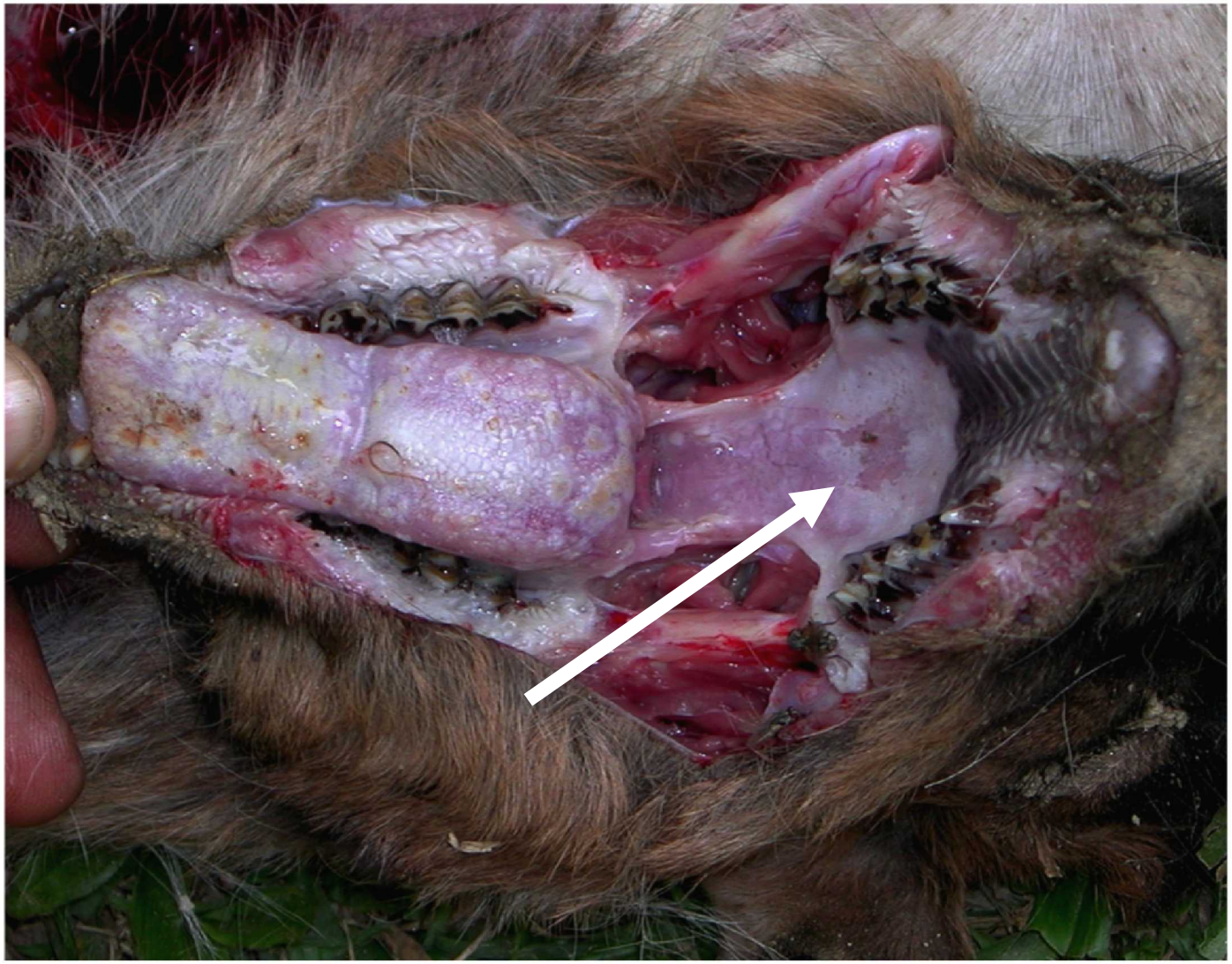
PHARYNGEAL NECROSIS

SAND2014-2359P

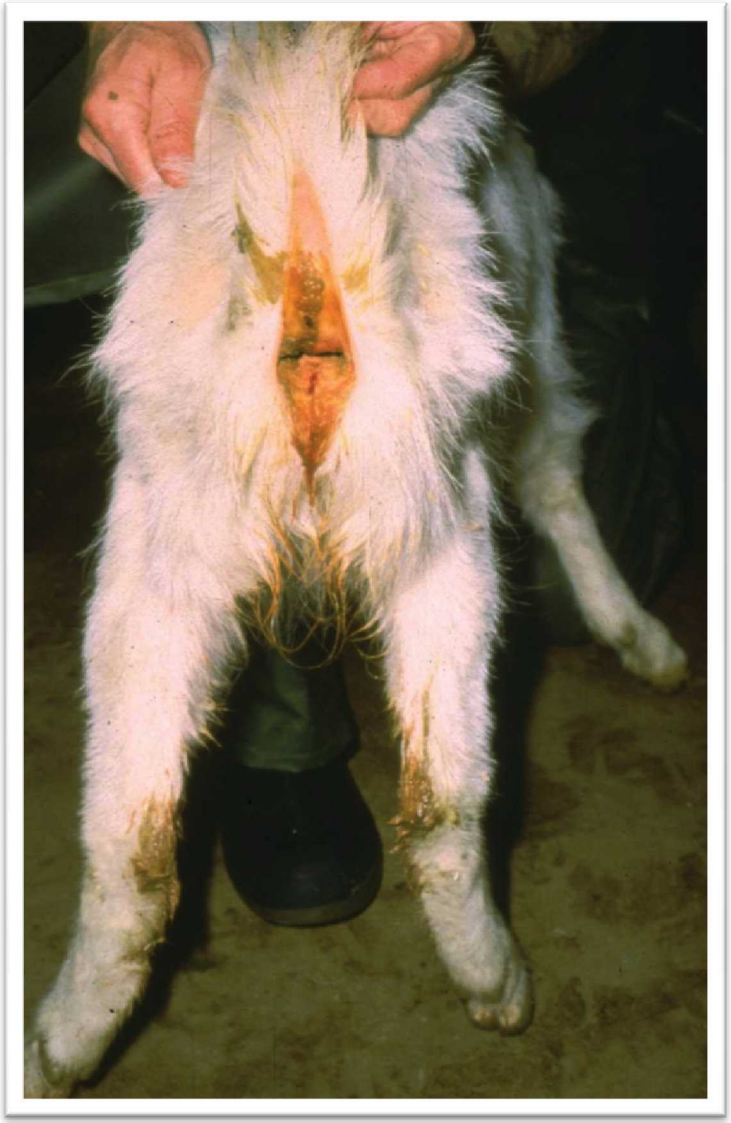


EROSIONS AND NECROTIC MATERIAL ON TONGUE

SWELLING OF LIPS WITH EPITHELIAL NECROSIS

