



Blood-borne Apicomplexans Laboratory



*Babesia and
Cytauxzoon*

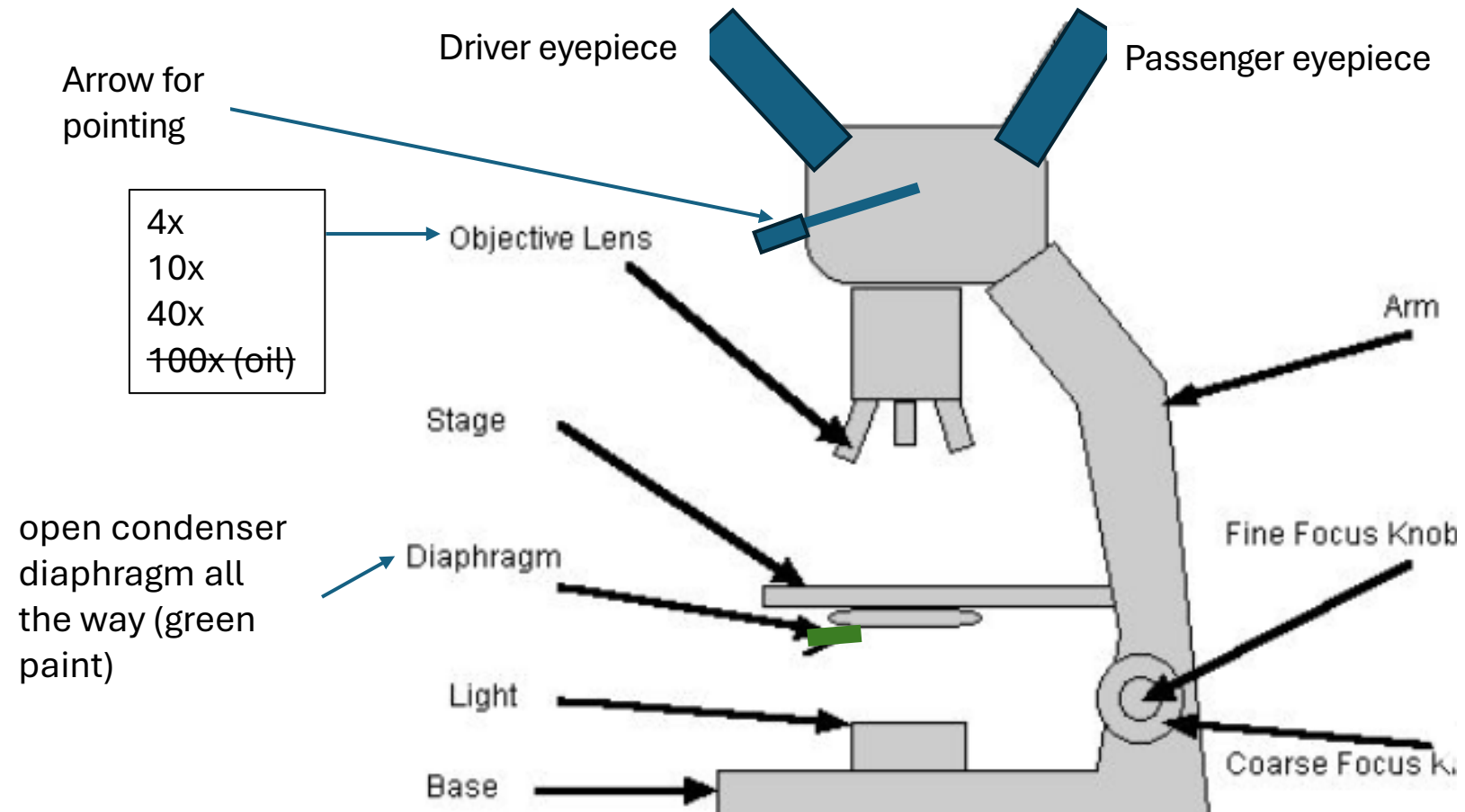
Laboratory Safety

Lab Coats
Safety Glasses
Gloves



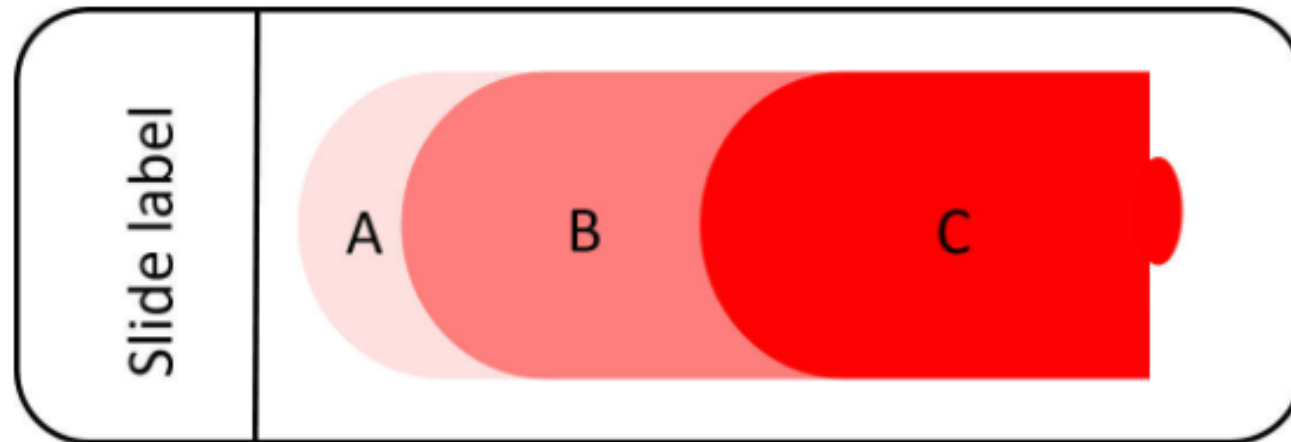
NO Food or Drinks

1. Learn how to use a microscope for blood smear examination (adjusting oculars for driver and passenger for focusing)



2. Examine 3 blood smears for piroplasms

- a. Start at 10X and orient yourself, find the feathered edge then move toward the monolayer.
- b. Adjust magnification to 40X and systematically scan the monolayer



A: Feathered edge- Platelet clump evaluation

B: Monolayer- Cell evaluation

C: Body- Multiple cells thick- do not use

1. There are three cases with slides to examine per pair of students

- 1: Blood smear from a sick dog, take **slides A and B**
- 2: Blood smear from a sick cow, take **slide C**
- 3: Lymph node aspirate from a sick dog (we look at together)
4. Blood smear from cat with *Cytauxzoon felis* (we will look at together)

2. Answer the questions after examining the slides

3. You can discuss the cases with your colleagues and share slides

4. 20 minutes before the end of class, we will go over the cases and view slides together

CASE 1

Signalment:

A 3-year-old male neutered mixed breed, weighing 62 lbs, presented to the veterinary clinic.

History:

The dog was adopted from a rescue organization two weeks ago. The rescue noted that the dog had previously lived in a kennel environment and been around other dogs (breeds not known). The owner reported lethargy, decreased appetite, and pale gums over the past three days. No recent travel history reported since adoption. Not on flea or tick prevention yet.

Physical Examination:

- Temperature: 103.2°C (mild fever)
- Mucous membranes: Pale
- Heart rate: 120 bpm (tachycardia)
