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# SCIENCE NEWS LETTER



®

THE WEEKLY SUMMARY OF CURRENT SCIENCE



**Forest Tragedy**

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A SCIENCE SERVICE PUBLICATION

# WHAT'S NEW IN MICROSCOPY?

## UNITRON Phase Microscopes, of Course!

### Phase microscopy in the news

The lead article in the November 14, 1953 issue of SCIENCE NEWS LETTER reported that Dr. F. Zernike had been awarded the Nobel Prize in physics for his development of the phase microscope. We think that it is also news when this latest development in microscopy is made available at a price within the reach of every school and laboratory. The phase microscope is so relatively new and the conventional phase instruments so expensive, that real familiarity has been largely limited to an inner circle of zoologists for whom the phase microscope is an absolute necessity. This is an unfortunate situation since phase microscopy has an equally wide application in large areas of industrial research, in routine medical and laboratory testing, and in the student laboratory.

### Phase microscopy in a nutshell

Briefly stated, the phase microscope permits the examination of thin, transparent specimens whose structural details vary only slightly in thickness, absorption, and refractive index from their surrounding medium. With the ordinary "bright field" microscope, such specimens must be stained in order to introduce contrast and detail. Aside from requiring skill and laborious preparation, staining techniques produce a physical distortion of the object and involve the death of living specimens. For the zoologist the importance of the phase microscope lies in its ability to show activities in the *living* cell.

### Phase contrast for \$99

To those acquainted with the cost of conventional phase microscopes and unacquainted with the new UNITRON Phase Microscopes, it will see that the above section heading is a joke. But it's true—we have a *complete* student phase microscope with 3 objectives and 2 eyepieces, magnifying 32-600X, available for as little as \$99. We are rather proud of the report on this instrument given by Professor Julian Corrington in *Nature Magazine*. In his column, "Under the Microscope," he states: "Our first reaction on reading advertising material describing phase-contrast microscopes in the lower price brackets was one of scepticism . . . However, we were willing to be shown, and ordered a UNITRON research phase-contrast model MPE, at \$265 and found it completely satisfactory. Being further intrigued by the seemingly-

impossible claims of this organization for their \$99 model MPEA, we explored further and have been using this incredibly cheap instrument on cultures of living amoeba and paramecium, as well as on other materials, both fresh and stained. The results have been remarkable. Living protozoa are seen as never possible by ordinary bright-field; cellular details, as trichocysts, cilia, gullet, membranelles, appear as clearly or more so than on stained slides, and are seen in action in the living animal . . . Now, for the first time, this equipment, the most important development in light microscopy since oil-immersion objectives, is within the reach of the amateur, the high school, and the college freshman laboratory."

### Research model within your budget

The advanced worker who needs oil immersion will be more interested in our research model MPE, which gives magnifications from 50-1500X. This comes complete *with* 3 objectives, 3 eyepieces, mechanical stage, etc., and *without* focusing telescope and substage turret changer. Readers who have used phase microscopes will recognize the "without" items as the curse of the conventional phase instrument in which it is necessary to align phase diaphragms with every change of objective. In UNITRON Model MPE, changing objectives merely involves adjusting the height of the substage condenser as indicated by a scale on the microscope stand. Furthermore, as the height of the condenser is varied, there is a *continuous* transition from bright field to phase contrast. The intermediate positions offer useful types of contrasts which contribute toward a complete picture of the specimen. The price of this complete instrument is only \$265—less than *half* the cost of the *accessories* needed to adapt an equivalent bright field microscope for phase work.

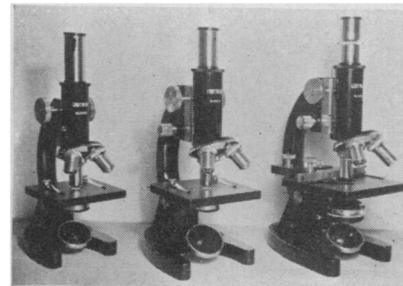
### Who's who

We are rather proud that so many distinguished universities and research organizations from all parts of the country have chosen UNITRON Phase Microscopes for

their laboratories. These include Harvard, Cornell, M.I.T., Bowdoin, Bates, Temple, B.U., Tufts, the Universities of Michigan, Illinois, Arkansas, Nebraska, Buffalo, Miami, Missouri, Houston, Tennessee, the Sterling-Winthrop Research Institute, Parke, Davis and Co., the Detroit Institute of Cancer Research, the Brooklyn Hospital, the Presbyterian Hospital of Chicago, the U.S. Army, etc., etc. The departments requisitioning these instruments range from A to Z (Anatomy to Zoology) and include physiology, entomology, medicine, ophthalmology, botany, textiles, industrial health and the all-inclusive "research." We confidently predict that UNITRON Phase Microscope will gradually replace old-fashioned, ordinary bright-field microscopes in biological and medical laboratories.

### Further details

There are four UNITRON Phase Models (even a portable model), and our catalog sheet illustrates and describes them all. This



informative literature also gives information on the *four contrasts* which are available, as well as details on applications of the phase microscope. If you are interested in the theoretical principles involved in the optical design of the new UNITRON Phase Microscopes, and the resulting advantages over the conventional phase microscopes, we'll be glad to include a technical bulletin on the subject. All of this literature is yours for the asking. We shall probably take advantage of the opportunity to include a catalog on some of our other new instruments, so if you are interested in microscopy, we think you will find it worth while to write for further information.

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