

A method of light microscopy in which two objective lenses are used for simultaneous viewing of opposite sides of the same specimen is described by M. Malý and P. Veselý. Each lens serves as a condenser for the other. Different magnifications, focal levels, or contrast modes can be used simultaneously. For example, locomotion of cells can be observed at low magnification while details of a cell are viewed at high magnification, or both the upper and the lower surfaces of a cell can be viewed at the same time. (J. Microsc. 117:411-416)

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An average of 12.5% of the aerobic bacteria in 114 samples of raw milk were resistant to one or more of seven antibiotics: penicillin, ampicillin, chloramphenicol, neomycin sulfate, polymyxin B sulfate, tetracycline, and streptomycin sulfate. The percentage of antibiotic-resistant bacteria in individual samples of milk ranged from 0 to 100%, report L. Hankin and associates. A significant negative correlation between the total aerobic count and the number of groups of antibiotic-resistant bacteria was noted in samples with more than 5-10% resistant bacteria. Some antibiotic-resistant strains transferred their resistance to *Escherichia coli*. (J. Food Prot. 42:950-953)

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Using a computer, I. R. Hall and B. J. Fish prepared a dichotomous key to taxa of Endogonaceae. The taxa, both formally described and not yet formally described, are components of vesicular-arbuscular mycorrhizae. The key will be updated as new taxa are described and existing taxa are characterized more fully. (Trans. Br. Mycol. Soc. 73:261-270)

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Vesicular-arbuscular (VA) mycorrhizae formed on onion by *Glomus etunicatus* enhanced transfer of carbon between plants growing close to each other, according to M. C. Hirrel and J. W. Gerdemann. Carbon transfer, measured as ¹⁴C activity, between donor and recipient plants was highest when recipient plants were unshaded. Activity of ¹⁴C was greatest in roots of unshaded recipient mycorrhizal plants. Apparently, roots of plants may be interconnected by VA mycorrhizae, and carbon may be transferred by way of mycorrhizae by several possible mechanisms. (New Phytol. 83:731-738)

Plasmids of molecular weight 90-350 × 10⁶ Daltons in certain *Rhizobium* strains have been implicated in the genetics of symbiosis and possibly even of nodulation, report M. P. Nuti and co-workers. Evidence that at least some of the genes for nitrogen fixation in *Rhizobium* are plasmid-borne and that *Rhizobium* plasmid DNA contains sequences homologous to part of the structural genes for nitrogenase in *Klebsiella pneumoniae* was obtained through hybridization between restriction fragments of plasmid DNA from *R. leguminosarum* and the DNA-encoding part of the structural genes for nitrogenase in *K. pneumoniae*. (Nature 282:533-534)

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Field workers, especially those in tropical areas, often need a simple method to purify drinking water. W. L. Culberson describes a method of iodination that is totally effective against waterborne viruses and microorganisms. Crystalline, USP-grade, resublimed iodine (4-8 g) is placed in a 1-oz, thick-walled, clear glass bottle with a leakproof Bakelite cap. The bottle is filled with water, shaken for 30-60 sec, and allowed to stand. The solution (not the crystals) is then used to purify water. The addition of 12.5 ml of solution to 1 L of water at 25 C purifies the water in 15 min. About 20 ml of iodine solution should be used for water near freezing. (Syst. Bot. 1:194)

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The bacterium responsible for Pierce's disease in grapevines is carried in the foregut of its leafhopper vector, *Graphocephala atropunctata*, according to A. H. Purcell, A. H. Finlay, and D. L. McLean of the University of California at Berkeley and Davis. Their work indicates that the bacterium multiplies in the foregut but is noncirculative in the insect. They suggest that bacteria are egested through the food canal into the plant by a pumping action and an associated liquid flow that occurs when the insect feeds on its host plant. (Science 206:839-841)

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Aqueous sprays of spores of the entomopathogenic fungus *Verticillium lecanii* consistently controlled the aphid *Myzus persicae* on chrysanthemums in glasshouses. Control of the aphids *Brachycaudus helichrysi* and *Macrosiphoniella sanborni* was not as satisfactory. All three aphids were susceptible to the pathogen in laboratory assays, report

R. A. Hall and H. D. Burges. Because control probably depends on adequate humidity for the fungus, the method should work in large commercial glasshouses with sufficiently high humidity. (Ann. Appl. Biol. 93:235-246)

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Large soil animals (earthworms, millipedes, termites, beetles) were practically nonexistent in regularly cultivated soil in the Western Australia wheat belt but were present in relatively high numbers in virgin soil and soil not cultivated for 7 yr. With one exception, cultivated soils were more compact and less permeable to water than virgin and uncultivated soils, report I. Abbott and associates. Possibly, regular cultivation renders soil unsuitable for the soil animals, whose cavities and burrows enhance soil friability and water infiltration. (Aust. J. Soil Res. 17:343-353)

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An approach to measure crop losses has been tested with wheat on York Peninsula in South Australia, to determine the relative importance of physical and chemical soil properties in the study area. Numerous soil properties, such as texture, bulk density, water content at -0.1 and -15 bars, salinity, and pH, were measured. Complex sets of data were simplified into natural subsets for analysis by multivariate statistical procedures, and regression models were constructed. According to B. A. Stynes and associates, a relatively few key soil properties were responsible for most of the crop variabilities. (Aust. J. Soil Res. 17:217-225)

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How to store fungi under laboratory conditions is a common problem among plant pathologists and mycologists. One simple method, according to J. J. Ellis, is to place small cubes from an agar culture into a few milliliters of sterile water in screw-top vials and store at 25 C. Of 52 species in 38 genera so processed and stored, 34 representing several taxonomic groups lived the full 29 mo of the study. (Mycologia 71:1072-1075)

Recent reports from fields related to plant pathology for inclusion in *Scientific News* may be sent to R. James Cook, 367 Johnson Hall, Washington State University, Pullman, WA 99164.