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Questions

BIOLOGY—With what plant form does man share a common ancestry, according to one scientist's theory? p. 4.

MEDICINE—What serves as the two electrodes in the "capacitance heart sound pickup"? p. 3.

PHYSICAL CHEMISTRY—What chemical compounds were used in experiments that may lead to a sun-powered chemical battery? p. 6.

Photographs: Cover, University of Illinois; p. 3, General Motors Corporation; p. 6, General Dynamics Corporation, Convair Division; p. 7, General Electric Company; p. 10, U. S. Navy; p. 16, Bakelite Company.

ENGINEERING

Radio Direction Finder Will Study Ionosphere

See Front Cover

► **PROBLEMS** in radio direction finding, including deflection of signals by the ionosphere, will be studied with a very large radio direction finder now being built at the University of Illinois.

The photograph on the cover of this week's **SCIENCE NEWS LETTER** shows the circle of 120 poles, each 65 feet high, the first step in the direction finder's construction.

The poles will support a radio-reflecting screen 955 feet in diameter; buried wires of a ground mat extend the diameter to 1,300 feet.

Radio direction finders can be used to study the ionosphere, a radio-reflecting layer in the upper atmosphere that often causes signals to deviate from the most direct line.

Edgar C. Hayden directs the project, sponsored by the Navy Bureau of Ships. The finder was designed jointly by engineers at the University and at the Federal Telecommunications Laboratory.

Science News Letter, January 4, 1958

MINING

Uranium Refining Process Perfected

► A **STANDARD** process for extracting uranium from its ores has been perfected to the point of 99.99% recovery of the vital metal.

Perfection of the liquid-liquid extraction process was reported to the American Institute of Chemical Engineers meeting in Chicago by D. S. Arnold, B. G. Ryle and J. O. Davis, scientists of the National Lead Co., Cincinnati.

In separating the uranium from clay, rocks and metals that make up the ore, the aggregate is first dissolved in acids. In the perfected system an organic solvent, tributyl phosphate-kerosine, is next added to extract the uranium. The scientists believe the process may also be adapted to extract other materials.

Science News Letter, January 4, 1958

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