SCIENCE NEWS

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THE NUMBER OF SCIENTIFIC MEN AVAILABLE

A TWELVE-YEAR shortage of the most essential scientists for war and industrial research as the consequence of the non-technical use of scientists and science students in the fighting forces is forecast by Dr. Gaylord P. Harnwell, of the University of Pennsylvania, writing as editor of the *Review of Science Instruments.*

In this war with radar, airplanes, and other such devices, the nation's technical superiority is due to research in the field of physics, although chemistry played the chief role in the first World War. Figures show, however, that the number of physicists in training in this country has dwindled alarmingly.

The number of physicists who were granted the doctor's degree has dropped markedly in the war years, with only 55 in 1944 compared with a peak of 191 in 1941. Dr. Harnwell takes 26 as the average age at which a doctor's degree is received, 1941 as the last year in which a normal number of degrees were awarded, and finds that even with a revival of training of 18-year-old students in 1945 there will be a gap of 12 years during which very few physicists will be available.

The nation will be short 1800 graduate physicists in 1953, compared with present 2833 Ph.D. physicists listed in the National Roster of Scientific and Specialized Personnel. The situation is made worse by the demand expected for physicists to conduct researches for industry in the postwar era.

Unlike colleges in the United States, British and Soviet technical schools have been allowed to keep up their enrollments as a war and postwar measure. An authoritative British report states that their output of engineers and physicists has more than doubled during the war.

Because many professors have been drawn away from the colleges for war research, the problem now and in the immediate future is not merely a matter of getting students into the colleges, but of reorganizing the teaching staffs to teach them.

ITEMS

NEW hybrids of sweetcorn developed during the past season, used in connection with older hybrids, will make it possible for the home gardner from one planting to pluck corn in the pink of condition every day from early summer to frost. These new hybrids were developed by the Connecticut Agricultural Experiment Station, and, although not yet thoroughly tested, give good promise. One matures earlier than older early hybrids, the other later than the better-known late varieties. If six varieties of corn, in what is called a succession series by the station, are planted at the same time, mature corn will be available throughout the season. As one passes maturity the next will be ready for the table. The new hybrids are expected to extend the sweetcorn season appreciably. Information on the succession series is available in the annual sweetcorn report of the station.

A NEW lettuce variety, valuable for summer use because it does not shoot up a flowering stalk and "go to seed" as soon as warm weather comes, is announced by the U. S. Department of Agriculture. Propagation stocks of seed are now being distributed to growers, and it is expected that enough seed for general planting will be available by the spring of 1946. The new lettuce was developed by Dr. Ross C. Thompson at the Plant Industry Station at Beltsville, Md. It has frilled light green leaves with the very wrinkled surface known to horticulturists as "savoyed." Gardners refer to the "going-to-seed" process in lettuce as bolting. Because of its reluctance to do this, the new variety has been named "Slobolt."

A NEW development in the Diesel engine field permits the use of either gas or oil as fuel without any electric sparking device, saves from 20 to 25 per cent. in fuel consumption, and enables the change from one fuel to another without the necessity of a shut-down. It is a development of the Cooper-Bessemer Corporation. Any engine built as a Diesel can be fitted to operate on gas, but engines built purely as spark-ignited gas engines can not be converted to work on the principle of the Diesel. Conversion of Diesels from one type of fuel to another has been possible in the past, but it has always been necessary to shut down and exchange major or minor parts. With the new development conversion is as simple as closing one valve and opening another, and it can be arranged so that the engine automatically goes from one to the other as the gas availability changes. "Assuming a Diesel oil engine in operation and on load," Ralph L. Boyer, Cooper-Bessemer Corporation engineer says, "if gas is admitted in the intake air the governor obviously will immediately reduce the amount of oil to compensate for the percentage being carried in the gas. It then merely becomes necessary to reduce the fuel oil injection to the desired minimum and then govern the percentage of gas according to load."

WHITE dwarfs may be pulsating stars like the giant Cepheids, Dr. P. L. Bhatnagar, of the University of Delhi, reports in *Nature.* Although the pulsation may be too rapid to be observed directly, it may still exist in three exceptional stars which are of high temperature but still with an average density so great as to be almost incredible —sometimes millions of times that of water. The period of the pulsation would probably be less than ten seconds. There seems to be no theoretical reason why the rhythmic expansion and contraction of a star, so far observed only in giant and super-giant stars, should not take place in denser stars and even in white dwarfs where the atoms have been stripped of their electrons. After a white dwarf has been created by the sudden collapse of a star, it is quite natural that the star should be left pulsating. Even if the physical conditions do not favor maintaining such action of the star, Dr. Bhatnagar estimates that, once started, the pulsation might last for about 1,000 years before it dies out.