

GENERAL SCIENCE

Conant on Education

Harvard president proposes plan for military strength without disrupting college study; adequate schools for all; and dissection of Soviet philosophy.

► THE NATIONAL militia plan for the armed forces, proposed by President James B. Conant of Harvard in his book, *EDUCATION IN A DIVIDED WORLD*, published by the Harvard University Press (\$3) will be received in educational circles as a means of maintaining military strength without disrupting college education.

President Conant suggests enrolling every physically fit boy at 18 or high school graduation for a period of 10 years in the National Guard. Summer camps and evening drill would provide the military training. The boys would have uninterrupted college opportunity that would furnish the specialists in peace and war.

Although this plan is not supported by the military men, educational authorities have been opposed to the wrecking of the college year by even six months of training.

The present draft will not affect college students until next June, as any called will be deferred until the end of a college year.

In the long run, President Conant, himself a chemist, warned against educating more doctors, lawyers, engineers, scientists and college professors than our economy can support. He fears that such people, if unemployed, as in pre-war Germany, might become frustrated individuals who would lead anti-democratic movements.

Primary Education Need

The number one educational need of the present, in President Conant's judgment, is "an understanding of American democratic society and its historical goals, and a dissection of Soviet philosophy and an exposure of its methods."

The necessity of equality of opportunity for youth of each succeeding generation is emphasized by President Conant, who assumes an armed truce until at least the middle fifties and a divided world for a long time to come.

He wants state tax money used to bolster up the schools in parts of the state where local funds do not provide adequate schools. He wants federal aid to education along the lines proposed by Senator Taft. He wants discovery of the various talents in youth early so they can be cultivated. He wants two-year colleges added to local school systems to provide vocational training and training in citizenship at home. He wants a college degree awarded at the end of these two years. He wants some federal scholarships for the best qualified youths in the four-year professional colleges.

"As a nation, we are a long, long way from equality of educational opportunity."

Mr. Conant reports. "An examination of various localities shows that already in the United States there are wide variations. Instances of very restricted opportunity and instances of very wide opportunity for children of the lower income groups may be easily discovered."

Not only does family income affect a child's schooling, but also the location of his home. Youths in cities, where universities are located, he shows, have a much better chance of continuing their education than youths in rural communities, who must go away to college.

Mr. Conant cites estimates that "as many promising boys and girls fail to go to college for economic reasons as the number who now enter," and he estimates that "somewhat less than one-fourth of the male white population between the ages of 10 and 16 now lives in urban areas within convenient commuting distance of a satisfactory university."

"To the extent that educational opportunity is determined by geography or by family status," he warns, "the increased

importance of formal education in modern America tends to make for social stratification.

"When education more advanced than the elementary schools was hardly required except for a few professions, a man might make a career for himself without benefit of formal learning," he points out; but today "even a man with great native ability whose education stops at the end of grammar school has many doors of opportunity firmly closed."

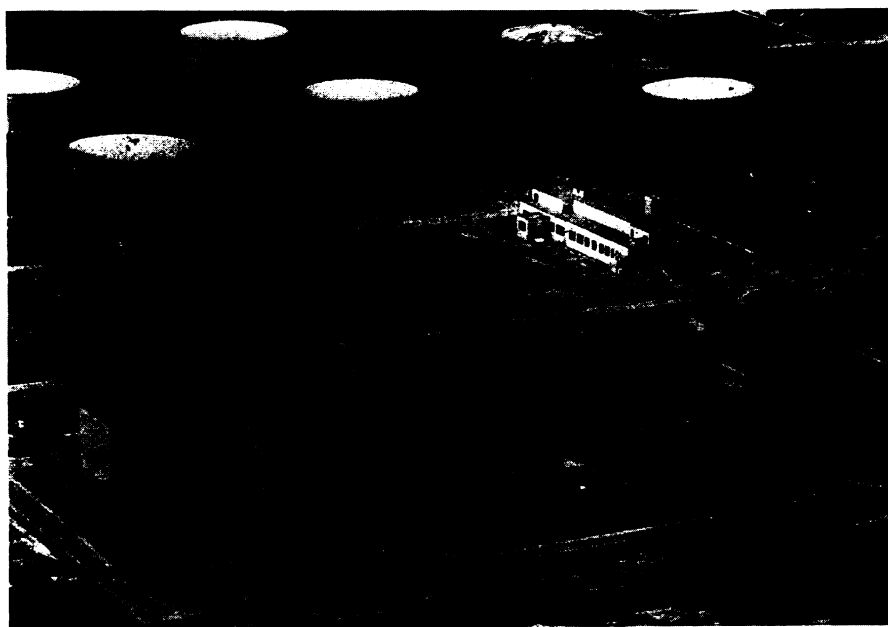
Of America, Mr. Conant says: "Our fitness to survive the Russian challenge clearly depends on many factors, but it depends primarily on a vigorous demonstration of the vitality of our own beliefs in democracy and freedom."

Scientific Method

In his own field of study, Mr. Conant suggests that teachers "reject the extravagant claims for the scientific method as a modern Aladdin's lamp and question the validity of the assumption that the study of physics trains the mind of the future statesman."