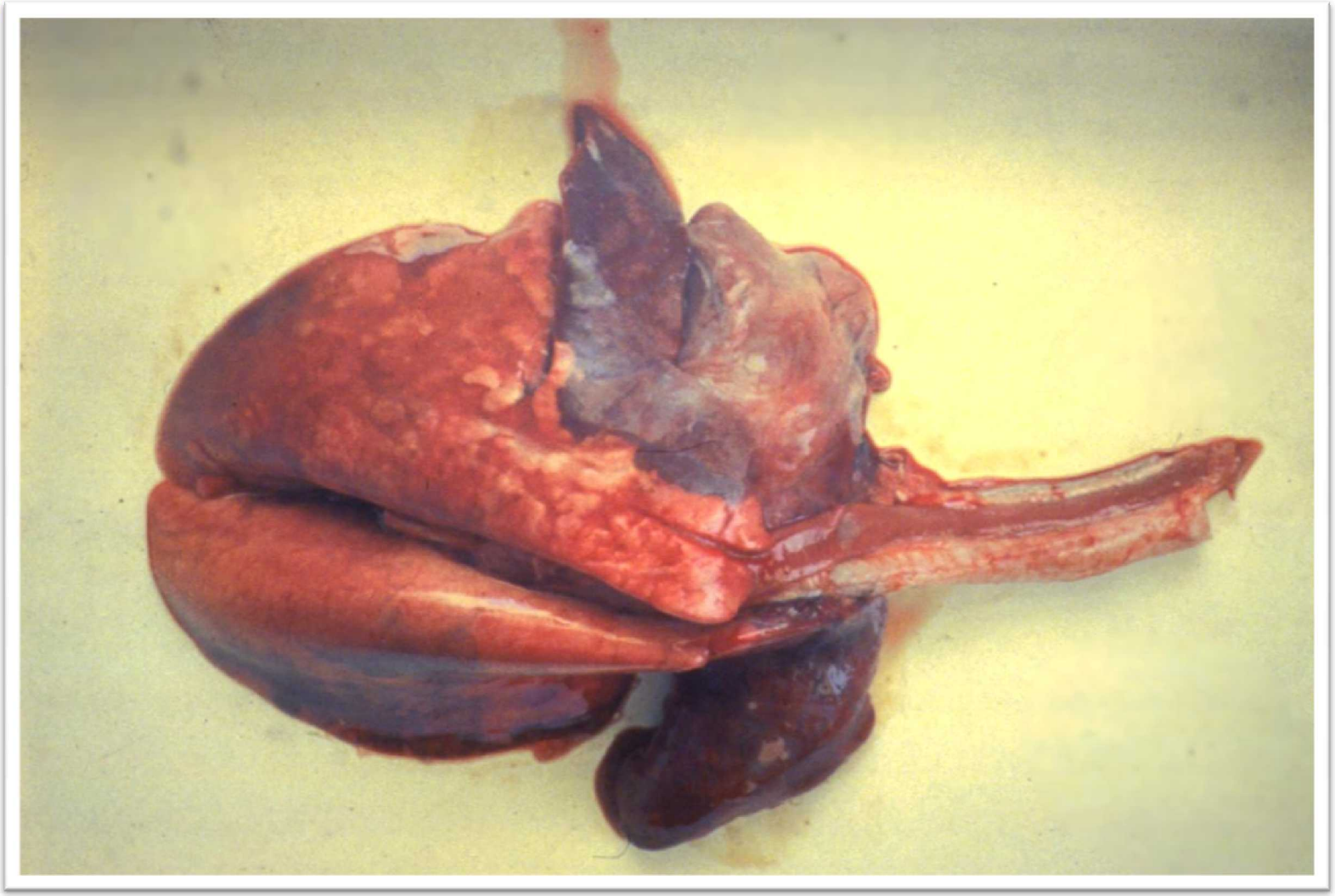
NODULAR LESIONS ON LIPS

DIARRHOEA



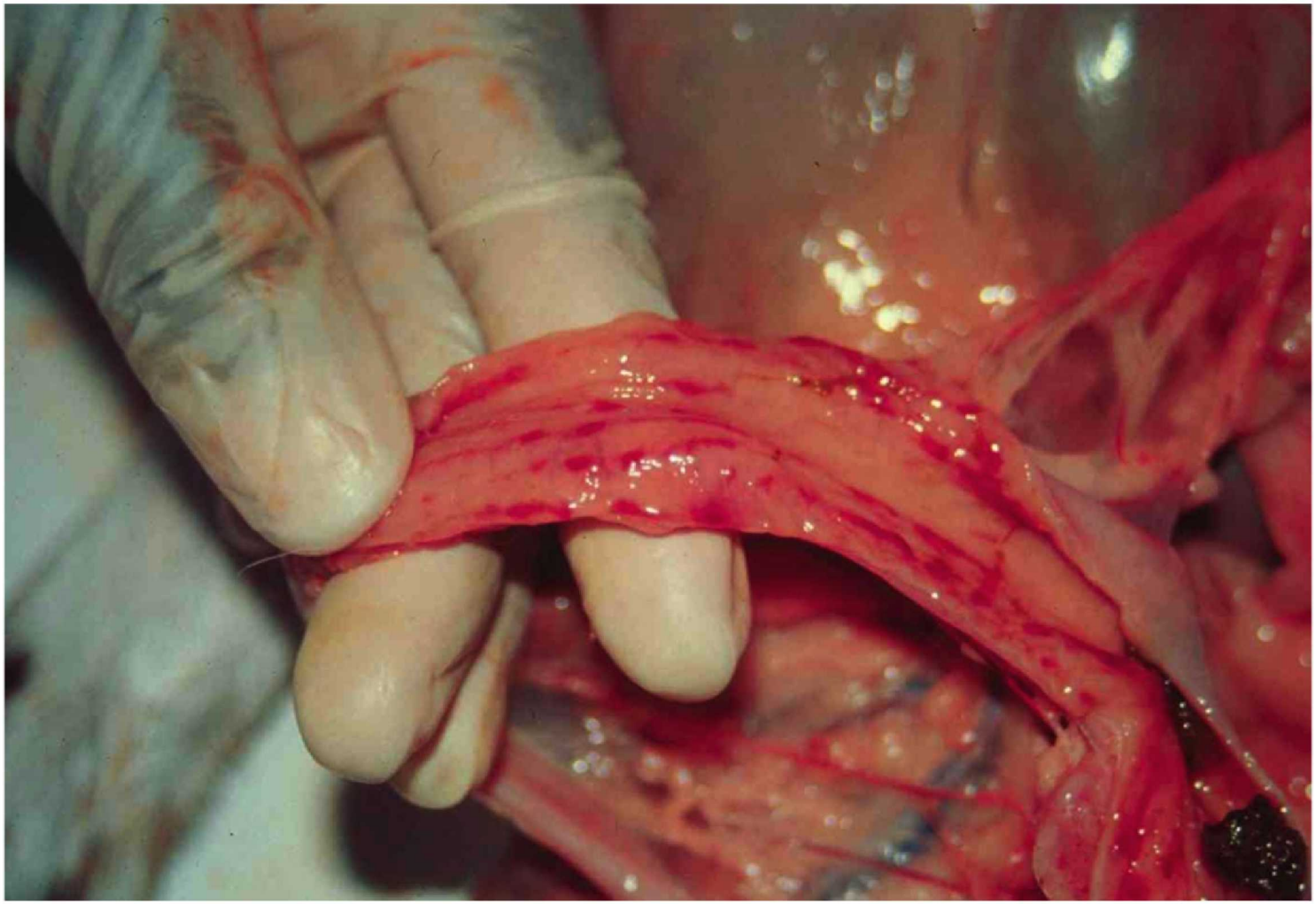
PNEUMONIA – EARLY RED HEPATISATION

BRONCHO-PNEUMONIA



