

PSYCHOLOGY

Prolonged Use of Alcohol Causes Loss of Intelligence

PROLONGED use of alcohol may cause actual loss of intelligence, Dr. Harry C. Mahan, of Warren State Hospital, Warren, Pa., told psychologists at the meeting of the American Psychological Association.

The case of a highly trained professional man who had lost intelligence until he had the mind of a ten and a half year old child was cited as typical of such cases by Dr. Mahan. The patient retains his vocabulary, however, and this serves as an index to his former intelligence, he said. His conclusions were reached from a study of fifty alcoholic patients.

Science News Letter, September 21, 1935

SEISMOLOGY

Earthquake Predictions Should Specify the Place

EARTHQUAKE prophets must "call their shots" more exactly, if they are to expect serious attention from scientific men. They must be able to tell not only that an earthquake is going to happen, but must also specify place and time within reasonably close limits. Moreover, to be counted as fulfilling a forecast, the quake must be of a certain respectable severity.

Notice of these rules of the seismological forecasting game has been posted by two well-known seismologists, Dr. Harry O. Wood of the Carnegie Institution of Washington and Dr. B. Gutenberg of the California Institute of Technology, (*Science*, Sept. 6).

Just saying that an earthquake is going to happen somewhere on the earth on a given day is of little significance, they point out, because earthquakes by the dozen occur almost daily. In a single sample year, the central earthquake reporting bureau at Oxford University gathered records of more than 7,000 quakes of all degrees of severity, occurring in all quarters of the globe. Even fairly large earthquakes, severe enough to be registered on instruments over half the earth's surface, piled up a count of 178, or roughly one every two days throughout the year.

Obviously, even random guessing at earthquake occurrence would find it hard to go wrong if locality is not closely specified, Drs. Wood and Gutenberg indicate.

The tidal forces within the earth, set up by the moon, sun and planets in certain positions, of which much has been

made in recently publicized earthquake predictions, do exist, but they are not in themselves the causes of earthquakes, the two seismologists point out. Actual causes of earthquakes are not known with any certainty, but mounting strains in the rock structures have a preponderating weight of evidence in their favor. Tidal factors may act as triggers when the strain reaches a certain critical point, where the proverbial last straw might cause a break.

However, the forces involved in "solid" tides in the earth's rocks are of widely different orders of magnitude. The moon exerts the greatest pull; the sun about two-fifths as much as the moon, while "effects due to the planets are only an exceedingly small fraction of those due to the sun."

Drs. Wood and Gutenberg deplore the widespread publication of any predictions in the present state of earthquake knowledge, because of the probability of "unwarranted worry and anxiety among large numbers of the population." Persons who have methods they consider good for earthquake prediction can perform a real though unblazoned service, they state, if they will place their forecasts, properly specific as to place, time and severity, in the hands of scientists, and then let the event be their impartial judge.

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CIVICS

National Planning Proposed In 17th-Century England

NATIONAL planning was proposed—and rejected—in England 250 years ago. And Prof. E. G. R. Taylor of the University of London thinks England has suffered ever since from the unwisdom of the choice.

In an address before the British Association for the Advancement of Science, he told of modern-sounding propositions put forth by seventeenth-century planners, including the creation of a green belt around London, the location of industries on selected rural sites, preservation and creation of urban amenities, reforestation, wasteland reclamation, national waterways, a planned agriculture, planned use of natural resources.

But England in those hustling, big-business days would have none of them. Rugged individualism prevailed, and each man did exactly what he pleased with his own property.

Prof. Taylor asked, "What would the geography of England be today had planning achieved the victory over *laissez-faire*?"

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IN SCIENCE

ASTRONOMY

New York's Planetarium To Open October Third

See Front Cover

THE HAYDEN Planetarium of the American Museum of Natural History in New York City will open on Thursday, October 3, F. Trubee Davison, president of the Museum, has announced.

Six times each week day and five times on Sunday the stars will go on parade in the \$650,000 structure. Forty-minute lectures will be given at each planetarium showing, during which the audience of 750 will be shown the positions of the so-called "fixed" stars from 3000 B.C., when Alpha Draconis, brightest star in the constellation The Dragon, was the north star, to the year 13,935 A. D., when the star Vega, now overhead, will be the north star. The motions of the planets through the constellations can be speeded up to take only a few minutes. The swinging of the celestial pole around in a circle, which in the sky takes 26,000 years, can be shown quickly.

Projection apparatus, built by the German optical firm of Zeiss, was purchased through funds supplied by Charles Hayden, in whose honor the planetarium is named. An R.F.C. loan, to be repaid out of the nominal admission fee, completed the erection of the structure.

Dr. Clyde Fisher, curator of astronomy of the Museum, will be active head of the planetarium, with William H. Barton, Jr., as assistant curator.

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NAVIGATION

New Radio Beacon Works On Cheap Crystal Receiver

A NEW Swedish radio beacon has been erected on the Turkish coast of the Black Sea. It is located at a little village called Rumeli and is so constructed that its direction can be checked by an ordinary radio receiver. Even small fishing smacks with an inexpensive crystal set can find where they are, whether in fog or darkness, by tuning in on the new type of beacon. Ordinarily the ships have to have elaborate direction finders, too, in order to benefit from a radio "light" house.

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E FIELDS

GEOLOGY

Iceland's "Great Geysir" Resumes Its Eruptions

THE "Great Geysir" of Iceland, which gave its name to all periodically erupting hot springs of its type in the world, has resumed its activity, after having been "dead" since 1914. In that year, earthquakes accompanying an eruption of the volcano Hecla broke rifts in the geyser's subterranean "boiler," so that it could no longer develop the steam power necessary to throw its water into the air. Apparently natural repairs have now been effected.

Great Geysir seems to be not merely "as good as new" but even better. Before the damage occurred its eruptions averaged a height of about 120 feet; now they exceed 150.

News of the resumption of activity was sent to the German science publication, *Die Umschau*, (Sept. 1), by Dr. A. Rehm of Berlin.

"Geysir" is an Icelandic word meaning "spouter" or "gusher." With the change of one letter, it has been adopted into English as the common noun "geyser." Great Geysir was the first known of all the world's geysers. It stands on a desolate rocky plain, with a number of smaller hot springs and geysers, and one other hot-water vent, not a true erupting geyser, that bears the name of "Strokr," or "the churn."

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PLANT PATHOLOGY

Plant Disease Fungi Evolving New Varieties

EVOLUTION appears to be at its most active in producing new varieties of plant diseases to plague our grain crops. What one species of smut fungus can do in the way of producing new strains was dramatically outlined by Prof. E. C. Stakman of the University of Minnesota, speaking before the Sixth International Botanical Congress.

Prof. Stakman told of a research project in which a single reproductive cell of this smut fungus was isolated and its offspring propagated in the laboratory. Within a few months there were 162 dis-

tinct physiological strains of this one fungus from the single-celled start.

These physiological strains of plant-disease fungi are the more difficult for the scientist to deal with, Prof. Stakman stated, because within a given species they all look alike. They are different only in their behavior. Thus, there is one well-known variety of stem-rust of grain that attacks wheat and barley but not rye and oats, another that attacks rye and barley but not wheat and oats, and still another that attacks oats but none of the other small grains. Under the microscope they all look exactly the same; only their appetites in parasitism differ.

The multiplication of fungus varieties that occurred with the smut specimen in the laboratory is duplicated thousands of times over in the field, all the time. Many new varieties rise through hybridization through sexual crossing of existing varieties, but others occur without interbreeding, through the "straight evolution" process of mutation or "sporting."

There is an endless race between the plant breeder and the natural new origin of these plant diseases. The breeder will carefully produce a new crop variety that is resistant to all known diseases—only to have a newly originated disease pop up to attack it.

Then he has to go to work again. It is a fight in which there can be no quitting. The penalty for that is starvation.

Science News Letter, September 21, 1935

EDUCATION

Sons of Office-Holders Fill German Colleges

NEARLY half of the German students seeking higher educations are the children of fathers in official position, an official survey summarized in *Die Umschau* (Aug. 25) indicates. Of all those in the *Hochschulen*, which correspond more nearly with American colleges than with high schools, 45.6 per cent. are the sons of *Beamten*, or office-holders, 34 per cent. are offspring of parents in independent businesses, 7.7 per cent. are farmers' sons, 5.5 per cent. have parents in academic positions, and "all others" account for 7.2 per cent. of the students.

The heavy proportion of sons of official job-holders is increased, presumably, by the fact that many of the businesses that are in private hands in other countries are state-conducted in Germany. Railroads, telegraph and telephone lines are good examples. Employees of these enterprises, in all ranks, are of course rated as *Beamten*.

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PUBLIC HEALTH

Depression's Children Show Effects of Long Privation

CHILDREN between six and nine years of age in depression-poor families are showing in their weights the results of the change for the worse in their families' fortunes.

Growth in weight of this group of children has been "slightly but definitely reduced as compared with the growth of children of these ages in the group as a whole," Dr. Carroll E. Palmer, consultant in child hygiene of the U. S. Public Health Service, reports. The relative change in height and weight of some 5,000 city children during 1929 to 1933 was studied by Dr. Palmer. The children were of three family groups: those whose families remained in comfortable economic circumstances during the entire period; those whose families remained poor; and those of depression-poor families who had been comfortable in 1929 but had become poor by 1933.

"So far as growth weight of this sample from urban wage-earning families is concerned," Dr. Palmer concluded, "it is children from families whose income has fallen to a low level who have been affected by the economic depression."

The average weight of children from the continuously comfortable families was about 4 per cent. greater than the average weight of all the children taken together, Dr. Palmer found. The average weight of the children of poor families was roughly from 1 to 2 per cent. below the average for the group as a whole, while the average weight for the children of the depression-poor was in between.

Particularly interesting was the trend Dr. Palmer found for the three groups. When he plotted the relative weights (in per cent.) of the groups on a chart, the two lines for the continuously comfortable and comfortable-becoming-poor groups started almost together. The line for the first group remained at the same level throughout the five-year period but the line for the second group inclined definitely downward. The line for the third group, children of continuously poor families, inclined slightly upward.

The material for the study was obtained from a joint survey by the U. S. Public Health Service and the Milbank Memorial Fund of the economic status of approximately 1,000 families each in Baltimore, Birmingham, Cleveland, Greenville, S. C., Pittsburgh, and Syracuse, and from school records of the children in these families.

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