Students should be given "the conditions of scientific inquiry, that is to say, the nature of the assumptions about the external world which are essentially those of common sense."

"Then if we seek to spread more widely the desire to examine facts without prejudice and to glorify the bold and impartial inquirers of the 20th century, we should go to other fields than natural science. . . ."



NEW RESEARCH CENTER—One of the world's largest petroleum research centers, just opened, was built for the Standard Oil Development Company. The building shown here from the air is the first unit of the center, located at Linden, New Jersey, which will house approximately 650 chemists, engineers and research assistants in its 80 laboratories. In the background are oil storage tanks.

Rather than leave in the minds of the pupils the very dubious proposition that the methods of science are applicable to all manner of practical human affairs, we should show how legal methods of inquiry have been used in Anglo-Saxon countries. Likewise, we must study the rational methods of merchants, manufacturers, soldiers and statesmen which were employed with considerable success for generations,

long before any idolatry of the word 'science' came over the academic horizon."

Despite difficulties and criticism of the method, Mr. Conant believes that "for young pupils the presentation of general science in terms of understanding the earth, the atmosphere, the process of life, and to some degree modern technology, is the most likely way to arouse their interest."

Science News Letter, October 23, 1948

ASTRONOMY

Meteor from Outer Space

► A METEORITE weighing 1,164 pounds, the eighth largest rock known to have crashed through our atmosphere and landed in the United States, has been found to have some unusual features.

Deep depressions on the surface of this piece of iron from the heavens probably existed before the meteor became trapped in our atmosphere, E. P. Henderson and S. H. Perry of the Smithsonian Institution state.

The so-called Drum Mountains meteorite from Utah was discovered by chance four years ago by two Japanese from a neighboring relocation center set up for enemy nationals during the war.

These two, Yoshio Nishimoto and Akio Ujihara, were conducting classes in gem cutting for the internees. Exploring the countryside for materials suitable for classroom demonstration, they came upon a large rock protruding two feet above the ground. Thinking the rock unusual, Mr. Nishimoto chipped off a piece and sent it

to the Smithsonian. The complete rock has since been brought to Washington and examined.

The surface of iron meteorites frequently show broad, shallow depressions, popularly known as "thumb marks." This iron has deeper depressions, unrelated to the so-called thumb marks, also observed on some other iron meteorites.

These depressions in the past have been explained by some as due to weathering or rusting out of some constituent after the meteorite landed. Others reported them due to the burning out of troilite, a sulfide of iron, during its flight through the earth's atmosphere. Mr. Henderson and Mr. Perry interpret these markings as ones created in cosmic space, before the meteorites entered our atmosphere.

The meteorite was found resting almost entirely on the surface of the ground. L. B. Aldrich, director of the Smithsonian Astrophysical Observatory, estimates that this 1,164-pound meteorite must have struck the

earth with a force of at least 20,000,000 foot-pounds. Yet no crater was found in the formations in which the iron was discovered, and the surface of the meteorite is surprisingly free from any evidence of an impact as great as this. The meteorite possibly fell some distance from the point where it was found, and either bounced or rolled to the place where it finally came to rest. Or its impact with the earth may have been cushioned by deep snow or loose sand.

Science News Letter, October 23, 1948

VETERINARY MEDICINE

Dogs May Be Poisoned By Chewing on Paint

► DON'T LET the pup chew on anything painted, warns the American Veterinary Medical Association. Ordinary paints often contain lead, and there are cases on record of dogs developing lead poisoning after chewing wooden objects covered with such paint. In one case, the animal was poisoned by paint that had been used on his own house.

Science News Letter, October 23, 1948

AERONAUTICS

Five-Engined Plane Used For Flying Laboratory

► THE MYSTERY of the five-engined airplane observed during the past year in flights over the eastern coastal region of the United States is at last explained. It is a converted B-17 Flying Fortress to which has been added a new engine for testing, mounted in an extended nose.

The new engine is a Wright T-35 Typhoon. To test this new American-designed turbine under actual flight conditions and thereby speed up its development and early use by the U. S. Air Force, Wright engineers conceived the idea of a real flying laboratory.

For the purpose, one of the B-17 Flying Fortresses, that played such an important part during the war, was secured and modified. The changes were made by the Boeing Aircraft Company. The cockpit was moved back four feet, the nose extended, the fuselage reinforced and heavier frames and outer skin installed.

Then the new power plant, equipped with a four-bladed electric propeller, was mounted in the nose section. With this flying laboratory, Wright engineers have tested the new Typhoon engine-nacelle-propeller combination at high altitudes at actual service conditions at a fraction of the cost and time formerly required to test a new power plant. On these flights the Typhoon was operated or not at will, while the power of the four Wright Cyclone engines of the conventional piston type, with which the B-17 is equipped, were adjusted as desired.

Science News Letter, October 23, 1948



FLYING LABORATORY—This B-17 bomber has been converted into a five-engined flying laboratory to test the new high-powered turbine engine, the Wright T-35 "Typhoon."