SEVERE ENTERITIS-SMALL INTESTINE

ENTERITIS-LARGE INTESTINE

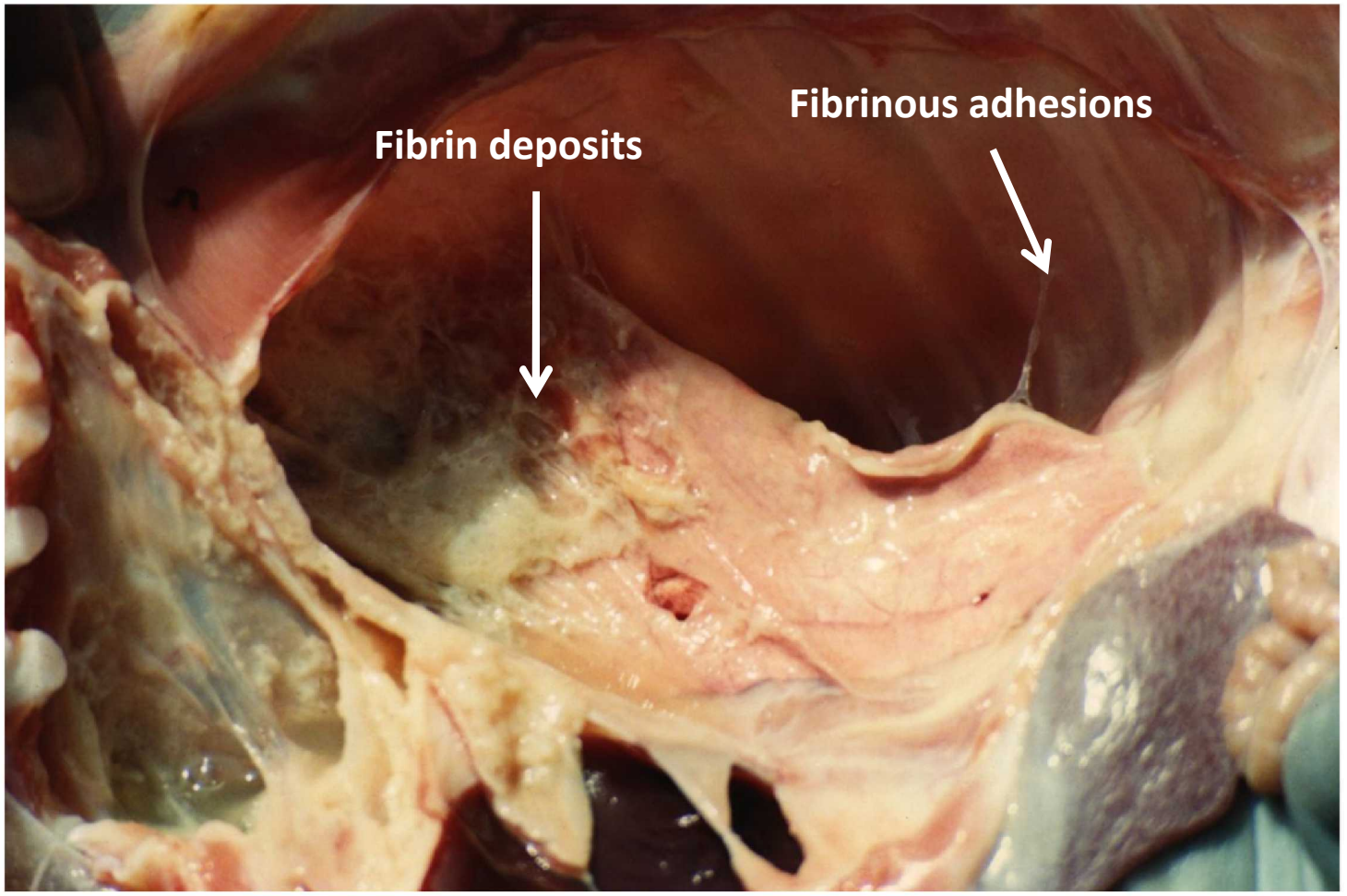


DIFFERENTIAL DIAGNOSIS

- rinderpest (not any more!)
- pneumonic pasteurellosis
- contagious caprine pleuropneumonia
- capripox - sheep and goat pox
- contagious ecthyma - ‘orf’
- bluetongue
- foot-and-mouth disease

DIFFERENTIAL DIAGNOSIS

Contagious Caprine Pleuro-pneumonia (CCPP)



