

MINING

Manganese Lack Drastic

Importation of manganese ore from Russia was cut to practically nothing in 1949. Only about 10% self-sufficient, this lack is an Achilles heel in our military might.

➤ NOT enough tanks, not enough guns, not enough armor for aircraft carriers. This is the down-to-earth nightmare which a single item on the suddenly critical "strategic materials" list—the lumpy ore of a metal called manganese—has brought to the men planning national defense speed-up.

Few people outside the government and the steel industry know of a Russian embargo which cut off the U.S. from its major source of manganese more than a year ago—and the desperate efforts which have been taken since then to fill the gap.

Special railroad ore cars were sent to South Africa, transportation experts went to India last year, in the attempt to make up the 350,000-ton annual U.S. import of manganese ore from Russia. This was suddenly cut to a mere trickle early in 1949.

The gap was closed, but this country is still vulnerable, for only about 10% of the manganese needs of the U.S. steel industry can be met by U.S. mines. The rest must be imported over long sea lanes.

There is no substitute for manganese in making steel, particularly the tough alloys needed for modern weapons of war. More manganese goes into steel than any other metal other than iron itself. If the supply were suddenly cut off, American steel furnaces would cool and close down.

Russia is self-sufficient in manganese. The U.S., far from that happy state, has been trying to find ways to boost its own output. We have low-grade ore, but processing it is expensive. Few companies have been able to meet competition of imported ores. The Senate is considering a bill which would aid rapid development of our own deposits.

The U.S. Bureau of Mines last year did a lot of research on ways to recover manganese from the slag piles outside open-hearth furnaces. There is theoretically enough manganese in these waste heaps to make up the amount we formerly imported from Russia, and to make this country 50% self-sufficient.

Government geologists drilled tunnels into hot, dusty, waterless Artillery Peak in Arizona and found vast reserves of manganese. But again they were so low in grade as to be usable only in a real emergency.

If Russian submarines on the high seas were to create that emergency, the steel industry almost immediately would have to delve into U.S. stockpiles (how big these are is a secret). After they are gone, where the steel furnaces would get manganese for artillery and armor is the question now stalking the re-awakened American defense effort.

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top young scientific personnel. A significant proportion of scientific personnel is in the reserves.

Some manpower experts believe that, sooner or later, competition for personnel will have to be stopped and that a new federal agency will have to allocate men and women among all components of our war effort. They point to the lack of a backlog of unemployed, the high level of production and the foreseeably great needs of the military as reasons for believing that it will be sooner rather than later.

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MILITARY SCIENCE

Red-Conquered Korea a Dagger Confronting Japan

➤ IF Korea is completely conquered by Red forces, it will be a dagger pointed at the heart of American-occupied Japan.

History and geography show that Korea is by no means only an out-of-the-way place suitable for a preliminary testing of American strength and reactions. Ever since Japan came out from isolation in the 1860's, Korea has been the subject of a life and death struggle between Russia, China and Japan and the key to control of a vast

GENERAL SCIENCE

Manpower, Pro and Con

➤ PRESIDENT TRUMAN will soon be forced to decide a top-level quarrel between the Pentagon and the National Security Resources Board over the utilization of manpower, Science Service has learned.

Being dragged to his desk for decision are two schools of thought about the draft and the induction of reserve officers. Some influential top brass want as few deferments as possible, not caring whether the nation's laboratories and industries are stripped of precious scientific personnel. Leaders of science and NSRB Chairman Stuart Symington are working to see that skilled manpower is allocated to the job it can do best for the country, whether it be in service, in industry or in university laboratories.

In the opinion of those who are plugging for an all-out view of manpower rather than the Pentagon view, the manpower muddle has become worse instead of better recently.

