

MEDICINE

Artery Disease Research

President Roosevelt's death may focus attention on the need for study of this major cause of death as in life he called attention to polio needs.

► IN LIFE President Roosevelt more than any other person focussed the nation's attention on the need for funds to fight infantile paralysis.

Perhaps his death will focus attention on the big medical problem of heart and blood vessel disease. Cerebral hemorrhage, from which he died, is part of this big problem. The strain that causes hemorrhage from blood vessels in the brain in one man may fatally damage the blood vessels of the heart in another.

Diseases of the heart, arteries and kidneys cause the majority of the adult deaths in the United States, Dr. Henry S. Simms, of Columbia University College of Physicians and Surgeons, told the Senate Subcommittee on Wartime Health and Education at a hearing last December.

The number of these deaths is increasing yearly and is far in excess of war casualties, he stated.

Although heart and artery diseases killed 536,745 persons in the United States in 1940, only \$93,835 was spent that year on research on these diseases. That is at the rate of 17 cents a death.

By contrast, \$2.18 research money was spent for each of the 164,906 cancer deaths, \$4 for each death for infectious disease other than infantile paralysis, and \$525 for each of the 1,026 infantile paralysis deaths that year.

A concerted program for an all-out fight on diseases of the heart and blood vessels, comparable to the programs for fighting cancer, tuberculosis and infantile paralysis, has not yet got under way. Individual scientists or groups of them are working on various parts of the problem, such as diabetes, gout, kidney disease, high blood pressure and emotional and mental strains, all of which may affect the health of the blood vessels and heart.

From one of these groups of researchers, Drs. R. D. Taylor and Irvine H. Page, of the Lilly Laboratory for Clinical Research at Indianapolis, has recently come a yardstick for predicting death from apoplexy in persons with high blood pressure.

Grim foreboding though this may be

to some, establishment of the yardstick, if confirmed by further studies, may open the way to a more direct search for methods of preventing death from cerebral hemorrhage. It will, moreover, offer comfort and assurance to those who probably will not die of apoplexy, even though they have high blood pressures.

The yardstick applies only to persons with high blood pressure of the type doctors call essential hypertension. It consists of five signs: severe headache at the back of the head or the nape or scruff of the neck; vertigo (dizziness) or fainting spells; motor or sensory neurologic disturbances such as memory defects, loss of ability to speak, and numbness or tingling; nosebleeds; and retinal hemorrhages without papilledema or exudates which the physician can determine from examining the eyes.

Apoplexy may strike, suddenly and fatally, in a person otherwise in apparently good health. If, however, any four of the above five signs appear in a person with essential hypertension, Drs. Taylor and Page state from their findings, it may be assumed that the patient will die of apoplexy within eight-tenths of a year to five years or, on the average, within 2.1 years.

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CARTOGRAPHY

Spherical Maps Save Space, Can Be Turned Quickly

► A GLOBE which can quickly and easily be turned with the finger tips to any desired position, and a nesting series of concave and convex spherical maps, arranged on frames which swing about a central axis, are increasing the usefulness of maps presented on a curved surface.

A new type of mount, which makes it easy to swing the globe about any one of three axes, eliminates the large amount of space needed for a globe set in the middle of the floor, and makes it possible to have built-in globes in classrooms, board rooms and offices.

A five-foot globe weighing several hundred pounds may now readily be turned to any desired position with little

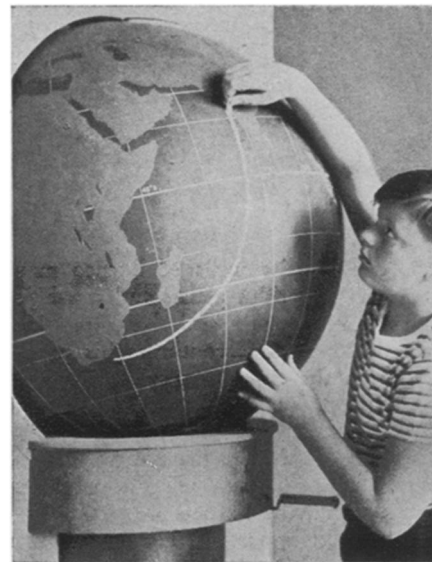
effort by means of the mechanical mount developed at the Science Museum of St. Paul, Minn. And polar areas, which were inadequately represented in the traditional axis and ring globes, may be carefully studied by those interested in air routes.

An atlas of spherical maps, some convex and some concave, arranged on frames which swing about a central axis, has made it possible to display a series of spherical maps without occupying too much space. The maps fit into each other and both the inside and outside of the sphere are used.