DIFFERENTIAL DIAGNOSIS

Capripox – sheep pox

DIFFERENTIAL DIAGNOSIS

Capripox – goat pox

DIFFERENTIAL DIAGNOSIS

Bluetongue

Cyanosis of mucous membranes

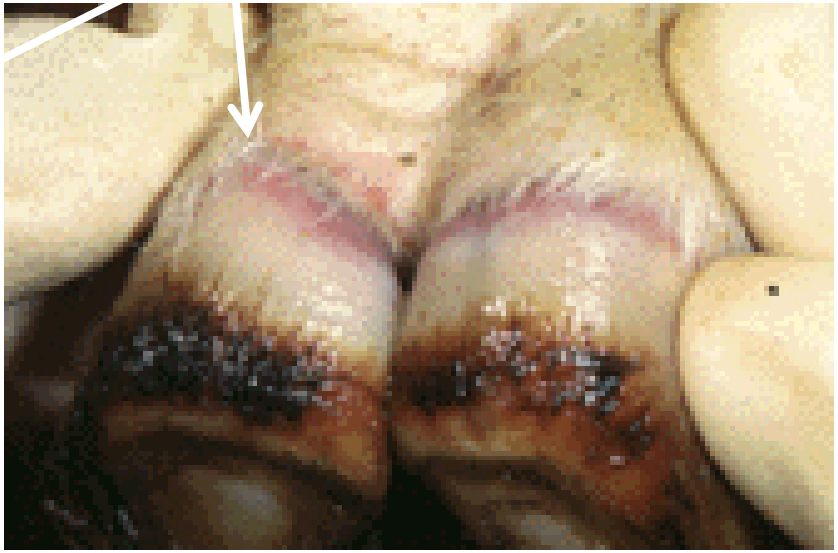
lameness

DIFFERENTIAL DIAGNOSIS

Bluetongue

Swollen head

Coronary band



DIFFERENTIAL DIAGNOSIS

Foot-and-mouth Disease

PPR SPREAD

- Until recently PPR distribution was relatively stable : endemic area in sub-Saharan Africa, the Arabian Peninsula , Middle East and Indian sub-Continent.

- Recently the virus has extended its range south in Africa as far as southern Tanzania, the south of the Congo DR and possibly Zambia, into North Africa (Morocco, Algeria, Tunisia; Egypt has been infected since at least 1987), into the Central Asian Republics and even into China.

PPR GLOBAL DISTRIBUTION

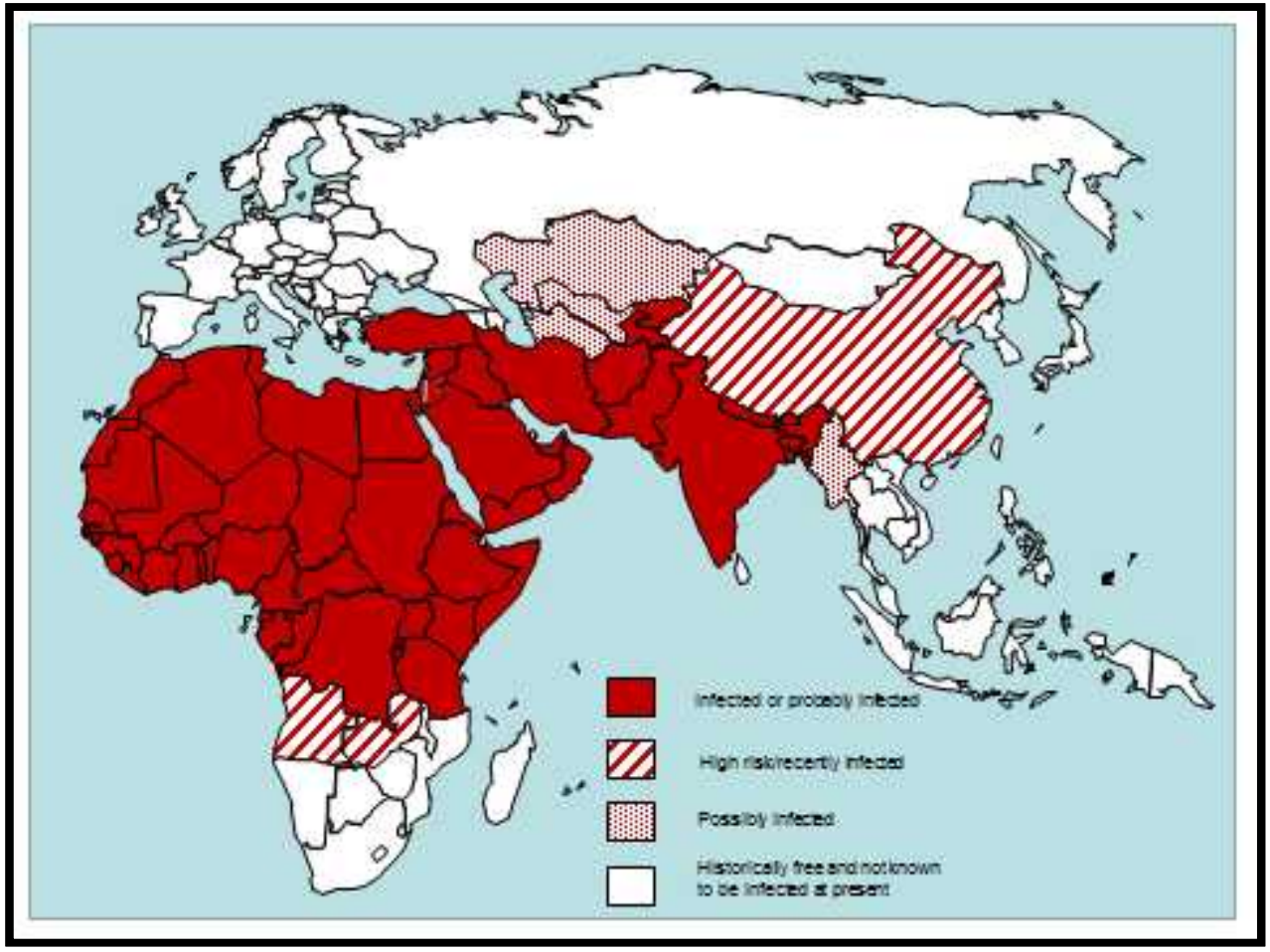
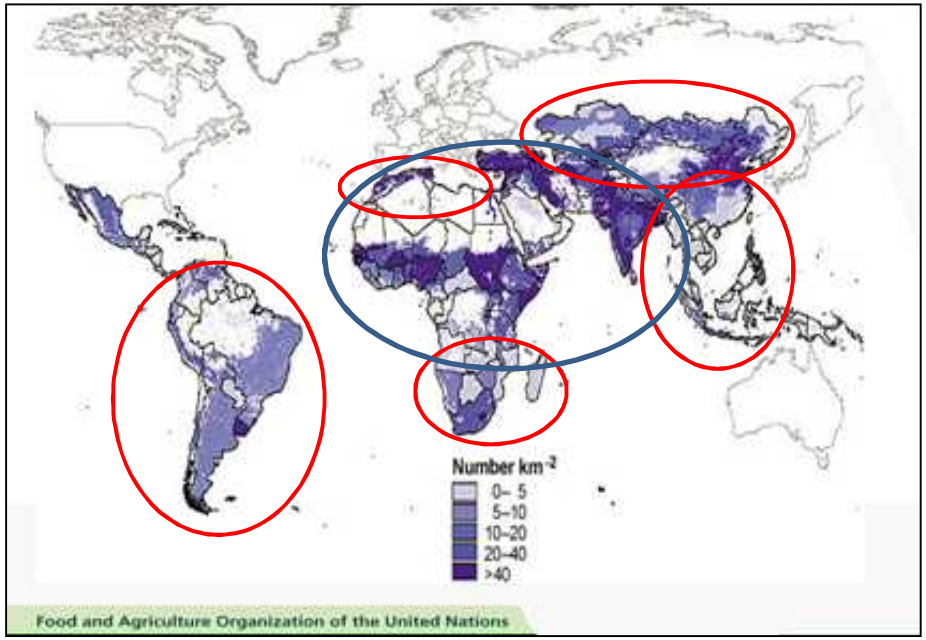


