VEST-POCKET SUN

New mercury vapor arc lamp, no bigger than a cigarette, is surrounded by rapidly flowing water to keep it cool while it radiates light one-fifth as brilliant as the sun's.

METALLURGY

China's Tungsten Monopoly Broken by Molybdenum

CHINA, once the dominant factor in the world tungsten market, has been losing her dominant position because of the growth of tungsten production elsewhere and through the emergence of a rival material, molybdenum, Kurt Bloch has reported to the American Council of the Institute of Pacific Relations.

Useful not only for the delicate filaments of incandescent electric lamps, but in the manufacture of magnetic and tool steels and armor plate, tungston until recent years was very nearly a monopoly of the Chinese government. Large deposits of tungsten ore are located in Southern China.

Production of molybdenum, three-quarters of which is produced in the United States, has increased from 35,000 tons in 1930 to 121,000 tons in 1934, Mr. Bloch reports. Molybdenum, cheaper than tungsten, belongs to the same family of elements in the periodic system and therefore has roughly similar properties.

Feverish rearmament efforts, particularly by Germany and Russia, forced the price of tungsten during the 1933-35 period to a high level, thus increasing the competition of molybdenum and world production as well. Establishment of Nanking sovereignty over the Canton government in 1936 and a barter deal with Germany resulted in diversion of most of China's tungsten to Germany and from the European market. Publication of the British White Paper on rearmament in February, 1937, resulted in a wild tungsten boom.

Outbreak of the Sino-Japanese war led to the belief a tungsten famine was in sight and the price of the metal soared to a level only a little below that of silver. Action by the German government in ordering the use of molybdenum as a substitute for tungsten and in releasing some of its huge stocks to profit from high prices resulted in lowering the price of the metal.

Production from other ores, notably from ores in Bolivia, plus the increasing competition of molybdenum, indicates that there will be no repetition of the sky-high tungsten prices of a year ago,

Science News Letter, September 3, 1938

GEOLOGY

Research on Minerals Scheduled for TVA

MINERAL resources of the Tennessee Valley, other than metals, are to be investigated in a new experiment station to be established by joint arrangement of the U. S. Bureau of Mines and the Tennessee Valley Authority. The Valley's great wealth of non-metallic minerals, such as clays, mica, and quartz, together with the abundance of low-cost power available, make it a favorable region for such research.

Science News Letter, September 3, 1938

ENGINEERING

New Midget Arc Lamp Rivals Sun in Brightness

A "MIDGET SUN" in the form of a 1000-watt mercury arc lamp whose brightness is one-fifth that of the sun's surface and is yet no larger than a cigarette is announced by the General Electric Company and the Westinghouse Manufacturing Company.

Consisting of a small quartz tube whose tiny bore contains a globule of mercury, a trace of argon and the necessary electrical contacts, the new lamp's light source is approximately 12 times as brilliant as the incandescent filament of the standard 1000-watt projection lamp, company engineers declare.

It will find wide use in photo-engraving work, in blueprinting, photo-enlarging, in searchlights, and for therapeutic applications, they predict.

The lamp is watercooled because enormously high pressures and heat are developed in producing its brilliant light. Three quarts of water a minute flow past the midget through a special water jacket. A pressure-operated switch and magnetic valve turn the water on before the lamp is lighted and turn off the lamp in the event of failure of the water supply.

The light given off by the arc, about the size of a common pin, is stated to be whiter than that emitted by the conventional mercury lamp.

Science News Letter, September 3, 1938

PSYCHOLOGY

Mental Stock Market of Intelligence Explained

IF THE stock market baffles the layman with its cryptic bid and asked figures and abbreviated designations of companies, even more does the mental "stock market" of intelligence rating puzzle the uninitiated.

School children and their parents, too, may well wonder what the A's and B's and E's on the report card mean in terms of mental ability. The answer usually is, not too much. More exact is a child's intelligence quotient, commonly known by its symbol I. Q. If you wish to know whether your child's I. Q. indicates genius or just average, here is the key to the mystery.

Intelligence, like freckles, is unevenly distributed. But like most things in nature, intelligence is so spread that most persons have just a normal amount.

The par value of mental stock, as