GENERAL SCIENCE

Grants For the Support of Science Cut 77 Per Cent.

FINANCIAL support of science by the large foundations has been cut to less than one-fourth of what was spent for this purpose during 1930, it is revealed by a survey of the Twentieth Century Fund recently made public.

Funds for research in the physical and biological sciences dropped $6,000,000. Appropriations from the 68 foundations surveyed amounted to $7,774,999 in 1930. In 1934 the figure had dropped to only $1,746,662.

Funds for medicine and public health were cut from $28,841,937, granted in 1930, to but $8,609,710 for 1934, a loss of 70 per cent.

The reduction in grants for scientific and health work do not represent any loss of capital by the foundations during the depression, the Twentieth Century Fund found. In fact, their security holdings are reported to have actually increased seven-tenths of one per cent. The foundations have suffered a loss of income on their holdings, of course, but the grants were reduced before the capital was endangered.

Donations in certain fields have been increased somewhat, it was found. Economics received a 74 per cent. increase, from $587,582 to $1,021,532; city planning and housing, 82 per cent., from $150,784 to $275,206. Labor received an increase of 141 per cent., but this large percentage increase represents actually a comparatively small increase in dollars—from $9,570 to $23,091.

On the average, grants for all purposes were cut 53 per cent.—from $68,225,411 to $32,063,619. This means a drop in funds for education and research in various fields of more than $36,000,000.

Science News Letter, January 4, 1936

SAFETY

About Ten Seconds Needed To Pass the Car Ahead

IF YOU want to pass the car ahead of you, be sure you have from 1,000 to 1,600 feet of clear roadway ahead and allow at least 10 or 11 seconds to get back on your own side of the road.

This is the practical rule for motorists pronounced by Prof. B. D. Greenshields, of Denison University, at the meeting of the Highway Research Board. Prof. Greenshields has made a photographic record of 7,500 cars on the road.

Many drivers pass with less than the safe distance available, he found. They seem to depend upon the driver coming from the other direction to slow up or give way for them to avoid an accident.

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RADIO

Radio Waves Acts As Tamper-Proof Burglar Alarm

A TAMPER-PROOF burglar alarm that sets up a field of radio waves, from which an intruder cannot escape without detection, has been designed by Thomas S. McCaleb of the Institute of Geographical Exploration at Harvard University. Further development of the device, Mr. McCaleb says, may lead to its use as an ultra-sensitive airplane detector.

So delicate is the instrument that once an intruder has entered a protected room it is absolutely impossible for him to avoid detection, even if he should know of the alarm and attempt concealment. In this feature the new alarm is a decided improvement over types of alarms operated by photoelectric eyes, which intruders can in some cases avoid.

Essentially, the apparatus consists of an ultra-short wave transmitter and receiver placed on opposite sides of the room to be protected. High frequency signals of seven-tenths meter wavelength are broadcast from the transmitter and are reflected back and forth by the sides of the room, literally filling it with waves. These waves are really responsible for trapping the intruder, for the disturbance of only a few of the many million in the room gives the alarm.

Under ordinary conditions the intensity of the signals as they reach the receiver is constant, but a foreign body in the field acts as a mirror and reflects the radio waves in such a manner as to change the intensity reading. This change in intensity, often extremely minute, is used to trip the alarm.

Use of larger transmitters in a line, with the signals directed up into the atmosphere to form a sheet of waves, experiments by various government scientists show, would enable the detection of any aircraft passing through them. The plane, like the intruder, would reflect the waves back to earth to receivers. Using the positions of the sending and receiving stations, it might also be possible to determine the exact position of the plane.

The instrument was originally designed to be used in the lecture hall for spectacular demonstrations of the effect of certain types of antennas, reflectors, and obstructions in short wave broadcasting.

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