Figure 1: Probable Eurasian and African PPR Status by Country 2013 showing recent trends of spread to previously free areas

[N.B. infection is not known ever to have been present in the Americas and Australasia]

PPR GLOBAL RISK

Small ruminant density



ENDEMIC

HIGH RISK

Many millions of small ruminants in previously free areas [southern and North Africa, in Central Asia, in South-East Asia and in China] are now at high risk of PPR virus invasion.

PROSPECTS FOR SUCCESSFUL CONTROL AND ERADICATION

Rinderpest was only eradicated after:

- there was an effective global **coordination** body
- there had been advances made in rinderpest **epidemiology** which made it possible to **focus** resources on key areas
- Attention was paid to **delivery** systems
- Experience and research provided **understanding** of:
  - the global distribution of rinderpest
  - persistence of the virus in stable reservoirs of infection

PROSPECTS FOR SUCCESSFUL CONTROL AND ERADICATION

AS WITH RINDERPEST, SEVERAL TECHNICAL ISSUES FAVOUR ACHIEVING GLOBAL FREEDOM FROM PPR:

- a single serotype
- no carrier state following infection
- no reservoir outside domesticated small ruminants ???
- live attenuated vaccines are available which confer life-long immunity after a single dose. These are robust, safe and relatively cheap to produce; a thermostable formulations is undergoing final validation
- diagnostic tests are available, or can quickly be made available, including serological tests for seromonitoring of vaccine programmes and detection and “penside tests”
- there is growing technical and political support for eradication
- After rinderpest, WE KNOW HOW TO DO IT

BEP

International BIOLOGICAL THREAT REDUCTION

Thank you for your attention

PESTE DES PETITS RUMINANTS
PPR
A brief introduction

Peter Roeder
Veterinary Consultant
Taurus Animal Health, UK

Sandia National Laboratories is a multi-program laboratory managed and operated by Sandia Corporation, a wholly owned subsidiary of Lockheed Martin Corporation, for the U.S. Department of Energy's National Nuclear Security Administration under contract DE-AC04-94AL85000. **SAND**

