

## GENERAL SCIENCE

# U. S. Sticks to Cities

► THE THREAT of the atomic bomb is not scaring the American people away from the large cities.

This was found in a study of population growth of cities in the present century made by Dr. Donald J. Bogue, associate director of the Scripps Foundation for Research in Population Problems, Oxford, Ohio, for the U. S. Housing and Home Finance Agency. (See p. 284.)

"During the decade just finished, which ushered in the atom bomb, there is no evidence of a suspension of growth in the large centers and a major transfer of growth to the smaller ones," Dr. Bogue declared in his report.

It is true that a total of 22 new metropolitan areas were created during the decade, but this is not exceptional in the atomic decade, Dr. Bogue points out. In 1920, 23 new areas of this type were reported, and the number in 1930 was 21.

There was also a stepping up of the movement from the centers out into the suburbs, but this was only an acceleration and extension of a trend already established in the 1930's. In Dr. Bogue's opinion, it would be difficult to attribute it to a desire to live at a greater distance from "ground zero."

More important, but having nothing to do with the atomic bomb, is the shift in regional development of cities. The growth of cities in the Northeast dropped way below average for the country as a whole, to 10.2% as compared to the nation's 21.8%.

The South is now having a very rapid metropolitan development. In the 1940-50 decade, the South increased its city population more than 50% faster than the average rate in the nation.

"These," Dr. Bogue comments, "are the fastest rates of metropolitan growth which the South has enjoyed since 1900 or possibly much earlier. They are faster rates of growth than those which prevailed in the Northeast and the North Center region during their period of rapid metropolitan expansion."

Growth rates of southern cities are second only to those of the West, which has broken all records. The movement to the West, Dr. Bogue found, has been predominantly a movement to western cities and not to the wide open spaces.

Fastest growing city in the decade is Albuquerque, N. Mex., with a 109.9% increase in population. Following next are Lubbock, Texas, and San Diego, Calif.

Science News Letter, May 1, 1954

## MILITARY STRATEGY

# Improve Bayonet Tactics

► BAYONET FIGHTING, which is almost the same today as it was in 1905, may be revised to give young Marines a better chance in hand-to-hand combat.

New tactics have been worked out by Dr. Armond H. Seidler, formerly an Army bayonet instructor in World War II, who is now a physical education teacher at the University of Illinois. Both the Marine Corps and the Army currently are studying the merits of his system.

Dr. Seidler says his tactics provide the Marine with better guard and with less time out of the guard position. It yields a faster striking speed with quicker recovery. It

adds up to 10 inches to the range of the Marine with his weapon, keeps him in better balance and requires less energy.

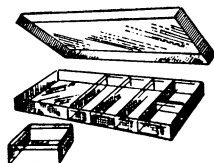
In the Army system, guard position is with the rifle outthrust. In the new system, guard position is with the rifle diagonally across the body—a sort of high "port arms." This makes it easy for the Marine to parry an opponent's thrust and knock the attacking weapon aside.

Dr. Seidler and Maj. George Golleher of Quantico, Va., state in the *Marine Corps Gazette* (April) that studies show the new method can save great amounts of the Marine's energy. During two-minute runs, the method required an average of 54,261 fewer foot pounds of work than the regulation method. This amounts to a saving of more than four-fifths of a horsepower in that time.

"Imagine what this means," the article added. "An assault on the enemy position is conducted from 100 yards, up a steep grade and using assault fire. When the enemy position is reached, it may be necessary for many reasons to use the bayonet. The assaulter is physically weary; the rifle and bayonet are heavy and the assaulter is puffing and panting from his exertions. Which system of bayonet fighting would be to his benefit?"

Science News Letter, May 1, 1954

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Finalists of the Fifth National Science Fair will describe their projects, speaking from various parts of the country.

## MEDICINE

## Larynx Cancer Patients Helped by Betatron

► "ENCOURAGING" RESULTS in treatment of larynx cancers with a dual beam, 31,000,000-electron-volt betatron are reported by Dr. Th. Meister of Zurich University Radiological Institute and the Cantonal Hospital, Zurich, Switzerland.

The patients he treated had cancers of the larynx, or voice box, and adjacent parts of the throat. All have been free of symptoms for 18 to 20 months and present a good cosmetic effect. The skin of the neck showed practically no reaction after the treatment.

The betatron, Dr. Meister predicts, "should open up new possibilities" for treatment of cancers inside the mouth, because of the low degree at which its rays are absorbed by bones.

Results of betatron treatment of cancers of the lungs and esophagus were disappointing. Results in cases of bladder tumors were more favorable.

In cancers of the stomach and rectum, Dr. Meister reports the betatron gave palliative results, that is, relief of symptoms, that could not be achieved with 200-kilovolt X-rays.

The betatron was made by Brown, Boveri and Co., Ltd., of Baden, Switzerland. It has been in regular use in Dr. Meister's clinic for treatment of deep seated tumors since April, 1951. During the first two years, over 200 patients were treated. Many of these were far advanced cases of cancer. Both the number treated and the time since treatment are too little to warrant exact analysis and evaluation of the success of the betatron, Dr. Meister states.

Science News Letter, May 1, 1954

## MATH IS FUN

By Joseph Degrazia, Ph.D.

Here is a treasury of brain-teasers. You need not be a mathematical genius to solve these problems and puzzles. What you need is to know how to THINK LOGICALLY—how to REASON. This is practically a "course" in applied logic and reasoning—besides being an immense amount of fun that will keep you absorbed for many hours. You will find not only that MATH IS FUN, but also that learning math can be fun!

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