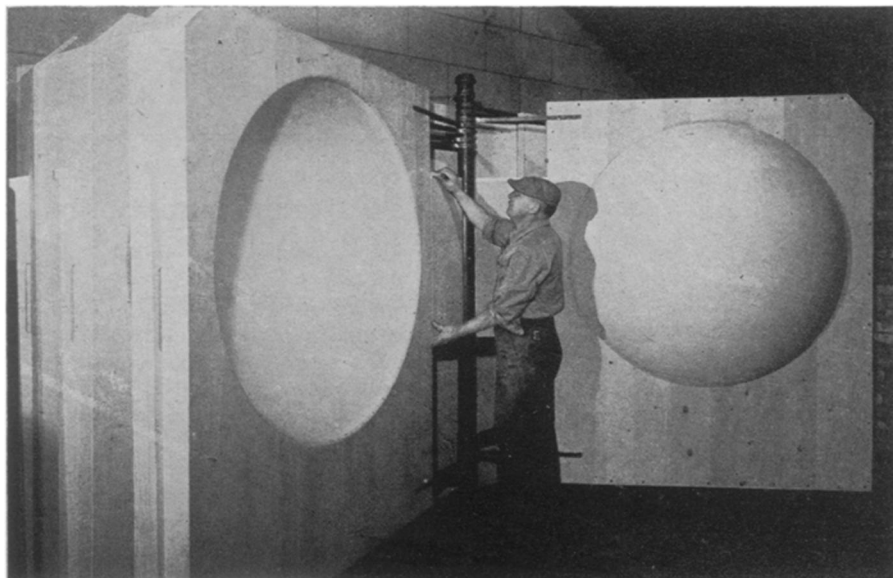
From the observer's standpoint, the chief advantage of concave maps is that he is looking at the inside of the bowl, and the map swings about him instead of curving away from his line of sight, states Dr. Louis H. Powell, director of the Science Museum.

"In its pioneering map exhibits dealing with national security, the first of which appeared in April, 1941," reports Dr. Powell, "the Science Museum abandoned at the start all attempts to represent the earth on flat planes and has used exclusively globes, segments of globes and concave spherical maps."

As long as one cannot see the entire surface of a globe at one time, a spherical segment of the globe is just as useful for most purposes as the globe itself. Most



EASILY TURNED—Large globes weighing several hundred pounds may readily be turned to any desired position. A recessed globe which can easily be oriented about any one of three axes is shown being used by a schoolboy.



SPHERICAL MAPS—A nesting series of concave and convex maps, arranged on frames which swing about a central axis, is being completed. Such an atlas of spherical maps will be used by the Science Museum in St. Paul to show the course of the war.

of the Museum's map displays have used large circular segments of globes, which in their entirety would be over 10 feet in diameter. Most globes lose part of their usefulness by being too small.

Since large globes will not go through the average doorway, the globes are cast in separable hemispheres. The Science Museum has successfully evolved a method of casting hemispheres and globe segments in basin molds prepared on a plaster-of-Paris master form.

The globes and spherical maps are made of a papier-mache composed of small squares of brown paper dipped in a dextrin-tempered plaster mix. The smooth surface is obtained during cast-

ing by brushing in a thin layer of the soft casting medium before laying the paper. The maps are reasonably durable and the material not particularly affected by atmospheric changes.

Due to these developments, the use of large globes is becoming increasingly practical. The Navy ordered 40-inch black-board-surfaced globes for training aerial navigators. And the blackboard-surfaced globes with and without the mechanical mounting are already being used in schools, colleges and by airlines so that people can trace their real or imaginary trips on a globe which truly represents the curvature of the earth.

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ENGINEERING

Engineering Guidance

➤ AFTER seeing the miracle which has been performed by American industry during this war, South American young men are turning to the United States rather than Europe for engineering education, Anibal Santos, formerly mechanical engineer of Empresa Electrica del Ecuador, Inc., Guayaquil, Ecuador, and now associated with the Combustion Engineering Company, reported at the meeting of the American Society of Mechanical Engineers. Only recently have South Americans begun to study engineering in North America, he pointed out.

The problems faced by American engineers in Latin America are complicated by the fact that there are relatively few technical men there, as compared with the legal and medical professions, Mr. Santos stated. It was not until recent years that South America began to think of industry and manufacturing, and therefore until recently there was little interest in the engineering profession.

Praising the Good Neighbor Policy, Mr. Santos declared that there is still much more to be accomplished. Closer intermingling with local people and fa-

miliarity with the languages of the country will be helpful in better understanding, he predicted.

Winning Good Will

➤ ACCEPTING speaking engagements to tell Brazilians about life in America, familiarity with Brazilian labor laws, import regulations, knowledge of the country's trade journals, a willingness to give technical help, were among the means suggested to the meeting by Chandra R. Saksena, of Rio de Janeiro, to win the good will of Brazil and its people.

Addressing his remarks to Americans who expect to engage in industrial and business enterprises in Latin America, he pointed out a number of do's and don'ts to observe while in Brazil. We must remember, he stated, that Brazil is a new and rapidly developing country. It lacks the complex organization of the United States and other older nations. Brazil's Latin cultural background naturally presents a pattern of different habits and customs.

He also suggested that Americans refrain from meddling in politics or religion. "We have a good motto which we tell all our foreign friends as they arrive," he stated: "If you want to keep out of trouble, keep out of politics."

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MEDICINE

Anti-Germ Activity Found In Buttercup Juice

➤ THE POSSIBILITY of a remedy like penicillin being developed from buttercup juice appears in a report by Dr. Beatrice Carrier Seegal and Dr. Margaret Holden, of Columbia University College of Physicians and Surgeons in *Science*, (April 20.)

Growth of streptococci, staphylococci, pneumonia, anthrax and tuberculosis germs and a number of other microorganisms that cause sickness in humans was stopped by juice pressed from buttercup leaves, stems and blossoms. A steam distillate of this pressed juice was also effective. Anemone juice gave similar results.

The use of the buttercup juice as a remedy in infections was prevented by its toxicity for laboratory animals. The distilled juice is less poisonous than the whole juice. Chemical methods are now being developed, the scientists report, in an effort to separate the poisonous from the anti-germ substances.

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