



Short-Lived: Many-Seeded

OUR DAILY bread is made from the seeds of a few species of grass: wheat, rye, barley, oats; in the New World corn, in southeast Asia rice; in Africa and some parts of Asia the millets. Diverse in form and manner of growth as they are, they have one thing in common: they are all short-lived, all annuals.

We grow many kinds of perennial plants for use and pleasure. Some of them live for decades, even for centuries, like the carefully kept apple and orange and olive trees in ancient orchards. But for the satisfaction of our most basic needs, we turn to "the grass which perisheth." Why?

Precisely because these grasses do perish. They can provide for the future, can perpetuate their species, only by means of seed. Perennial plants survive in their own individual selves, can throw up new shoots from runners, roots and underground stems, can produce bulbs and other organs of vegetative reproduction. Some of the long-lived species

of bamboo will produce only one crop of seed in thirty years or more, and there are some kinds of bushes that have never been known to bear fruit or seeds.

But the annual plants are going to die when frost comes. Not only that, a large proportion of any crop of seeds is sure to die, frozen or drowned or rotted or denied sprouting moisture by merciless drought. So every successful annual plant bears huge numbers of seeds, far more

than enough to maintain the species at its usual level in the general plant population.

In cultivating the grains and other annual seed crops we take advantage of this prolific tendency. In breeding them for new and improved varieties and strains we do all we can to encourage this trend to bear unusually heavy crops of seeds.

Science News Letter, August 26, 1939

METALLURGY

Nazis Seek Purer Iron Because Steel is Arsenic "Poisoned"

Percentage of Impurity Is Constantly Increasing Due to Repeated Use of Scrap Iron in Germany

GERMANY'S iron, so necessary for armaments, is being slowly "poisoned" by arsenic and that nation thus has a good reason to seek iron ore from other countries.

This is revealed in a letter from a German metallurgist published in the journal of the American Society for Metals, *Metal Progress*.

German ore contains up to 0.20% arsenic as compared to American ores which in most cases show no arsenic. Arsenic is transferred to the pig iron and eventually to the finished steel, writes H. Hougardy of the Deutsche Edelstahlwerke at Krefeld, Germany. He points out that metallurgical processes now in use do not remove arsenic, hence the percentage of the impurity in German steels is constantly increasing due to the re-use of scrap iron, at present in great demand in Germany.

High speed steel, the type used in the all important machine tools, is particularly affected.

"Cutting efficiency is impaired even by small amounts of arsenic," Metallurgist Hougardy writes. "In one type steel, the cutting efficiency is reduced about one fifth."

In soft steel, weldability is greatly impaired by the presence of arsenic. Especially is this true of flame welding where small amounts of the impurity retard welding progress. Presence of greater amounts makes flame welding impossible. This handicap is noted especially with regard to steels for armament construction.

The Hougardy letter has brought comments from American metallurgists and

European observers. Gist of their observations follows:

1. If Germany is forced to rely upon its own ore in time of war or under economic stress, the quality of steel products and fighting equipment produced within the Reich must necessarily be below that of countries having either better ore available for armament construction or facilities for obtaining American steels which are notably higher in efficiency.

2. Germany's assistance to the Franco cause in Spain was motivated to a certain extent by its need for additional and better ore. Though Spanish ore is known for its high sulfur content, it is valuable since sulfur can be removed by known methods—and that sulfur be converted to sulfuric acid. The ore from Spain is comparatively pure after this operation and is thus far superior to the best German ore.

Closer ties with Spain means a second German accomplishment: Cutting off of a fair percentage of Great Britain's ore supply. The British have received a portion of their ore from Spain for many years. Such importations are said to have already begun to decrease since the Franco victory.

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● Earth Trembles

Information collected by Science Service from seismological observatories resulted in the location by the U. S. Coast and Geodetic Survey of the following preliminary epicenters:

Friday, August 11, 9:07.25 p.m., E.S.T.

In the Queen Charlotte Islands in the South Pacific. Latitude, 12 degrees south. Longitude, 168 degrees east.

Saturday, August 12, 4:49.50 a.m., E.S.T.

In the Kurile Islands, north of Japan. Latitude, 45 degrees north. Longitude, 152 degrees east.

Wednesday, August 16, 12:07.0 p.m., E.S.T.

Off the Pacific coast of Guatemala. Latitude, 13 degrees north. Longitude, 91 degrees west. Moderate.

Friday, August 18, 5:16.0 p.m., E.S.T.

In South Pacific ocean, near New Hebrides islands. Latitude, 18 degrees south. Longitude, 168 degrees east (approximately). Strong shock.

For stations cooperating with Science Service, the Coast and Geodetic Survey, and the Jesuit Seismological Association in reporting earthquakes recorded on their seismographs, see SNL June 17.

● RADIO

Dr. Karl F. Meyer, director of the Hooper Foundation, will be the guest scientist on "Adventures in Science" with Watson Davis, director of Science Service, over the coast to coast network of the Columbia Broadcasting System, Monday, September 4, 5:45 EDST, 4:45 EST, 3:45 CST, 2:45 MST, 1:45 PST. Listen in on your local station. Listen in each Monday.