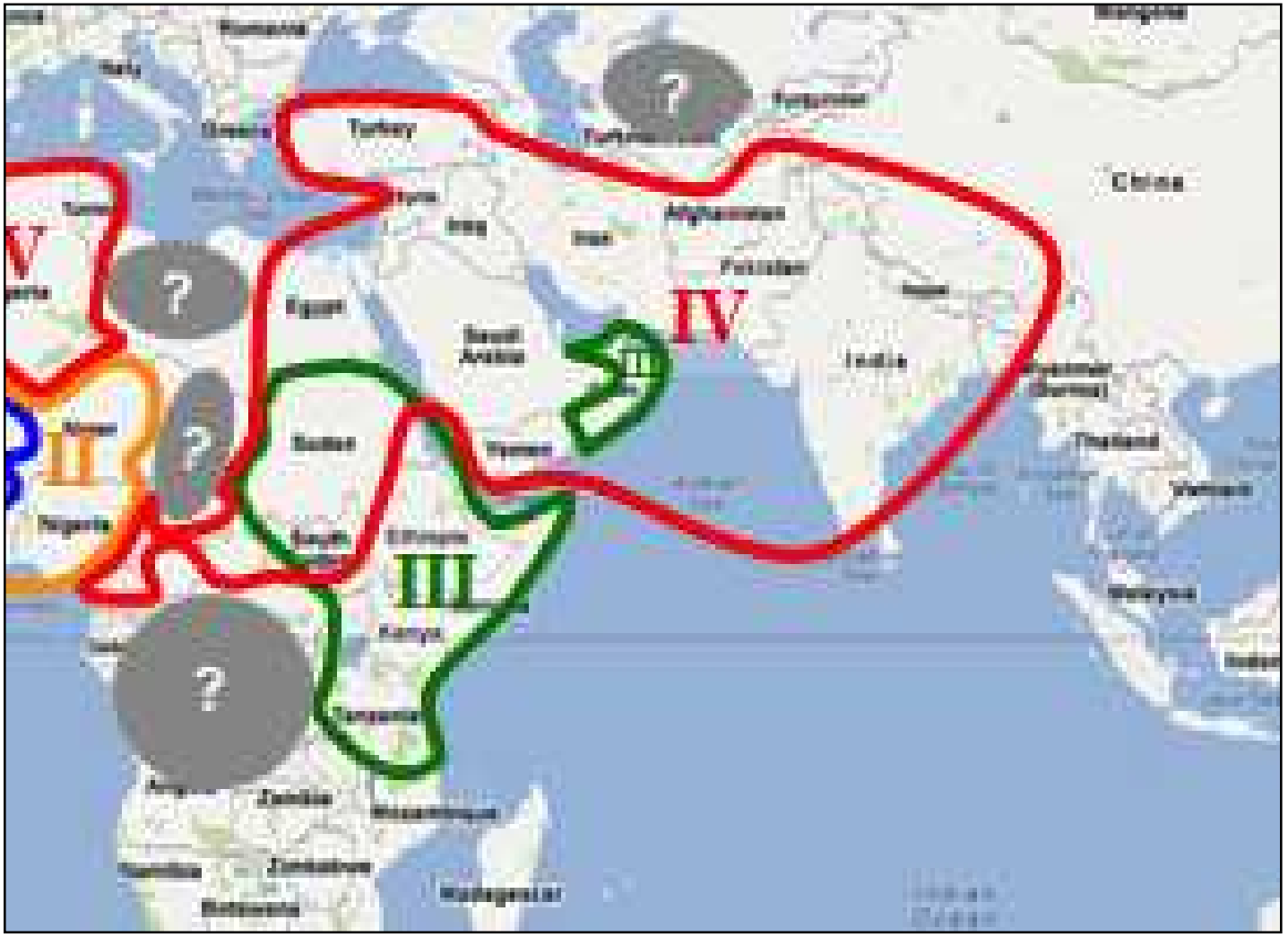
DEFINITION

PESTE DES PETITS RUMINANTS (PPR)

is an acute, contagious and frequently fatal disease of goats and sheep characterised by fever, ocular and nasal discharges, oral erosions, diarrhoea and pneumonia.

Cause: a morbillivirus related to, but different from, rinderpest

PPR VIRAL LINEAGE DISTRIBUTION



EPIDEMIOLOGICAL SIGNIFICANCE?

SPECIES SUSCEPTIBLE

Goats

Sheep

Numerous antelope species in zoological gardens

Cattle and buffaloes – infection only

Camels ?

EPIDEMIOLOGY

Transmission

- Transmission is essentially by direct contact - aerosols
- Very little spread over distance without animal movement
  - meat
  - fomites
  - food chain