- Respiratory rate: 30 bpm
- Enlarged popliteal lymph nodes and mild splenomegaly were noted on palpation.

Laboratory Findings:

1. Complete Blood Count (CBC):

- Packed Cell Volume (PCV): 22% (low; anemia)
- Thrombocytopenia (platelets: 60,000/ μ L)
- Leukocyte count: Normal

2. Biochemistry:

- Mild hyperglobulinemia
- Slightly elevated ALT and ALP



CASE 2

Signalment:

A 3-year-old Hereford cow presented with acute anemia, and lethargy.

History:

The cow is part of a herd in Laredo, TX.

Clinical Findings:

- Temperature: 104.4°F (fever)
- Mucous membranes: Pale with mild icterus
- Heart rate: 110 bpm (tachycardia)
- Respiratory rate: 36 bpm
- Splenomegaly noted on abdominal palpation

Laboratory Results:

Complete Blood Count (CBC):

- PCV: 16% (severe anemia)
- Platelets: 80,000/ μ L (thrombocytopenia)



CASE 3 (We will look at this slide together)

Signalment:

A 5-year-old female intact Spanish galago (AKA Spanish greyhound), weighing 66 lbs, presented to the clinic.

History:

The Spanish galago was adopted 6 months ago in Spain. The owner reports progressive weight loss, decreased appetite, and intermittent lethargy over the past month. The dog has also developed alopecia, along with mild epistaxis.

Physical Examination:

- Body condition score: 3/9 (underweight)
- Mucous membranes: slightly pale, tachy
- Lymph nodes: Enlarged popliteal and submandibular lymph nodes
- Skin: Alopecia on the hind legs
- Splenomegaly noted on abdominal palpation

Initial Diagnostics:

1. **Complete Blood Count (CBC):**
 - Mild non-regenerative anemia (PCV: 28%)
 - Thrombocytopenia (platelets: 80,000/ μ L)
2. **Serum Biochemistry:**
 - Hyperglobulinemia
 - Mildly elevated creatinine
3. **Urinalysis:**
 - Proteinuria (UPC ratio: 3.2)
4. **Fine Needle Aspirate (FNA)** of an enlarged lymph node:

