Traffic Signs

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yellow marker is reserved for railroad crossings. A diamond-shaped marker means slow down, and this general message of the diamond can be read before the driver comes within reading distance of the words curve or hill. An octagon sign means stop. And a square sign indicates a school, hospital, or other situation which may require a little more than ordinary care on the part of the passing driver.

Some progressive cities have begun to adopt this method of conveying an idea by color and shape as well as by the words on a sign In Washington, stop signs at the entrance to boulevards are now made octagon shape, in accordance with the system on the U. S. highway routes. But so recent is this idea that the majority of local drivers have not appreciated that the form of the sign has any particular significance.

This use by a city of one of the new highway devices shows how a really uniform sign language will fit into cities as well as country roads. A model city traffic code, which includes provisions for signals and signs, is in process of development to show local traffic officials how nationwide standardization can be effected. It has been stated that the New Jersey legislature will probably take the lead in putting such a model code into practical city use, once an agreement on details is reached by the experts formulating it.

Questioning the Cities

To find out what the cities are doing, and just how much difference there is in local practices, the American Engineering Council has sent out questionnaires to local committees in 125 cities with a population of more than 50,000, and also to 75 additional selected cities where special conditions exist. These questionnaires will show how electric traffic signals are used, what sort of caution and stop signs are used, how tall the letters on them are and what colors and kinds of paint, wood, and metal are considered satisfactory, and so on until a large collection of valuable information regarding traffic materials and devices is set down for study by statisticians and engineers.

The Highway Research Board, which was organized under the National Research Council to coordinate the results of highway research throughout the country, points out

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GEOLOGY

Vesuvius Rumbles

Vesuvius, which is reported restless is not yet dangerously active, volcanologists believe, though the time for a serious outbreak may be approaching.

Following the last great outbreak of Vesuvius, in 1906, several hundred feet of the summit were blown off and the crater was widened and deepened. The new crater, with a depth of 1,200 feet and very steep sides, slowly began to fill up again, and a small interior cone began to build.

Dr. Henry S. Washington, of the Geophysical Laboratory of the Carnegie Institution of Washington, who has visited Vesuvius many times and took part in a special study of its last great eruption, states that the lava level has been rising until it is very near the rim.

"Vesuvius, however, seldom sends lava flows over the rim of the crater," he states. "Usually they break out on the sides of the mountain, accompanied by the eruption of vast clouds of smoke and ashes."

Vesuvius spouting lava is a sight of wonder, but to thousands of people who live within its reach, and to the archæologists who are digging out the old city of Herculaneum it is a menacing spectacle. News from Vesu-

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PHYSIOLOGY

Heat from Heart Beat

A quite normally beating heart, like an automatically equipped storage battery, "discharges" and "recharges" within the period of each beat. From his researches on the hearts of turtles and king crabs, at the Johns Hopkins University, Dr. Charles D. Snyder and his associates have found that even a single beat of the heart will produce heat in proportion to the energy expended.

"This explains at last," Dr. Snyder declared, "the wonder of the heart's great regularity, its constant vitality and the age long mystery of its indefatigability."

In their experiments every precaution was taken to exclude heat from outside sources. The hearts of turtles and king crabs were used because they will keep beating a long time after the animal itself has been killed. A small thermos jar was placed inside a larger one and in the cap of the smaller jar were fixed hard rubber posts to which the muscles were attached. Through the cap were perforations for the wires connecting the thermopile with

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BOTANY

Rubber for United States?

Rubber raising in the United States, a project which enjoyed a renewal of public interest following Thomas A. Edison's recent visit to Washington, is at bottom a problem of the relation of plants to climate. If Edison's hopes of establishing rubber plantations in the United States are to be realized, either hardy forms of the present rubber-yielding plants of the tropics will have to be evolved, or certain rubber-yielding plants native to the temperate zones will have to be bred up to a point where their rubber content will pay for its own extraction.

All the present rubber trees and vines are warm-climate plants. The Para rubber tree, *Hevea,* which now produces by far the larger part of the world's crop on the East Indian plantations, is decidedly a tropical form. It will just consent to grow in southern Florida, but will not grow for money unless it is permitted to hug the equator. It is out of the question for the United States proper, though it would thrive in the Canal Zone and the Philippines.

The original "India rubber" of the Orient was the product of a species of fig, the same tree used as an ornamental in thousands of apartments, and in larger size as a display piece in many greenhouses. This tree is slightly hardier than the *Hevea,* but is still very sensitive to frost, and could hardly be expected to pay its way even in the South unless new

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PSYCHIATRY

Mental Disease in Children

An appreciable increase in the number of young people who fall prey to mental diseases is found by Dr. Menas S. Gregory, head of the psychiatric department of Bellevue Hospital.

People are more enlightened about the danger of letting mental and nervous ills gain headway, and as a result more youthful cases reach the hospital, he says, but this does not fully explain the increase.

