New theory in

ADHESIVES FOR WOOD
The most effective adhesives for wood joints have a moisture content between 8% and 12%. Apparently a monomolecular layer of water between the wood and the adhesive is necessary to provide the adhesive force, through hydrogen bonds. To correlate other factors with the new theory, an extensive microscopic study of glue joints in wood is being made. Research is directed to the various stresses and to the importance of such other factors as penetration of adhesives, surface texture and density, and surface damage before gluing.—J. E. Marian, Forest Products Laboratory, Berkeley.

Search for chemicals to kill

FUNGI IN SOIL
without injury to crop plants
Of approximately 2,000 chemical compounds tested as soil fungicides, not more than 10 warranted additional investigations in a systematic search for a safe, effective fungicide harmless to crop plants. One of the 10 promising compounds, Terrclor, has effectively controlled root rot of beans and a limited number of other plant diseases.

Research on one of the dithiocarbamate fungicides shows that it kills soil fungi by first destroying their protective cell walls.—J. B. Kendrick, Jr., Dept. of Plant Pathology, Riverside.

New process produces

FLOR-TYPE SHERRY
in less than six weeks
A new type of wine of distinctive character similar to that of Spanish sherry can be produced in less than six weeks instead of the several years required to make Spanish sherry by traditional methods.

The wines produced by the rapid process developed at Davis are not identical with Spanish, or flor-type, sherry but can be blended to make a distinctive wine. Also, the new wine can be blended with California baked-type sherries for improvement in quality.

Pilot scale experiments with the new rapid process, conducted by commercial vintners, have been successful in lots as large as 500 gallons.—C. S. Ough and M. A. Amerine, Dept. of Viticulture and Enology, Davis.

Effect of length of photoperiod on

GRAPEFRUIT SEEDLINGS
A night light of low intensity supplementary to eight hours of daytime illumination aided experimental grapefruit seedlings to grow considerably more than similar seedlings kept dark at night. The same response was found whether temperature conditions were normal—warm for eight daytime hours and cooler for 16 nighttime hours—or the reverse—cool for eight daytime hours and warm for the other 16 hours.—Harry C. Kohl, Jr., Dept. of Floriculture and Ornamental Horticulture, Los Angeles.

Nematodes in

VINEYARDS
Crop rotation and land management practices are included in long-term field experiments to find means of establishing thrifty, productive vines in nematode-infested land.

Chemical fumigation of the soil, tested for 10 years, alters the soil environment, and resulting conditions are favorable for the rapid multiplication of the few nematodes —especially root-knot and root-lesion nematodes—that survive chemical treatments. Therefore the study is continuing on nematode life cycles, needs, weaknesses, and limitations and on their distribution in all growing areas.—D. J. Raski, Dept. of Plant Nematology, Davis.

Parasites of the

WALNUT HUSK FLY
found on black walnut trees
The first known parasites of the walnut husk fly—previously thought to be free of parasitic enemies—were found in southeastern Arizona in July, 1959, when two species were found on the foliage of black walnut trees at the Southwestern Research Station of the American Museum of Natural History. An adult female parasite was seen to oviposit in the husk of a larvae infested walnut. Later, an egg of the parasite was dissected from a larva of the husk fly. The discovery of the parasites in Arizona presaged revived research in California on the biological control of the walnut husk fly.—S. E. Flanders, Dept. of Biological Control, Riverside.

Pen space for

MARKET SWINE
raised in confinement
Extensive experiments to investigate space requirements—for feeding and sleeping—of market swine raised in pens are being conducted at Davis in cooperation with the United States Department of Agriculture. So overhead costs for pen and barn space can be kept at a minimum per pound of pork produced, the trials are investigating the amount of space required per pig from feeder age to market weight and the effect of numbers of pigs per pen. The studies are testing space allotments of 5, 10 and 20 square feet per pig and pig concentrations of 5, 6, and 12 per pen.—Hubert Heitman, Jr., Dept. of Animal Husbandry, Davis.

Problem of reinfestation by

APPLE APHID
subject of three-phase study
A suitable systemic insecticide that will remain effective against reinfestation during the summer; proper timing of treatments to avoid economic damage; and the identification of host plants from which the winged forms of the apple aphid migrate and reinfest adjacent orchards, comprise a three-phase research program on the apple aphid.—Harold F. Madsen, Dept. of Entomology and Parasitology, Berkeley.