Practical parasitology

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Laboratory diagnosis

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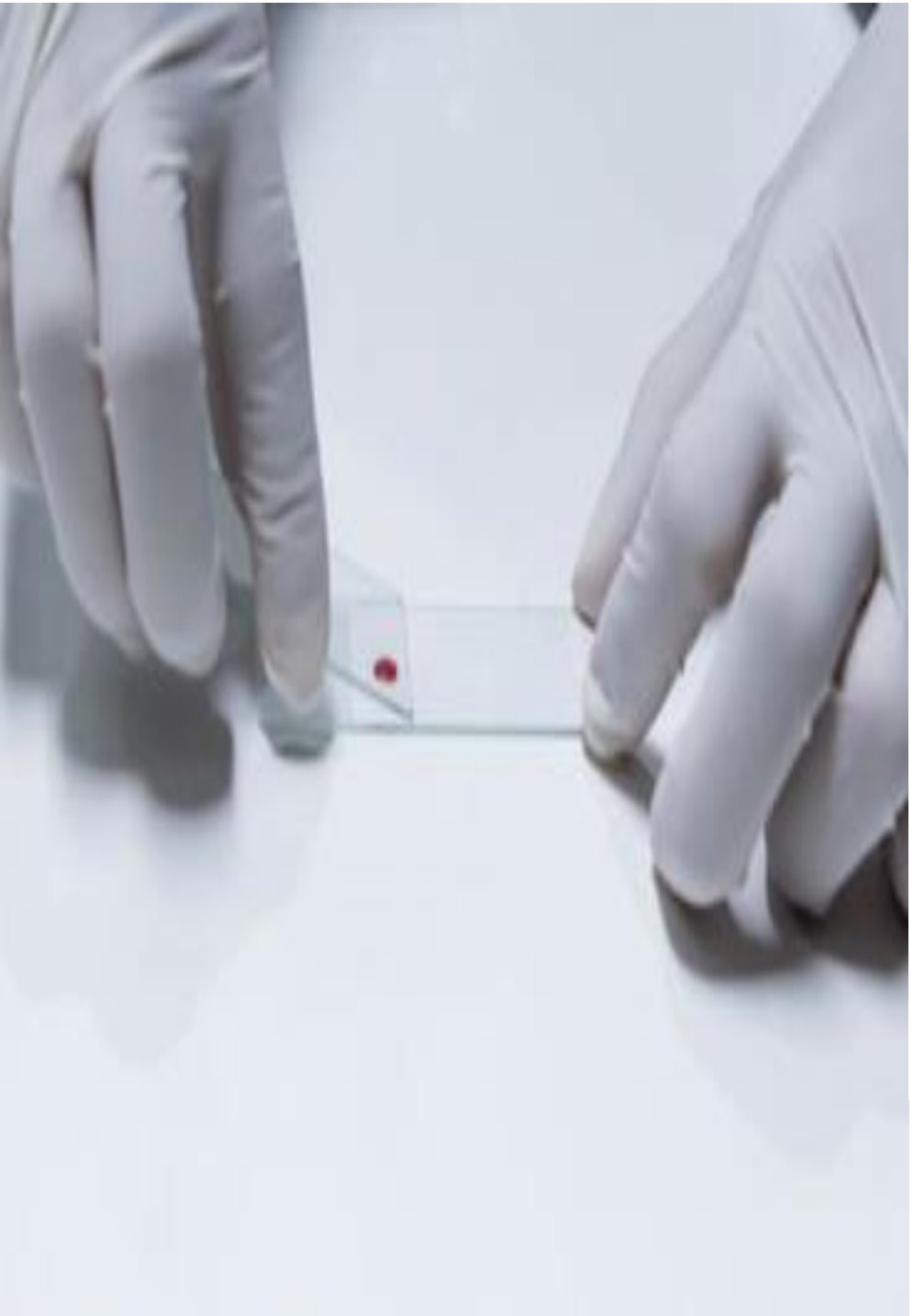
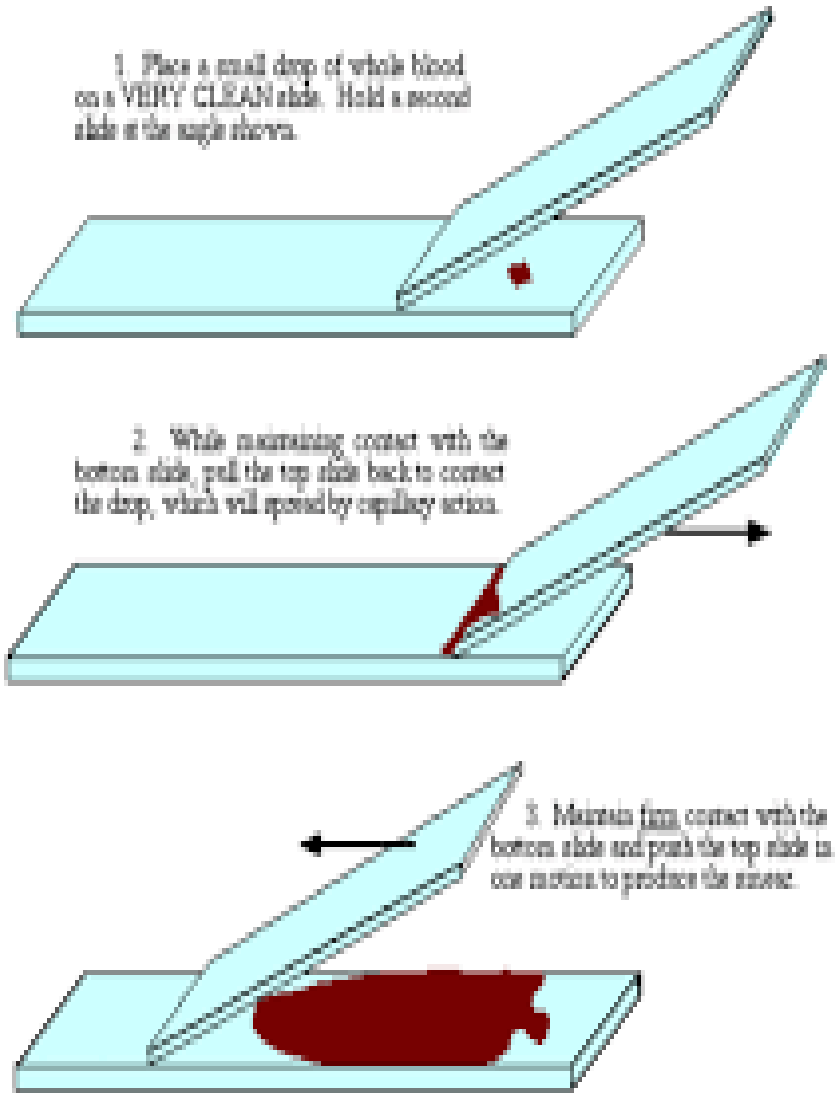
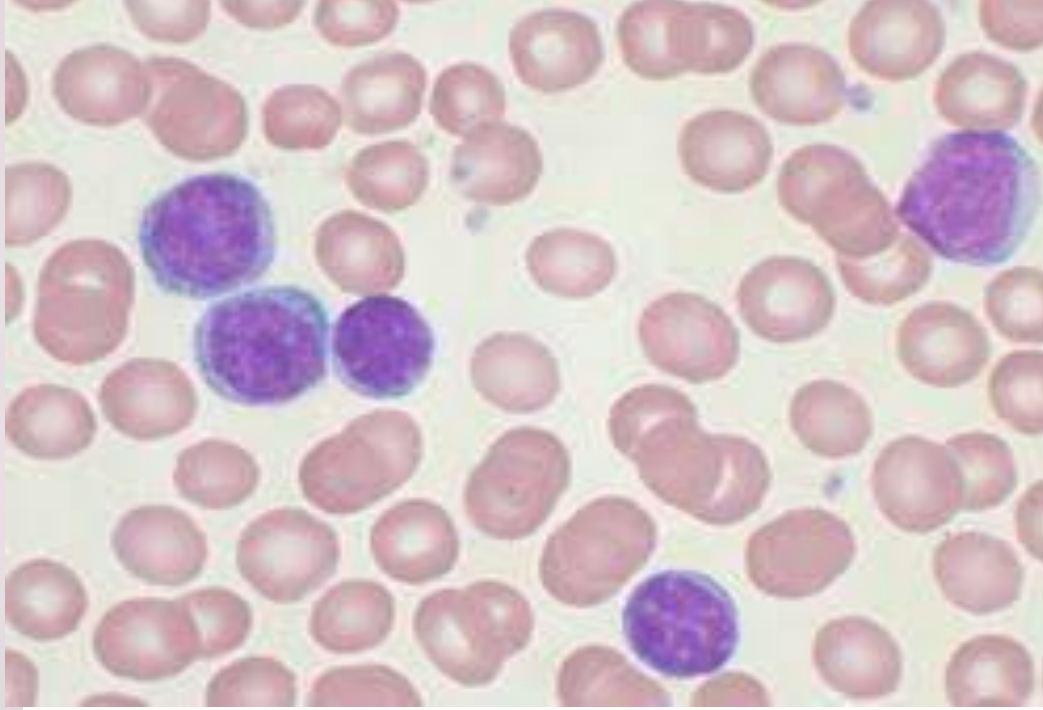
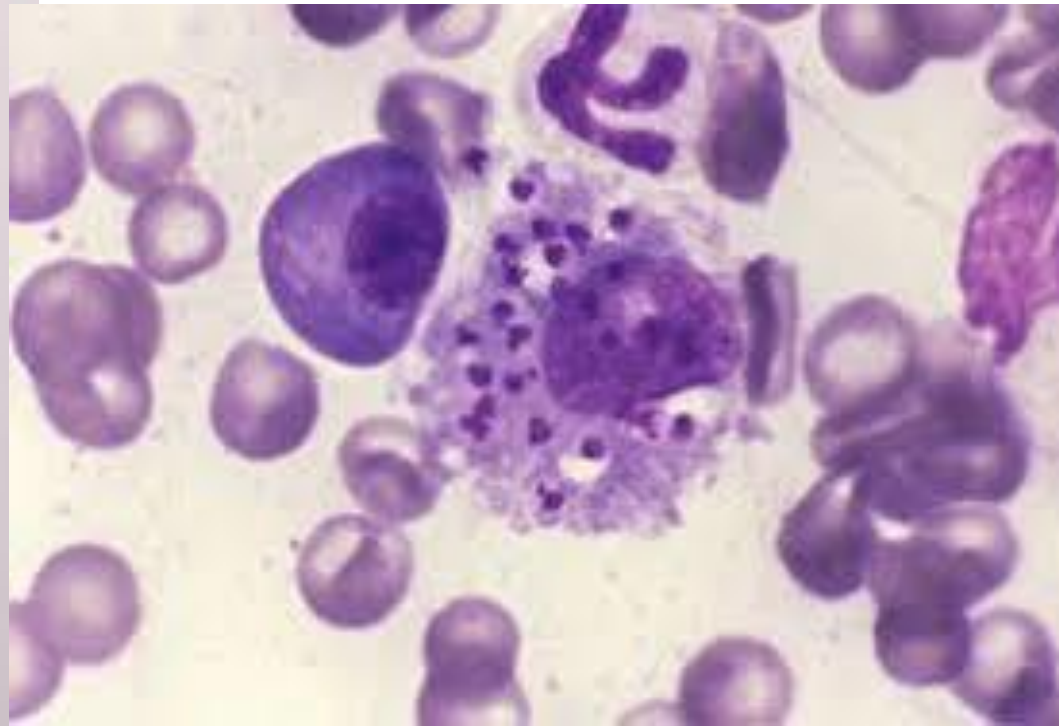
- depending on the nature of the parasitic infections, the following specimens are selected for laboratory diagnosis
- 1- Blood - in those parasitic infections where the parasite itself in any stage of its development circulates in the blood stream, examination of blood
- film forms one of the main procedures for specific diagnosis For example, in *malaria* the parasites are found inside the red blood cells In *Bancroftian* and Malayan filariasis, *microfilariae* are found in the blood plasma




