

# Questions

**ASTRONOMY**—Of what does Saturn's atmosphere mainly consist? p. 202.

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**BIOCHEMISTRY**—How many chemicals are needed to digest fat? p. 200.

• • •

**CHEMISTRY**—What is the fundamental pattern of most protein materials? p. 203.

What fission products tell that an A-bomb has been exploded? p. 198.

• • •

**DENTISTRY**—How are present tooth decay theories too simple? p. 196.

• • •

**MEDICINE**—How are war victims of most nations now being helped? p. 205.

• • •

**PUBLIC HEALTH**—Why should men over 35 have chest X-rays regularly? p. 196.

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## AGRICULTURE

# Bigger Corn Crop

► **CHEMICAL WEED** killers should be used by the nation's farmers to produce corn efficiently and economically, Dr. Roy L. Lovvorn, head of weed control research in the U. S. Department of Agriculture, said.

Use of the weed killer 2,4-D just before and shortly after corn plants emerge, plus a final spraying after lay-by reduces the number of cultivations needed and actually increases the crop yields, Dr. Lovvorn said.

Chemical control of weeds without further cultivation has increased yields on experimental fields as much as 10 to 40 bushels of corn an acre at a cost of only \$2.25 an acre for all three sprays.

In most areas and soils, Dr. Lovvorn said, pre-emergence treatment of one to two pounds of pure 2,4-D will control annual grasses and some broadleaved weeds. Other broadleaved weeds in corn can be controlled by sprays of one-quarter-pound of 2,4-D ester, or one-half pound of amine salts of 2,4-D, per acre about one week after the young corn leaves unfold.

Corn on certain soils produces better with cultivation even when no weeds are present. A Fox silt loam on an experimental field produced 39 bushels of corn with no weed control; 80 bushels with weed killers but no cultivation; and 101 bushels with chemical treatment and three cultivations.

On another soil, however, Genesee silt loam, 87 bushels came from an unweeded

## BIOCHEMISTRY

# Control Skin Color

► **TWO DRUGS** are being used to control skin color in humans and to correct blemishes such as over-pigmented spots or the milky-colored spots that occur in the disease, vitiligo.

The drugs are the monobenzylolether of hydroquinone and a new one called psoralens. Their use to control skin color was announced by the American Cancer Society which supports the work of the scientists, Drs. A. Bunsen Lerner and Thomas B. Fitzpatrick of the University of Oregon Medical School.

Object of their research is to learn the processes which produce albinism, disfiguring birthmarks, the colors associated with many diseases and the deadly pigmented cancer called melanoma.

The scientists have found that skin color is affected by many factors including diet, sunlight, hormones and aging.

The scientists and their co-workers are engaged in three separate types of pigmentation studies. They 1. attempt to change the pigmentation of patient's skin—no hormones are involved, 2. try to change the color of frog skins with hormone preparations, and 3. incubate skin from humans

with various chemicals in order to study the action of the cells in the pigmentation process.

They can color and decolor isolated frog skin at will by what appears to be duplication of the body's actual chemistry. Some of the tests on living animals confirm the chemical observations on isolated skin and tissue extracts.

They have traced several of the chemical steps in the body's formation of melanin, the natural compound which gives color to the skin, hair and eyes, and they are attempting to produce chemicals which interfere with its production.

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## CHEMISTRY

# Inulin Puts Tang in Tequila and Pulque

► **INULIN PUTS** the tang in tequila, Dr. Marcial Ibarra of the National University of Mexico reported to the American Chemical Society meeting in Los Angeles.

Eight different species of the agave plant were studied by Dr. Ibarra and his associates. This plant furnishes the pulp from which the two Mexican beverages, pulque and tequila, are made. Several strains of the yeasts used in their fermentation were determined, and the fermentation of the "aguamiel" and other processes described.

Unlike corn, rye, potatoes and other sources of fermented and distilled liquors, the agave has inulin instead of starch, Dr. Ibarra finds. This is fermented to alcohol. Very small amounts of fermentable sugar are present, mostly fructose. So little nitrogenous material is present that Dr. Ibarra's group had to add salts of ammonia to nourish the yeasts with which they experimented.

The source of the higher alcohols which give tequila part of its distinctive flavor is still somewhat of a mystery. The Mexican scientists report that they do not come from the small amount of amino acids in the fermentable juice.

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field; 111 bushels with chemical control alone; and no further increase with chemicals plus cultivation.

Hybrids and varieties of corn vary in their tolerance of 2,4-D, but are generally resistant under recommended amounts of spray. Inbred lines and corn from single-cross seed are more susceptible to 2,4-D, Dr. Lovvorn said, and should be sprayed only in an emergency unless their tolerance has been proved.

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## SOCIOLOGY

# Monopoly Shows It Has Advantages

► **A SOCIOLOGIST** at the University of Wisconsin says he has laboratory proof for the truth of the old saying, "The rich get richer and the poor get poorer."

The sociologist is Lyle Shannon. His proof came from the parlor game, Monopoly, rigged to give one player cash and property advantages over the other three. In addition, the fourth player was subjected to restrictions like "covenants and similar forms of discrimination against non-Caucasians."

Details and results of the experiment are reported in *Social Forces*.

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