



A Distinguished Family

➤ AMONG PLANTS, as in human society, one frequently finds families that are rich in members having most distinguished and varied capabilities and accomplishments. An outstanding example is familiar to everyone: the legumes, or bean-pea-clover family.

The word "legume" itself is a tribute to the qualities of this family in the kitchen-vegetable field. In French, the word means simply vegetable—any kind of vegetable. When we stop to think of how important in French cuisine such things as beans, peas and lentils are, the shift in meaning as we go over into English does not seem too much of a shift in emphasis, at that.

Legumes do not figure so heavily in the fruit-and-nut market as some other families—their second cousins, the rose family, for example; yet there is the tamarind, highly prized in the tropics, and the peanut, probably the most important nut crop in the world, at least from the economic viewpoint.

When it comes to pasture, hay and feed plants, makers of milk and meat, the legumes really score. Mere mention of names suffices: alfalfa and all the clovers, soybeans and cowpeas, beggar-weed, vetch and lespedeza. For wasted fields in the South, the kudzu vine promises redemption. In the desert, pods of shrub or small-tree legumes like the mesquite of our own Southwest and the St. John's bread of the Near East afford the cattle something to chew on, and shade in which to stand while they chew.

For the flower garden and lawn there is a wealth of leguminous beauty, ranging from herbs through shrubs and vines to fine flowering trees: sweet pea, lupine, mimosa or sensitive-plant, amorpha or lead-plant, Wistaria, laburnum, acacia,

sophora, black locust and honey locust. The tree species yield good timber too, and to this must be added some of the choicest of tropical woods, like red sandalwood, African barwood and American ebony. Nor should we forget that all these flowers, and in particular the locusts, are also rich sources of well-flavored honey.

Mention of products such as oils, gums, dyes and drugs conjures up exotic pictures of far-off deserts and jungles, and swarthy men dickering in odorous bazaars. We need not go so far, really:

most important vegetable oils of leguminous origin are produced right here at home, from soybeans and peanuts. However, we are able to breathe our share of perfumed and spiced romance from such legume-names as copal, gum arabic, gum of Peru, gum tragacanth, licorice, tonga-bean, and tolu.

The latter, curiously enough, has given a name to one of the most thundering manifestations of these warlike days. For from this tree balsam was first extracted, more than a century ago, the oily substance known as toluol, now



Such an increase in light transmission now means an image 50% brighter. It also means reduced internal reflections and consequent flare—contrast sharpened. And this can mean, in many cases, to the observer with binocular glued to his eyes, the difference between a blank wall and a clearly defined silhouette of an enemy vessel or plane.

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far more abundantly obtained from petroleum and coal tar. And toluol, thrice wedded to the nitrate group, becomes trinitrotoluol—or for short, TNT.

Science News Letter, July 1, 1944

GEOGRAPHY

Independence Day, 1944, Takes Flag to Far Places

See Front Cover

► THIS YEAR, July 4th doesn't mean a holiday and fire-crackers, and picnics, but the flag is being raised in more parts of the world than ever before. In the past few weeks, our flag has been flying on the shores of France. Over there, the 4th will be just another day of hard fighting for the democratic ideals behind the Stars and Stripes. The holiday and picnics will have to wait for another year. Here at home, it will be a day of work and bond buying so that we may be one day nearer to victory and a new Independence Day for all the United Nations.

The official U. S. Navy photograph on this SCIENCE NEWS LETTER shows the flag on a landing craft in the South Pacific, flying over the men who fought for it in a recent victory.

Science News Letter, July 1, 1944

INVENTION

Decoy Plane To Fool Enemy Is Subject of Patent

► A REALISTIC-LOOKING decoy plane, guaranteed to fool enemy observers into sending their bombers on literal wild-goose chases, is the invention offered by Jack Weisbaum of Cincinnati for patent 2,351,891. To save bulk in transportation, the fuselage is made collapsible, like an accordion, with a supporting internal framework built on the lazy-tongs principle.

Science News Letter, July 1, 1944

PUBLIC HEALTH

Caffeine May Cause Ulcers

Those whose favorite early morning eye-opener is black coffee, should watch the number of cups they drink. Five cups a day is considered excessive.

► THE BLACK coffee which is a favorite early morning eye-opener for many Americans and the popular caffeine-containing carbonated beverages which many more take for between meal pick-ups are bad medicine for the one out of ten in the population who have stomach ulcers or are ulcer-susceptible. Excessive use of caffeine may help to cause ulcers in these susceptible persons.

Scientific evidence for this was presented by Dr. J. A. Roth, Dr. A. C. Ivy and Dr. A. J. Atkinson, of Northwestern University Medical School at the meeting of the American Medical Association.

Caffeine, they found, stimulates production of strongly acid stomach juices rich in pepsin. In normal persons this stimulation of stomach acid output is abrupt but transient. In ulcer patients and those susceptible to stomach ulcer, the effect is prolonged. The difference is so marked that caffeine can be used to help diagnose stomach ulcer and to detect ulcer susceptibility. The test is made with a test meal of caffeine in water equivalent to two cups of coffee.

Implantation of caffeine in the muscles of cats produced stomach ulcers in 40% to 50% of the animals.

Excessive caffeine users, in Dr. Roth's opinion, are those who drink more than five cups of coffee a day and especially those who take coffee or caffeine-containing beverages between meals frequently. Coffee taken with cream and sugar or with meals is less harmful because the cream or other food acts as a buffer against it.

On a score taking coffee as 100 in

stimulating stomach acid secretion, a popular carbonated caffeine-containing beverage rated 90, tea 60, coffee with cream and sugar between 59 and 60, a cereal beverage almost the same and a decaffeinated coffee between 75 and 76. The stimulating effect of these last two was due to substances other than caffeine.

The caffeine-stimulating effect that causes trouble for ulcer patients is not the same as the stimulating effect that causes wakefulness. The latter is due to caffeine's action on the brain and central nervous system, but the effect on the stomach, Dr. Roth believes, is directly on the cells that line the stomach.

In the cats the stomach lining showed diffuse areas of peeling and bleeding erosion, which led Dr. Roth to call this effect of caffeine a cell poisoning.

Science News Letter, July 1, 1944

ENGINEERING

Long-Distance Bursts Cause FM Interference

► STRANGE long-distance bursts causing interference in high frequency bands, including those assigned to FM broadcasting, have been discovered by the Federal Communications Commission.

A "burst" is defined as a sharp increase in signal strength of momentary duration, seldom covering more time than is necessary to speak a single word or to play a note or two of music. They may occur at the rate of several hundred an hour.

The bursts are not observed near FM stations, under normal conditions. They usually are picked up by receiving sets a considerable distance from the FM transmitter. Bursts have been observed at distances up to 1,400 miles from certain highpowered FM stations, but are neither so intense nor so numerous as they are at distances of 300 to 700 miles.

For several months FCC engineers have been conducting tests to determine the nature and extent of the interference. The FCC is not ready yet to make a statement as to the cause of the bursts, but research is continuing in the field, and a report may be made available soon.

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