"The higher standards of the present day are largely responsible," he states. "The demand for material luxuries is greater today than it has ever been. The longings of youth are more intricate, more difficult to attain. They are more likely to be thwarted. And an increase in thwarted longings and ambitions makes for an increase in abnormal mental and nervous states."

Rubber in U. S.

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varieties better adapted to our climate can be produced.

Perhaps third in present importance as a rubber producer is the Madagascar rubber vine, related to our milkweeds, which Mr. Edison is now trying out in the South. Even in the tropics, it now produces only a small fraction of the world's rubber, but it might be exploited more advantageously by plantation methods and with more modern means of extraction than those now practised in its native home.

In our own semi-arid Southwest, and more extensively in the adjacent states of Mexico, there is a native bush, the guayule, which contains rubber in paying quantities. It has the distinction also of yielding its rubber as tiny bits of the pure substance, not as a milky juice or latex which has to be given complicated and expensive treatments before it can be used. Guayule is now being cultivated by a corporation which has a larage plantation in southern California, but even this native rubber plant requires the desert heat for profitable growth and holds out little hope of becoming adapted to the colder North.

There remain native plants like the milkweeds and dogbanes, which yield a milky juice containing a little rubber or rubber-like material. These are perfectly hardy in the North, and very prolific—frequently too prolific from the point of view of the farmer. But their content of resilient gums is so low that it would be a bold undertaking to try to make them into commercial sources of rubber, even with the best methods now at the disposal of the plant breeder.

Science News-Letter, August 13, 1927

Ants are fond of the nectar in flowers.

The highest pitched musical instrument is the piccolo.

One-tenth of the world's crops are eaten up by insects.

A baby Indian elephant stands about three feet high.

An insect with wings is an adult and will not grow larger.

Numerous deaths of western wild fowl are puzzling biologists.

Vesuvius Rumbles

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vius indicates that Herculaneum is not in danger, Dr. Washington believes, but the important archæological work that is going on there is attracting attention to the situation, and if a new layer of mud should roll down from the volcano, the long awaited excavation of the city might be still further delayed.

In 79 A. D., when Pompeii was buried n 15 feet of ash, Herculaneum, which is several miles closer to Vesuvius, was smothered in from 30 to 70 feet of mud. Six more eruptions buried deeper, and the mud hardened into stone. This stone is now being systematically attacked with pneumatic drills by Italian archæologists, and in less than three months of work they have made encouraging progress, unearthing a street 80 feet below the surface, revealing walls and columns of shops and houses.

The hardness of the stone in which the city is buried has hitherto baffled scientists. Small portions of the city, laboriously unearthed from time to time, have showed that Herculaneum contains remarkable works of art and perhaps the most complete remains of a Roman city anywhere preserved, all of it closely encased in the strange packing of stone.

Science News-Letter, August 13, 1927

Heat from Heart

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the galvanometer for recording heat and for a thread connecting the muscle with a lever outside that recorded the tension. The desired temperature in the inner jar, usually 1 to 3 degrees Centigrade, was maintained with ice. The sensitive thermopile, or heat detector, was placed in close contact with the surface of the muscles, and both heat and tension were finally recorded on a moving photographic film.

It was found that the heart of the king crab produced on the average 71 millionths of a calory per centimeter of length for each gram of tension exerted and that the ratio of heat produced to the tension exerted per gram of weight of muscle was fairly constant throughout the series of experiments.

Science News-Letter, August 13, 1927

The average 20-year old Japanese woman today is two inches taller than the average of 20 years ago, while the height of Japanese men has increased one inch.

Traffic Signs

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that highway safety is primarily an engineering problem, but it is considerably influenced by the human factor.

Prof. S. S. Steinberg, of the University of Maryland, who is assistant director of this board, says that "a recent statistical study of the distribution of blame among factors involved in highway accidents, has shown that the 'human factor' is responsible for approximately 90 per cent. of motor vehicle accidents, and that causes attributed directly to defects in the highway or the vehicle are of small relative importance. Loss of some 25,000 lives annually, the injury of several times that number, and the enormous property damage have focused the attention of many agencies upon this grave problem of highway safety."

So far as the signs on street and road are concerned, this human factor is a complex item which is only beginning to be given full consideration. Most of the signs which rise up to confront the passer-by can be read and understood by any one who gets close enough and looks them over. Many of them are good enough for the automobile driver with keen eyesight and an alert mind. But this is not enough, it is now recognized, so long as there are several million color-blind people, several million with eye defects, the illiterates, and nobody knows how many million that react just a little slowly when they are tired or worried or distracted. For such people a few seconds delay in grasping the message of a sign means the difference bewteen safe steering and a wild effort to bring a car under control in time to avoid danger. It is because of the complex human factor that engineers are now saying that the sign language should be as fool-proof as possible, and so simple and uniform that everybody can read it—and read it fast.

Science News-Letter, August 13, 1927

Tobacco demands more work per acre than any other big crop in this country.

Few alligators live a natural lifetime because of the demand for their hides.

An electric machine that counts coins at high speed is used in the Bank of England.