1. Place a small drop of whole blood on a VERY CLEAN slide. Hold a second slide at the angle shown.
2. While maintaining contact with the bottom slide, pull the top slide back to contact the drop, which will spread by capillary action.
3. Maintain firm contact with the bottom slide and push the top slide in one motion to produce the smear.





2- Stool - examination of the stool forms an important part in the diagnosis of intestinal parasitic infections and also for those

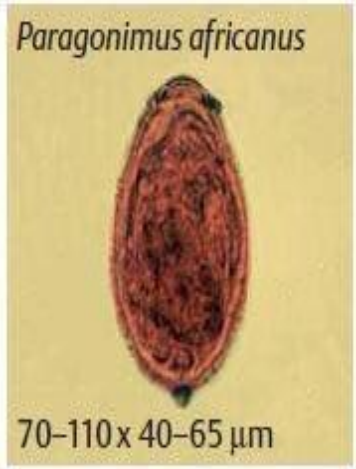
helminthic parasites that localize in the biliary tract and discharge

their eggs into the intestine.

In protozoan infections, either trophozoites or cystic forms may be detected; the former during the active phase and the latter during the chronic phase. Example, Amoebiasis, Giardiasis, etc

In the case of helmithic infections, the adult worms, their eggs, or larvae are found in the stool.


Clonorchis
27–35 x 11–20 µm


Paragonimus africanus
70–110 x 40–65 µm

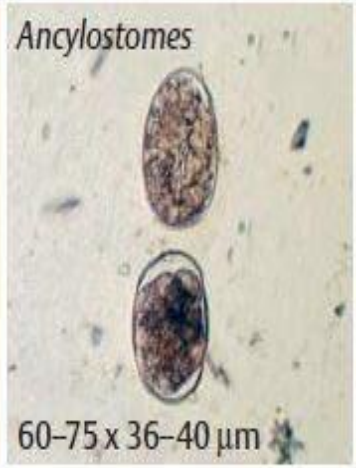

Diphyllobothrium latum
58–70 x 40–50 µm


Taenia spp.
30–43 x 29–38 µm


Hymenolepis nana
44–62 x 30–53 µm


Ascaris lumbricoides
55–75 x 35–50 µm


Trichuris trichiura
50–55 x 22–24 µm


Ancylostomes
60–75 x 36–40 µm


Enterobius vermicularis
50–60 x 20–32 µm

3- Urine- when the parasite localizes in the urinary tract, examination of the urine will be of help in establishing the parasitological diagnosis For example in urinary Schistosomiasis, eggs of *Schistosoma haematobium* are found in the urine.,and microfilariae are found in the urine.

4- **Sputum** – examination of the sputum is useful in the following:

- In cases where the habitat of the parasite is in the respiratory tract, as in

Paragonimiasis, the eggs of *Paragonimus westermani* are found. In amoebic abscess of lung

5-Biopsy material - varies with different parasitic infections. For example spleen punctures in cases of kala-azar, muscle biopsy in cases of Cysticercosis, Trichinelliasis, and Chagas' disease, Skin snip for Onchocerciasis.