The following things have happened, or have been prevented from happening:

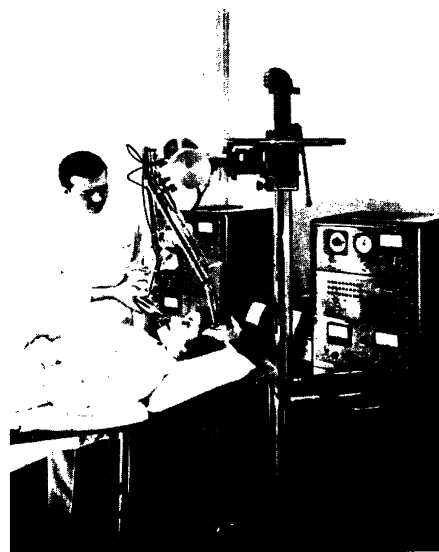
1. A committee of Selective Service that spent the last three years drawing up a program for deferment of those physicists, chemists, biologists and others who would be of more use as civilians has seen its plan shelved until September at least.

2. Only a stop-gap plan to prevent calling up of key scientific personnel who are members of the reserve has been approved.

3. A long-range, overall manpower program being worked out by planners in the National Security Resources Board has been held up by the military.

4. Forces on both sides are preparing to go to the President.

It is even more likely now that many of our great industrial laboratories, upon whom we will depend for new weapons, will be denuded of up to one-third of their



ATOMIC ROBOT—The "Isotron," a weird looking chromium monster with flashing lights and electronic brains, helps to pinpoint brain tumors which have baffled expert diagnosticians. Making skull incisions needless, the patient is simply given an injection of a radioactive isotope. The "tracer" accumulates in the tumor tissue and gives out messages which are received by two Geiger counter arms. Readings are taken at 32 spots and then the evidence is considered.

area of Asia and millions of square miles of Pacific waters.

Willy-nilly, the United States, by occupying Japan, must take over Japan's attitude about Korea. Perhaps one reason we decided to fight the Communists in Korea was that, after five years of responsibility for Japan, we have absorbed Japan's long-held preoccupation with Korea as the key to Asiatic dominance.

Japan and China have fought and intrigued over Korea since recorded history began. In 1592 the Korea Straits, over which our troops in Korea are now being supplied, was the scene of the first of several historic naval battles in waters near Korea. There, after 300,000 Japanese troops had invaded Korea in an attempt to drive out Chinese influence, science defeated the Japanese. A Korean admiral invented the iron-clad ship and used several of them to sever the Japanese supply route and finally to defeat completely the Japanese effort to control Korea.

Today those same straits, little more than 100 miles wide, are the reason for anxious worry on the part of our admirals. Russian submarines and aircraft, based at both Vladivostok and Port Arthur in Manchuria, threaten American supply routes to our beleaguered troops in Korea.

Russia, China and Japan intrigued in a Korea bedeviled by a corrupt, autocratic government until 1894. China put troops in Korea. Japan put more troops in Korea. The Sino-Japanese war which resulted was decided, not by land fighting, but by a naval battle off the mouth of the Yalu River, which divides North Korea from Manchuria. Japan won.

Russia, Germany and France, in a triple intervention, however, wrested the fruits of victory from Japan. This "upstart" eastern nation was upsetting the balances es-

tablished by the western nations in Asia and was threatening to become a world power. Japan was forced to withdraw.

In the next 10 years Japan did emerge as a world power. What happened in Korea became important around the world. Britain signed an alliance with Japan. Japan's power became important as a factor in the pre-World War I relations between the European nations.

In those ten years, the cockpit was Korea. In a series of maneuvers too complicated to report, Russia and Japan contended for supremacy in Korea and Manchuria. The maneuvering led to the Russo-Japanese war of 1904-05 and one of the most decisive naval battles of modern world history—right in the Korean Straits.

Japan won again. She took over Korea completely. This time no alliance of European powers could wrest victory and dominance of Korea and Manchuria from her. This time her victory affected European affairs. Russia was demonstrated to be a weak power—no longer a brake on German ambitions. Japan was a power whose favor was to be sought. As a direct result she was permitted to take the mandated Pacific islands which our troops had to wrest from her in World War II.

