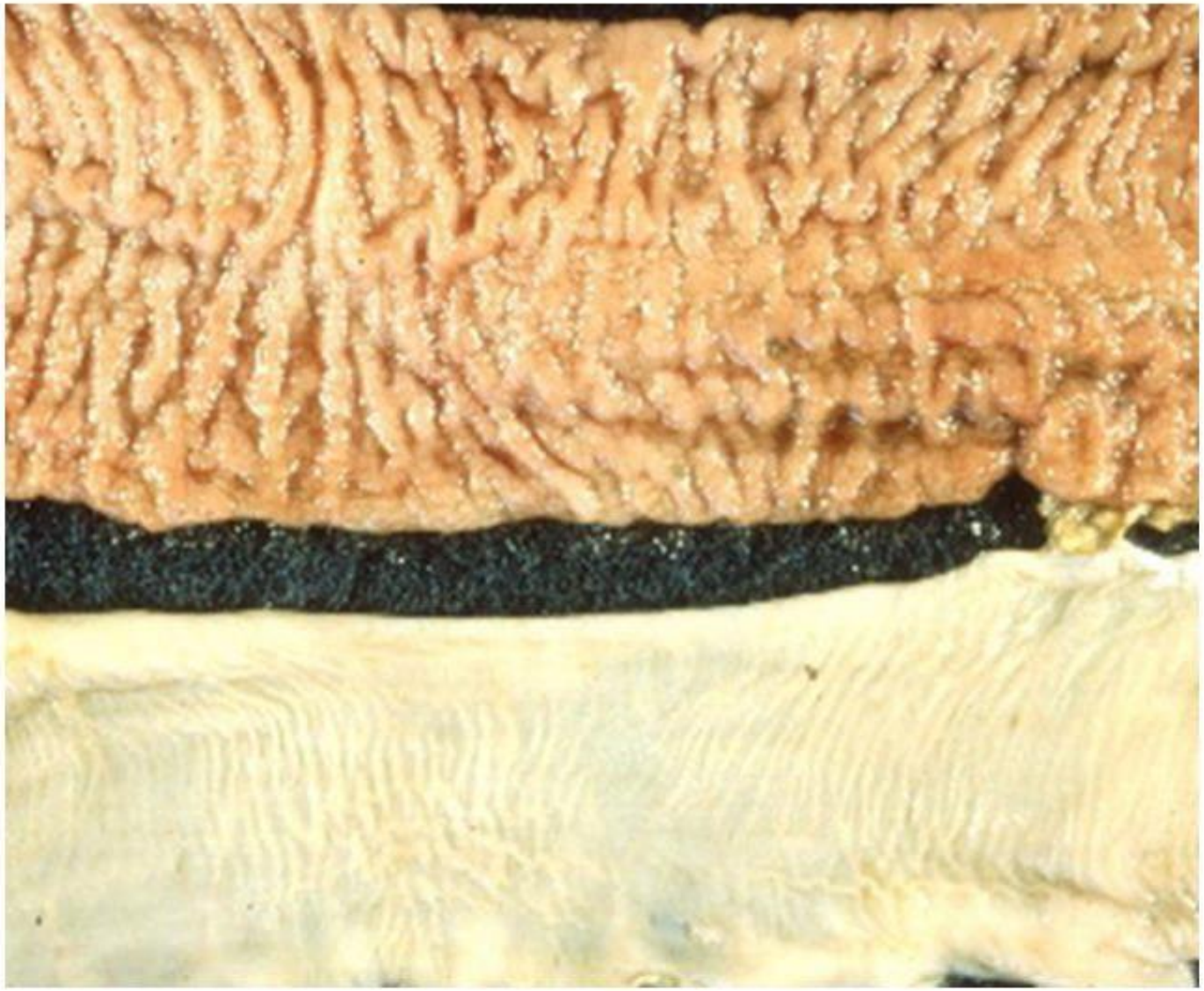


Serosal edema and lymphangitis in a goat with Johne's disease.



Thickened mucosal folds that can also be seen from the serosal surface in the jejunum of a cow with Johne's disease.

