

AGRICULTURE

Tractors Fight India Weed

➤ A GREAT battle, with American heavy tractors, to free 3,000,000 acres of land from the strangle-hold of a gigantic weed-grass, promises to save millions of India's teeming population from starvation.

That's what India's \$10,000,000 World Bank loan is to be used for. In the never-ending war on hunger, it will be used to launch a seven-year campaign against the rampant plant pest called kans grass that renders a huge acreage in central India unfit for agriculture.

Kans grass, a prolific plant, is as thick around as the butt end of a billiard cue and puts down roots as deep as seven feet into the soil. Indian plows are unable to budge it. The only way to kill it is to pull it up by the roots and expose them to the sun. For this muscular job India is buying 345 American heavy tractors.

Indian agricultural experts believe that with the aid of this modern equipment the death-grip of kans will be broken. Like the American assault on the hedgerows of Normandy in the invasion of Europe, they will have to root out the deeply-entrenched

enemy field by field. After each skirmish, the dead plants will be hauled away, and the field will be immediately put to the plow. Spurred by the shadow of famine across their land, the Indians can not afford to lose time. As each field is cleared and plowed, wheat will be planted.

It will take seven years to rout kans grass from this huge potential breadbasket. When the campaign is over, India will turn her heavy tractors loose on the remaining millions of acres of farm land still occupied by kans grass. But that's for the future. This is a limited operation with limited objectives. But even on this limited scale the yield in food should go a long way to lessen the fearful pinch of hunger.

From the farmland which they expect to wrest from the grip of kans grass, in the first seven years alone they expect to garner 5,200,000 tons of wheat. Huge though this quantity is, India will still have to import large quantities of foreign grain. But with victory over kans grass, victory over hunger will be in sight.

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PHYSICS

Sun Future Energy Source

➤ THE sun, not the atom, may be the principal source of power for the world in future days, it was predicted at a meeting of the American Institute of Electrical Engineers in Dallas, Texas, by Frank R. Benedict of Westinghouse Electric Corporation, Pittsburgh.

Solar energy, he said, holds promise of supplementing our dwindling supply of coal, oil and natural gas, and may ultimately meet all the needs for power. It is common belief that in atomic disintegration we have an untapped source of practically inexhaustible energy, he continued, but this is not true. Limited amounts of the two fissionable elements, uranium and thorium, will control the broad scale applications of atomic power.

It seems very unlikely that atomic power will ever supply any large proportion of our total energy requirement, he asserted.

While "unrenewable" sources of energy such as coal, gas and oil now are our principal power sources, they can continue to provide all energy requirements for only another 100 to 300 years. Beyond that, the "continuous" sources, such as the sun's radiation, vegetation growth and waterfalls, offer chief hope.

To harness this energy, scientists still must devise means of capturing energy now lost when the sun's rays are reflected off the earth's surface. They also have to find out how to increase the amount of solar energy converted by the earth into

combustible materials such as wood, and the amount converted in the waters of the earth, causing water evaporation.

The water of our earth absorbs much of the sun's energy falling upon it. Most of the energy expended in evaporation is not recoverable. But the amount of energy that is theoretically recoverable is about 54 times our total energy requirements.

The engineer's dream, he stated, is the direct conversion of the sun's radiation into electrical energy. Along these lines, intensive research aimed at photo-chemistry, thermo-electricity and photo-electricity is now under way at Massachusetts Institute of Technology and other institutions.

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PHYSICS

Geiger Counters Measure Depth of Snow

➤ GEIGER counters are now being used to measure snow depths in Western mountains.

This technique was reported by Walter Wilson of the U. S. Weather Bureau at a symposium on mass and heat transfer from snow, lakes and ground surfaces held at the University of California at Los Angeles.

Actually the snow itself is not radioactive, but a bit of radioactive cobalt placed beneath it is. By recording how much the

clicking of the Geiger counter decreases or increases, the depth of the snow bank can be accurately determined.

Mr. Wilson, a member of the Weather Bureau's snow-investigating team which worked last winter in the High Sierra, said that the Geiger counter technique was the most successful of six methods of measurement employed.

Snow was an important item on the agenda of the two-day conference, sponsored by the U.C.L.A. engineering department. This was because, as Mr. Wilson indicated, mountain snow packs are the "primary sources" of Western rivers which supply many Pacific Coast cities with water.

The need for increasingly accurate methods of measuring evaporation and run-off was stressed. Without more accuracy in this respect, prediction of available water supply for Western cities is an uncertain affair, he pointed out.

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MINING

Synthetic Liquid Fuel Production Areas Sought

➤ MANY areas in the United States are suitable for plants for the manufacture of synthetic liquid fuel from coal, oil shale or natural gas as a raw material, recent surveys under government sponsorship show.

Desirable areas, in addition to the necessary raw material, must have plenty of water for plants of large capacity. If coal is the raw material, it should not be types of good coking quality because these are more valuable for other purposes.

Sample surveys already made cover portions of four states. These areas are in western Kentucky, where strip and underground coal are available; northeastern Colorado, with both oil shale and coal; southeastern Texas, with natural gas; and southeastern Montana with strip coal. No efforts were made in these surveys to select specific sites for plant construction. The objective was to determine general areas where all plant requirements can be met.

The surveys were made by the Army Corps of Engineers and by a commercial firm. This group, Ford, Bacon and Davis, Inc., of New York, has been awarded a contract for a nation-wide survey. Summary reports of the four surveys have been compiled by the Corps of Engineers and issued by the U. S. Bureau of Mines.

For detailed study and comparison, general areas within each of the four sample survey states were examined critically with reference to eight major factors, according to Dr. James Boyd, director of the Bureau of Mines. These include raw materials, water supply, power supply, access transportation, labor and housing, marketing, waste disposal facilities, and strategic considerations.

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