In 1934 the contest between Japan and Russia had another test—a test which neither power was able to bring to a final conclusion. There were "border clashes" along the Manchuria-Siberia boundary.

Now, Russia has control of Manchuria and all of China. She has a modern navy, nothing like the two inept fleets which were successively defeated by Japan early in this century. We have replaced Japan as a power in Asia. But the contest is the age-old one—who shall control Korea.

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radiation compass to find the best way out of the area of dangerous radiation.

A wheel similar to the winding stem on a watch provides the electric charge which powers the instrument. The level of radiation would be shown by the speed at which a needle crosses a simple dial.

Radiation is invisible and unfeeling. You can get a bad dose of it, even a killing dose, without knowing you are exposed. In atomic laboratories and A-bomb plants, workers carry photographic films and pocket instruments. But these must be checked by specialists at the end of the day. Other radiation instruments are delicate, complicated and expensive.

"It is conceivable that our armed forces have already developed satisfactory instruments (for civilian defense teams, rescue crews, etc.)," the California scientists say.

"But, for reasons that are not clear, such information is not available to the public. We can only proceed on the assumption that no fully satisfactory instrument for this purpose has so far been developed."

In the AEC report, six types of simple safety instruments for civil defense are listed as under development. None are available yet in any quantity, an AEC spokesman said.

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ENTOMOLOGY

War on Insect Pests Now Nation-Wide

➤ AS many as 35 airplanes a day, every day, are roaring low over Wyoming's grasslands and mountain valleys in an all-out war against the grasshopper.

Desperate Southern cotton growers are using poison dusts to battle billions of boll weevils.

The armyworm has marched over Maryland, Delaware, New Jersey, Pennsylvania and Virginia, and is attacking in Ohio, Oklahoma, Texas and California.

Reports such as these from the Department of Agriculture document the Battle of 1950 against the annual insect infestation, now in full swing.

Latest reports on the most numerous insect pests list the grasshopper, European corn borer, corn earworm, armyworm, alfalfa weevil, red mites, Mexican bean beetle, potato leafhopper, seed-corn maggot, Colorado potato beetle, potato flea beetle, cutworm, tobacco hornworm, boll weevil, cotton leafworm, cotton thrip and the screwworm as causing moderate to heavy damage across the nation.

Harried insect fighters have one comforting thought. It could have been much worse. Spring this year was cold and wet in many areas. Tremendous numbers of insect eggs which survived the warm winter were delayed and often reduced in numbers in hatching.

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PHYSICS

Warning of Radiation

A "dosimeter" will help citizens to recognize dangerous levels of radioactivity and also will aid them in finding the best way out of the dangerous area.

➤ ATOMIC scientists in Pasadena, Calif., have invented a radiation "dosimeter" simple and rugged enough to be used by any one in a radioactive disaster area, small enough to be worn like a wrist watch or carried like a package of cigarettes.

Drs. Charles C. Lauritsen and Thomas Lauritsen of the Kellogg Radiation Laboratory at California Institute of Technology describe the proposed civil defense safety device in the journal SCIENCE (Aug. 4).

Their instrument is not being made in quantity; it is only a proposal. But in the semi-annual report of the Atomic Energy Commission, released recently, there is

mention of an "electrostatic dosimeter" invented by a scientist at CIT and reference to "further industrial development" of it.

In the world of the A-bomb and H-bomb, write the Lauritsens, "tremendous and altogether unprecedented quantities of dangerously radioactive substances can now be liberated in a single explosion, or manufactured in a nuclear energy plant and delivered in the form of radioactive poisons, producing radiation hazards of fantastic magnitude."

Their invention would equip the ordinary citizen with a way of recognizing dangerous levels of radioactivity and a sort of