

GENERAL SCIENCE

One More Year of College

Over half of students now eligible for draft to get one more year of college under new plan drawn up by government. President Truman signed order.

► UP TO 166,000 college students will be eligible for the draft at the end of this school year under the new college deferment plan. Up to 204,000 other students who would otherwise be draft-eligible in June will have their service postponed for another year of college. Most high school seniors who want to go to college next year will be able to complete one year at least.

The new policy calls for postponement of service of college students who meet the following requirements: 1. They must achieve a passing mark on a new Selective Service Qualification Test, or 2. Freshmen must be in the upper half of their classes, sophomores in the upper two-thirds and juniors in the upper three-quarters. This year's seniors who want to go to graduate school and are qualified, may do so, with no restrictions as to numbers.

In addition to the 166,000 who may be picked up by the Armed Forces in June, another 40,000 seniors in R. O. T. C. will be given active commissions as officers.

The other 649,000 male, full time undergraduate students are either veterans, already classified as Four-F or undergraduate R. O. T. C. members.

An authoritative government source figures that allowing students to be de-

ferred if they achieve a passing mark on the new test even though they do not place high in their classes will add about 10% to the 190,000 who would be deferred if only class standing were taken into account. Other sources, however, say this percentage might be higher.

Already, Harvard officials have announced that their students would average between 130 and 150 in the old Army General Classification Test. An equivalent in the new test of 120 or above on the old AGCT would mean deferment for a student.

Colleges and universities, in addition to Harvard, which select their students on the basis of rigid standards would, under this plan, lose very few students. On the other hand, many lower-standard smaller colleges would lose most of their male students if only the test were used as a criterion.

Only 16% of the general population would receive marks higher than 120 on this test. It is believed that between 40% and 50% of the college population would rate above 120.

The new test will be administered by Educational Testing Service, Princeton, N. J. ETS has handled College Entrance Examination Board tests for years.

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"CLOSE-UP LENS"—This special lens assembly, designed and built by Kurt Kriegsmann of the Naval Ordnance Laboratory, enables a photographer to take a close-up picture of objects over much longer distances than previously.

RESOURCES

Re-use by Industry Lessens Water Shortage

► THE GROWING shortage of water in areas where industrial plants require large quantities can be met in part by using the same water over and over again, Howard E. Degler, Marley Company, Inc., Kansas City, Kans., told the American Society of Mechanical Engineers meeting in Atlanta, Ga.

This is particularly true where the water is used in cooling equipment. Once-through use of water in industry is wasteful, he declared. He outlined the principles of evaporative cooling and described the operation of mechanical draft cooling towers and air-cooled finned tube exchangers.

The towers, he said, require less than one per cent evaporation of the water circulated to cool the water economically. The air-cooled exchangers are being increasingly used where high-level heat removal is required and where water is scarce, expensive or badly polluted.

He named as large industrial users of water, power plants, manufacturers of paper, petroleum products, rayon, linen, textiles, lactose, sugar, explosives, hydrogen, rubber and steel.

Hydrogen and synthetic rubber each require 2,500 pounds of water per pound of finished product, he stated. Wool requires 500 pounds of water per pound of finished product, lactose 800, butadiene 1,200, rayon 800 and gun powder 400.

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MEDICINE

Gallium Is Cancer Weapon

► A NEW radioactive weapon against bone cancer will come from the atom-smashing cyclotron, if certain technical difficulties can be overcome.

This future prospect was forecast by Comdr. H. C. Dudley, head of the biochemical division at the Naval Medical Research Institute, Bethesda, Md.

The new cancer weapon will be an isotope of radioactive gallium. It will be made by cyclotron bombardment of zinc.

Radioactive gallium itself, made in the Oak Ridge atomic pile, has given some relief of pain to patients with cancers that spread to the bone, Navy surgeons have found. While the results have been promising enough to go on with trials of it, "it is certainly no miracle drug," Comdr. Dudley declared in reporting the work with it to date.

Radioactive gallium made by neutron irradiation of natural gallium has two dis-

advantages: 1. the toxicity of the non-radioactive part, which limits the amount that can be given in treatment; 2. its short half-life of only 14.3 hours, 70% of it decaying in 24 hours.

Cyclotron-made radioactive gallium from zinc, on the other hand, can be separated from the zinc and will be free of any toxicity due to gallium or other metal. Also it has a half-life of 78 hours, only 20% of it decaying in 24 hours.

About 20 times as much radioactive gallium concentrates in the bone cancers as in the adjacent healthy bone, the Navy studies have shown.

The radioactive gallium also may be useful for detecting bone cancers. Early spread of cancer to bones has been detected by tracer amounts of the radioactive chemical before changes could be found by X-ray film studies.

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