

BOTANY

Better Hybrids Possible

Pollen-sterile plants have now been developed by special breeding. These plants may be used for hybrid production with other desirable plants.

► **BETTER QUALITY** and bigger yields of onions, beets, carrots, rye, celery, swiss chard and many kinds of flowers will soon be available through a new sterile pollen method of producing hybrid seed.

W. H. Gabelman, University of Wisconsin horticulturist, reported to the American Institute of the Biological Sciences meeting in Madison, Wis., that pollen-sterile plants have been developed by special breeding. They are being used for hybrid production in plants not capable of being detasseled as in the case of corn.

When the seed parent plant develops sterile pollen, as can be caused now in some plants, the male element can be furnished by nearby plants that it is desired to cross-breed to create the bigger and better yields and quality.

The first hybrids by the new method to be available will be sweet corn, onions, beets, carrots and petunia.

Such plants as beans, tomatoes, peppers, peas, lettuce and wheat which are self-pollinated probably will never be hybridized in this way.

From Mexico where corn has been domesticated for thousands of years and ears among 25 distinct races range up to two feet in length, native corn varieties have the chance of contributing their heredity to hybrid corn for the United States more productive and more resistant to drought, disease and insects.

Prof. Paul C. Mangelsdorf of Harvard University reported this prospect. Mexico's agriculture is benefiting from intensive study and development of corn since 1943 by the Rockefeller Foundation and the Mexican government. Some Mexican corn races have been hybridized with a wild grass "teosinte" to produce hardier types that are resistant to drought and disease. This hybrid is especially promising for breeding purposes in the United States.

The growth-regulating chemical, maleic hydrazide, is being used to produce hybrid grain sorghum of superior qualities. Prof. Wayne J. McIlrath, University of Chicago botanist, predicted that if chemically suppressing the male flowers is successful an increase in production of sorghum as great as or greater than the success achieved in hybrid corn should be possible. The chemical sterilizes the pollen of the plant. Sorghum is as important a crop as barley.

Plasters or pastes of needed chemicals can be applied to fruit trees on their trunks and branches to give them food or to remedy nutritional deficiencies, such as zinc and magnesium. The idea of fertilizing

by applications to scraped bark, first used a century and a half ago, has been demonstrated effective in special cases by Drs. R. L. Ticknor, H. B. Tukey and S. H. Wittwer of Michigan State College. Fertilizers can be applied in this way to sick and wounded trees, winter-injured or undernourished, but this method should only supplement regular fertilizer applications to be picked up by the roots.

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PHYSIOLOGY

Cancer Patient's Red Blood Cells Different

► **RED BLOOD** cells from cancer patients behave differently in their chemical activity than red blood cells from the normal.

This finding was announced by Drs. Allen F. Reid, Richard C. Gilmore Jr., and Margaret C. Robbins of Southwestern Medical School, University of Texas, Dallas, Tex., at the meeting of the American Chemical Society in Chicago.

It is in the handling of inorganic phosphate that the Texas scientists found the difference between the cancer and normal red blood cells.

Using radioactive phosphorus because it could be traced, they found that the red blood cells from cancer patients lost phosphorus at a faster rate than the cells from normal persons.

The studies suggest that normally there is a substance in the blood which checks the loss of phosphate from the red blood cells, and that cancer patients' blood has much less of this substance. The scientists also think that the red blood cells in cancer patients are more sensitive to standard amounts of this substance than normal red blood cells.

Science News Letter, September 19, 1953

PHYSICS

Physical Reports Forecast In British Publication

► **REPORTS OF** scientific discoveries in physics will be forecast in a new publication of the Physical Society, Britain's organization of physics. Each month a booklet containing abstracts of forthcoming papers is issued. Reprints of the papers can also be secured upon special order.

This new technique supplements the time-honored Proceedings which appear monthly in two sections, one devoted to original papers on nuclear, atomic and molecular physics, and the other to original papers on materials and other phenomena.

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FOOD FOR MARINES—*This appetizing meal is the new replacement for the old B ration. Far from monotonous, and containing such treats as chocolate cake and peach cobbler, the new ration nevertheless is composed primarily of canned and dehydrated foods, practical for serving in the field. It supplies more than enough vitamins, minerals and calories for an active man.*