Gross pathology of Johne's disease: *Mycobacterium paratuberculosis*

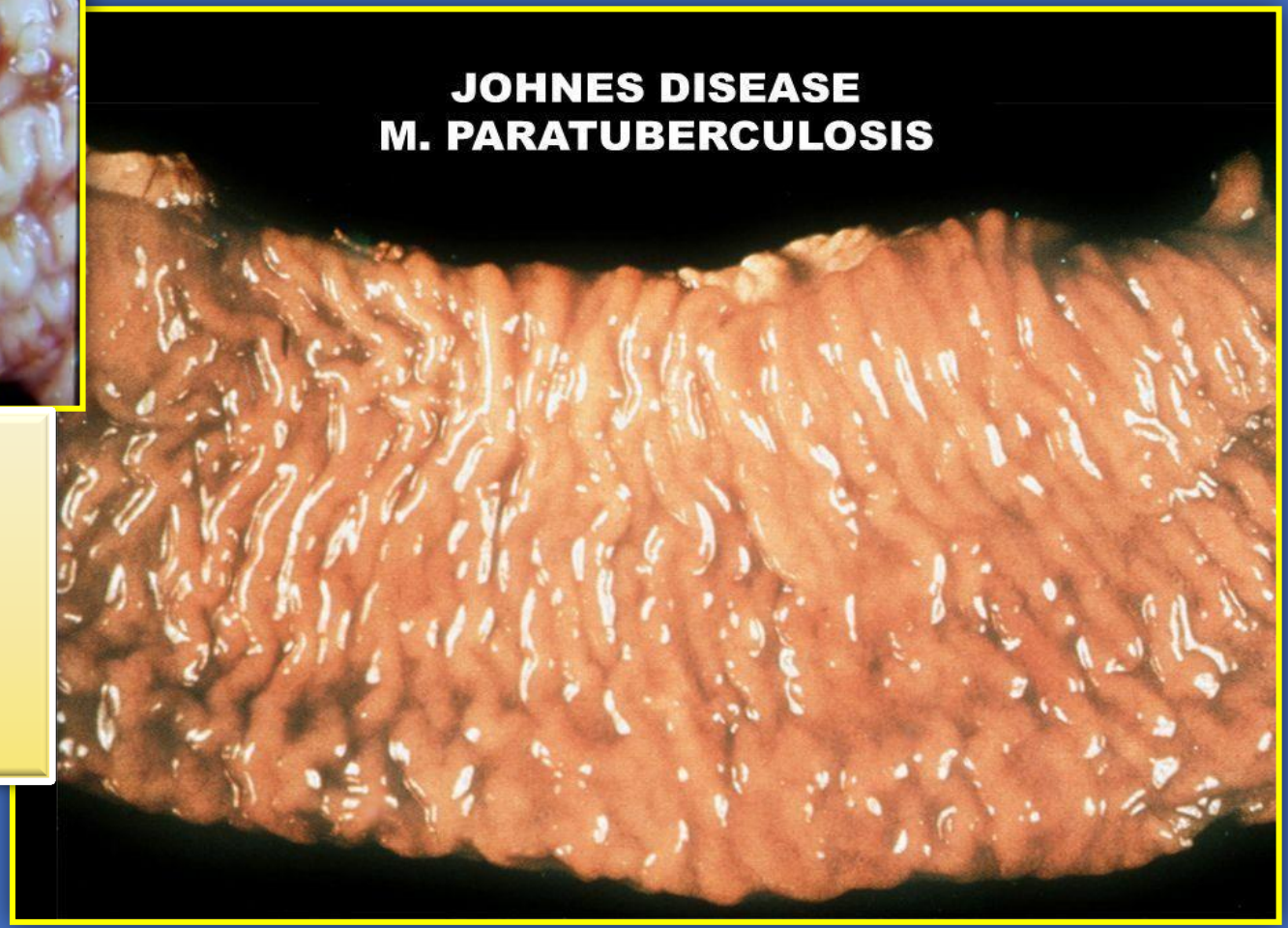


thickened and corrugated infected ileum

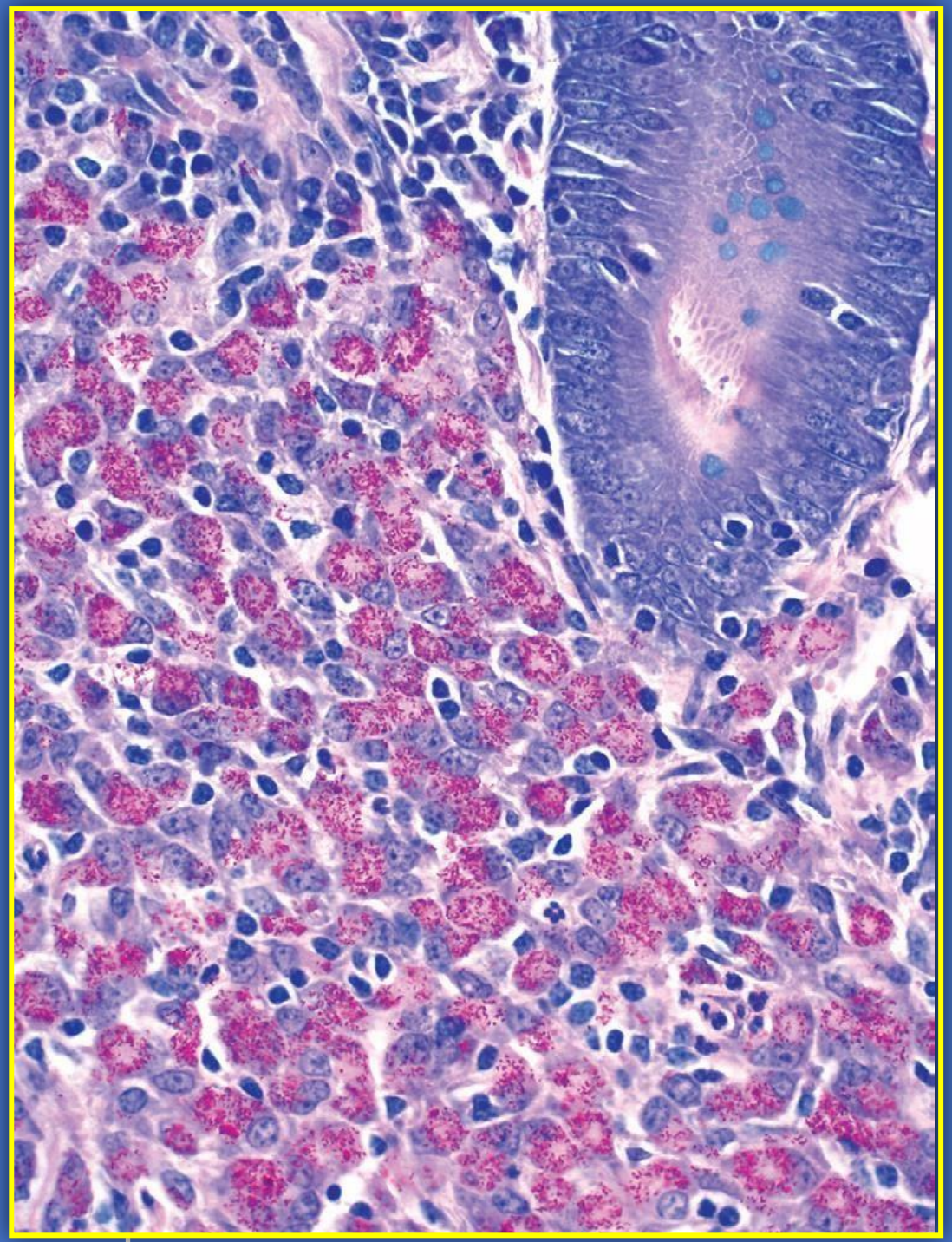
normal ileum

Johne's disease. The classic intestinal change is diffuse thickening of the mucosa, which is folded into transverse rugae, the crests of which may be congested

Ileum from a cow with clinical Johne's disease (bottom), demonstrating thickening of the mucosa and prominent Peyer's patches, compared with ileum from a normal cow (top).



Cow with clinical Johne's disease demonstrating thickening and corrugated of the of the ileum mucosa.



Large number of acid fast bacteria in the cytoplasm of macrophages and giant cells of a cow with Johne's disease.
(Modified Ziehl Neelsen stain.)

Differential Diagnosis: The disease should be differentiated from any of diseases causing weakness & emaciated of animals like tuberculosis, and parasitic disease. As well as disease which cause granulmoa lesion likes tumors and disease which cause abscess, pneumonia and necrosis.