  are of no significance

Immunity

- **Sterile immunity after recovery**

  NO CARRIER STATE

- **Homologous vaccines**

PPR CLINICAL SIGNS

Coughing

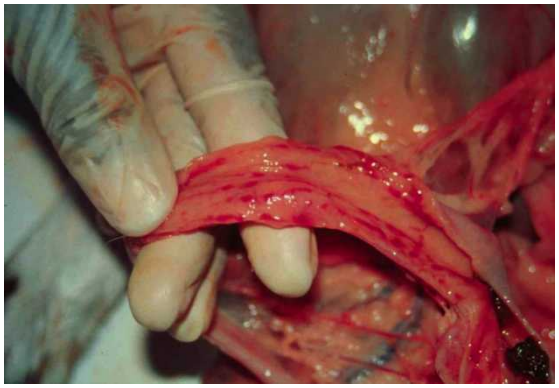
Sneezing

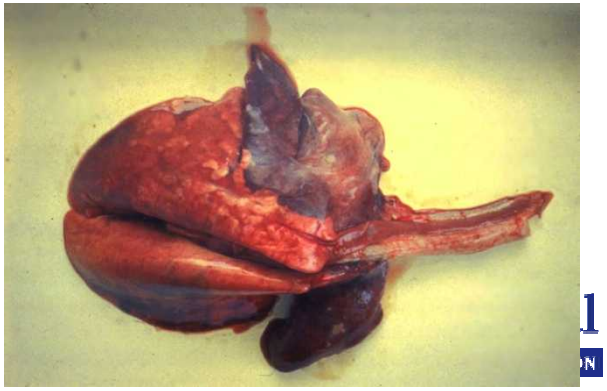
Conjunctivitis

Diarrhoea

Death

ESSENTIALLY PPR IS A RESPIRATORY DISEASE



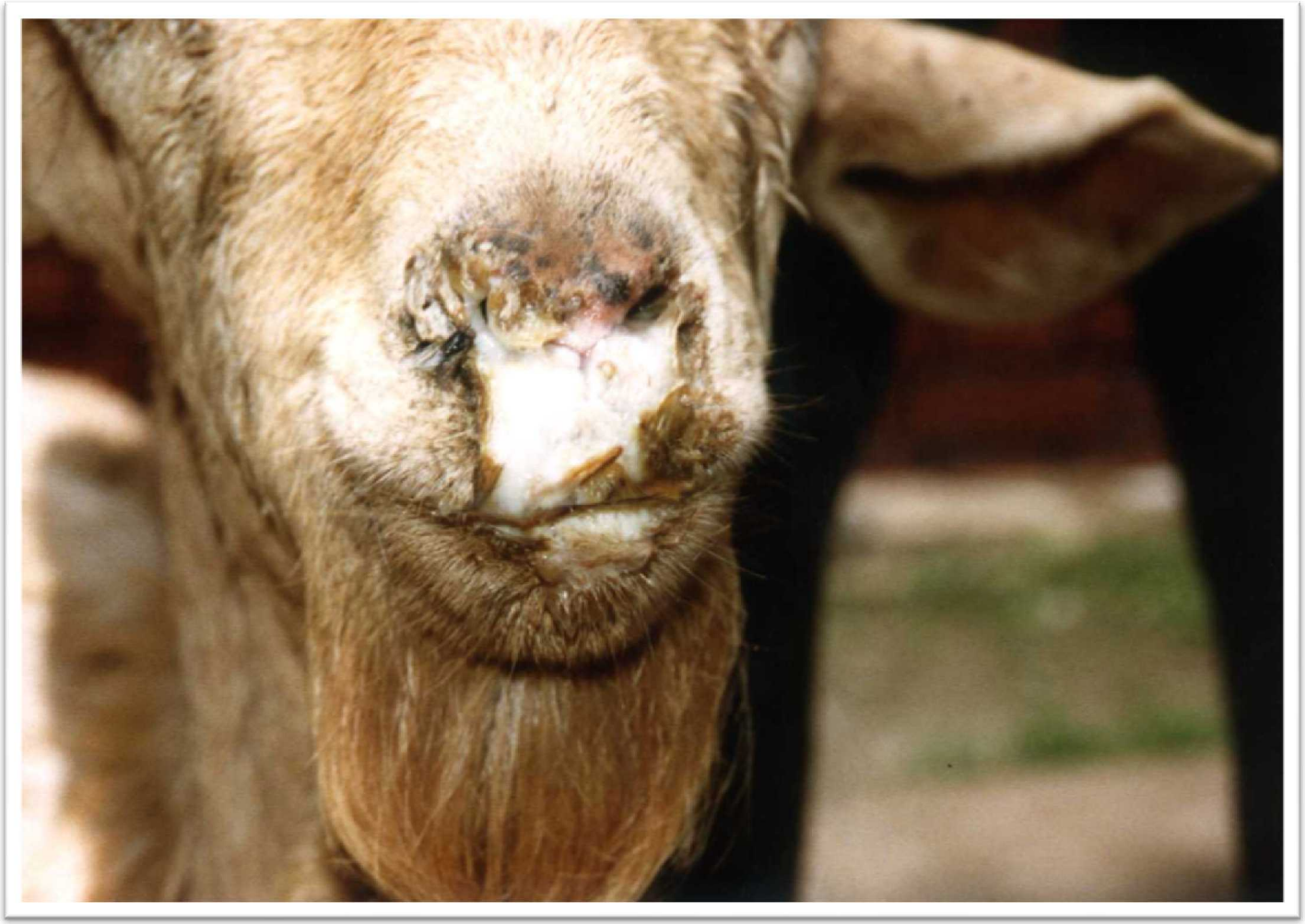


CONJUNCTIVITIS

CONJUNCTIVITIS

OCULAR AND NASAL DISCHARGE

NASAL DISCHARGE – PURULENT AND OBSTRUCTIVE



PURULENT NASAL DISCHARGE

Bangladesh 2003

EARLY ORAL EROSIONS

EARLY ORAL EROSIONS COVERED BY NECROTIC DEBRIS

CASEOUS DEPOSITS ON MUCOSA

CASEOUS DEPOSITS ON MUCOSA

PHARYNGEAL NECROSIS