

## DARK FIELD

This particular type of condenser was developed by Abbey, one of the greatest optical scientists of all time.

It is used chiefly for visualization of organisms and spirochetes that are invisible with the standard source of transmitted light. The angle of refraction of this condenser is so arranged that no light of the illuminating unit penetrates directly into the objective lens. In this manner the object under observation is illuminated from the side at a forty-five degree angle, and the results obtained is that the objects themselves appear as a brilliant silver particle on the velvety black field of the microscope.

It is only with this devise we are enabled to see many of the forms of bacteria and spirochetes without destroying their activity and movements by certain types of acid and analin (?) dye stains, thus allowing us to visualize them in their natural living state.

The dark field is also used to a decided advantage on the principle of the slit ultralluminator, which will be explained in detail elsewhere. We have in our laboratory all of the dark field condensers constructed of block crystal quartz. This having <sup>the</sup> a decided advantage of a much higher and intense illumination, owing to the fact that quartz has upward of 30% greater volumetric light passage than standard optical glass. All of these condensers of this type carry a numerical aperture above 1/40.