

## ECONOMICS

## Aluminum Up in China

FURTHER evidence that Red China seeks to become a major world power is revealed by its heavy development of aluminum resources.

K. P. Wang, Far East specialist for the U. S. Bureau of Mines, reports that Communist China has a small, integrated aluminum industry now in the process of rapid expansion. In 1958, he reported, Red China probably produced about 27,000 metric tons of primary ingot. The goal for 1962 is 100,000 to 120,000 tons. Aluminum output may rise to 180,000 tons by 1965, Mr. Wang said.

(This is still a long way from United States production of 1,647,710 short tons in 1957. But if Red China achieves its 1965 goal, it will have expanded aluminum production by 660% in seven years. The U. S. expanded its output from 206,280 to 1,647,710 short tons between 1940 and 1957. This represents an 800% gain over a 17-year period.)

"Thus Communist China is about to become a medium producer of aluminum by

world standards. In 1959, its output most likely will exceed that of the United Kingdom," Mr. Wang reports in *Engineering and Mining Journal* (July).

They estimate 250,000 to 300,000 metric tons of aluminum are required by China's economy for every 10,000,000 tons of steel. Annual steel output has already topped that figure. The country is making up some of its deficit in aluminum through imports, Mr. Wang says.

The Chinese are not using aluminum for kitchen utensils and foil, but are harnessing it to industrial jobs where it can work for national advancement. Chief uses of aluminum now are in machinery and equipment, electric power, communications and, to some extent, the automobile and aircraft industries, Mr. Wang reports.

Red China recently determined to expand its electric power distribution system and communications networks by substituting aluminum for 60% of the copper that would be required.

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**ELECTRONIC ENCYCLOPEDIA**—Russian visitors to the American National Exhibition in Moscow gather around the "electronic encyclopedia" to ask questions about life in the U. S. An International Business Machines RAMAC 305 computer, in the foreground, prints out answers in Russian to 4,000 different questions, some of which were supplied by Science Service. Its "memory" contains 1,000,000 bits.

## CARTOGRAPHY

## Maps Detail Sea Limits

THE FIRST maps showing in detail the territorial sea limits of the United States have now been drawn.

The territorial sea is a three-mile zone of ocean bordering the shore over which the U. S. has full jurisdiction. Although it has been a recognized entity for more than a century, only recently has serious effort been made to detail its limits for the entire U. S. coast line.

Knowledge of the exact relationship of an offshore location to the seaward boundary is of great importance in case of unwarranted action on the part of a ship flying the flag of another nation. It is also important in determining ownership of tides and oil.

Defining the territorial sea would be easy if the shore line were relatively straight. However, wide river mouths, bays and coastal islands make drawing the three-mile line difficult.

Dr. G. Etzel Percy, State Department geographer, has recently attacked the mapping problem in detail on a nation-wide basis, plotting his results on large-scale nautical charts.

The over-all length of the shore line from which the three-mile limit is drawn is 4,827.75 nautical miles. Three nautical miles equals 3.45 statute miles. The tidal shore line, which includes all islands and inland penetrations of the tidal shore line, is 53,677 statute miles.

The total area of the territorial sea surrounding the continental part of the U. S., but excluding Alaska, indicates the marginal belt has an area of 17,320.9 nautical square miles.

State Department figures reported in *The*

*Military Engineer* (July-Aug.) show that Rhode Island, Maine and California are the ocean states having the most complicated coast lines.

Even if the width of the territorial sea should change, the mapping work of Dr. Percy would still be of significant value because the new outer limit could be measured from the same base now drawn for the first time.

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## ASTRONOMY

## Honor 19th Century Telescope Maker

THE UNITED STATES is paying official tribute to Henry Fitz, the nation's first commercial telescope maker, whose mid-nineteenth century efforts gave American astronomers telescopes that compared favorably with imported instruments.

Telescopes of good quality had been made in this country occasionally since 1760, but before 1840 observatories depended primarily on foreign instruments.

Tools from the first Fitz telescope shop, established in the 1840's in Manhattan, New York City, have been installed in an exhibit at the Smithsonian Institution. They were donated by Louise Fitz Howell, Southold, Long Island, N. Y., Fitz' granddaughter.

Fitz made instruments for Columbia College, Vassar College, the University of Michigan, the Dudley Observatory, the Allegheny Observatory, and a number of private observatories. Some of his instruments reportedly are still in use.

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## ICHTHYOLOGY

## One-Eyed Fish Caught Off Mexican Gulf Reefs

A ONE-EYED monster, just as Cyclops in the ancient myths, has been found off the Gulf of Mexico near Yucatan.

This time, however, the Cyclops is a fish, not a man. The fish, a member of the family Pomacentridae which includes the bright-colored, coral reef damselfishes, is extremely rare, Dr. Edward M. Nelson of Loyola University, Chicago, reports.

It is so rare, in fact, that only one other one-eyed vertebrate has ever been reported living in nature. This was a ray, described in an Italian journal more than 75 years ago, Dr. Nelson reports in *Copeia* (July 24).

Study of the one-eyed fish's anatomy indicated that it was about two to three weeks past hatching stage and free-living when caught. The possibility is good that it was able to see and survive competition since it had come to light associated with the fish-collecting net and was part of a school of fish.

The single, central eye was the left one at some early stage in the fish's development, Dr. Nelson concludes. Only the left optic nerve is present crossing over into the right brain; there is also a trail of retina into the left orbit or eye socket. Both orbits are completely formed except for narrow horizontal slits in the front portions. It appears that the right eyeball was probably lost when the fish's skeleton and other parts were still "plastic."

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