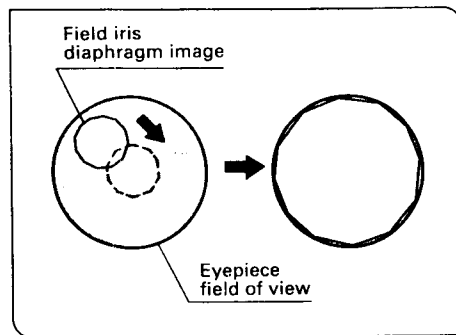


BASIC OBSERVATION PROCEDURES FOR COMPOUND MICROSCOPES

Good microscopy requires the adoption of work habits that facilitate observation, minimize fatigue and eyestrain, and protect the equipment from damage. Follow these steps each time you use the compound microscope.

1. Place the microscope directly in front of you on the laboratory table. Remember to carry the microscope using both hands after removing it from the storage cabinet. Carefully remove the dust cover and place it back in the storage cabinet or in a drawer so it is out of the work area. Unwrap one or two turns of the power cord and plug in the microscope to a power outlet.
2. Switch the power switch to "I" (on) and adjust the brightness with the light intensity knob. Use the lowest intensity to illuminate to the specimen that is useful.
3. Engage the 4X objective by revolving the nose piece using the grooved ring at the top of the nosepiece and not by handling the objectives themselves. Make sure the nosepiece stops with an audible click.
4. Place a specimen slide on the stage and gently release the spring clip which holds it in place. When using a cover slip, always view a slide with the cover slip towards the objective lens.
5. Turn the X-axis knob and the Y-axis knob (shown on the diagram) to move the specimen into light path.
6. Looking through the right eyepiece with your right eye, turn the coarse adjustment knob to bring the specimen into focus. After obtaining approximate focus, use the fine adjustment knob to make final adjustment of the image.
7. Looking through the left eyepiece with your left eye, turn the diopter adjustment ring on the eyepiece to bring the left eye into focus.
8. With both eyes open, grasp the eyepiece base with thumb and forefingers of each hand and move the eyepieces apart and together slowly, until you see a single image of the specimen. This may have to be done several times in order to get the single image. If you have difficulty with this step, ask your instructor to assist you.
9. Next check the center of the condenser – this will allow a maximum amount of light to pass directly through a specimen and be captured by the objective lens. Start with the 10X objective. Focus on the slide. Raise the condenser height adjustment knob to bring the field diaphragm image into final focus – the edge of the circle of light should be sharp. While looking through the eyepieces, turn the field diaphragm counterclockwise until only a small circle of light is visible. Adjust the centering screws to insure the circle of light is in the center of the field of view. Now open the field iris diaphragm until light fills the field of view.
10. With a slide on the stage move the specimen into the path of light. Using the 40X objective, focus the image. Now experiment altering the amount of light passing through the specimen by opening and closing the iris diaphragm with the lever located above the centering screws. You will need to adjust the iris diaphragm for each different specimen you observe, depending on the amount of contrast your observation requires.

11. Raise or lower the condenser until you are satisfied you have the best resolution of the object on the slide. Raising or lowering the condenser moves the focal point of the condenser up or down. For greatest resolution, it is desirable to move the light so it is just at the opening of the objective lens being used



12. Adjust the light intensity using the light intensity knob on the right side of the base. Generally, the higher the magnification, the higher the intensity of the light. Always turn the light intensity knob fully down before switching off the power.
13. When you have finished observations using the microscope, lower the stage, gently remove the specimen from the stage clips, lower the light intensity to its lowest setting, and switch off the power. Wipe any dirty lenses clean using **lens tissue only**, with a drop of cleaning solution. Unplug the instrument and carefully wind the power cord either on the cord winder or on the base, replace the dust cover and return the scope to its cabinet.

HOW TO USE THE OIL IMMERSION OBJECTIVE

1. Focus on the specimen with the 10X objective.
2. Place a small drop of immersion oil onto the specimen at the area to be observed.
3. Rotate the 100X objective into position without getting the 40X objective in the oil.
4. While observing from one side of the stage, slowly, raise the stage until you see the meniscus of the oil on the specimen come in contact with the tip of the 100X objective. Now go to the eyepieces and observe as you finish focusing with the fine focus knob. You can make small lateral slide movements with the immersion oil on the slide.
5. When you have completed your observations using the immersion oil, slowly lower the stage with the coarse focus knob until the 100X lens is out of contact with the oil and rotate the objective right or left so a shorter lens, the 4X clicks into position. **DO NOT rotate the 40X objective through the oil!!!**
6. Remove the slide and wipe the excess oil off the slide and the tip of the 100X objective with lens tissue moistened with ethanol (use bottle marked lens cleaner).

OLYMPUS MODEL CH 30, COMPOUND MICROSCOPE

