

PSYCHIATRY

**Long-Winded Speeches
Get Start in Babyhood**

A POLITICIAN'S long-winded speech may have had its earliest beginnings when he was an infant and became angered over an interruption at meal-time, Dr. Ernest E. Hadley, psychiatrist of Washington, D. C., told a meeting of the American Institute of New York City.

Babies are so sensitive to the way they are treated by other persons that nurses can immediately tell the unwanted baby from the wanted one by the infant's behavior when it is with the mother, Dr. Hadley disclosed.

If the baby is feeding, and a telephone bell causes an interruption, the infant is naturally resentful. Then if the mother is patient and understanding, the baby may be pacified, but if she, too, becomes exasperated the baby may refuse to go on with the feeding. There is begun the later "feeding problem" that harasses so many baby specialists, parents, and nurses.

The refusal of food often carries over into refusal in general of all suggestions or commands and the baby is said to be suffering from "negativism." In adult life it shows up in many curious and apparently remote ways.

Excessive drinking and smoking have been traced to this original cause, as has excessive speaking. These act as a sort of compensation for the unconscious hostility toward sucking. On the other hand, loss of appetite is also likely to be one of the after effects. The adult who has developed this negativism in infancy may refuse not only to eat, but to kiss or even to speak pleasantly. It may affect any activity connected with the mouth.

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MEDICINE

**Soot in City Air Seen as
Possible Cancer Cause**

SOOT-LADEN city air may be causing cancer of the lungs in the inhabitants of cities. Conclusive evidence for this is lacking, but strong circumstantial evidence is brought forward by Dr. M. G. Seelig and E. L. Benignus of the Barnard Free Skin and Cancer Hospital, St. Louis, in a report to the *American Journal of Cancer* (September).

Human death records and animal studies furnish the evidence with which

the St. Louis scientists pin the guilt of causing cancer onto soot in the city air.

Figures from the U. S. Census Bureau show that lung cancer deaths are more numerous in cities than in rural areas. The relation between the greater number of deaths and the greater amount of soot in the air is close enough, the scientists state, "to warrant more activity on the part of public health authorities in the various anti-smoke campaigns."

The tar in soot and the way soot invades all the structures of the lungs make it capable of causing cancer. Tar itself has long been recognized as a cancer-causing substance. Chimney-sweeps' cancer has been traced to the irritation produced by tar encountered in the course of this occupation. Tar painted onto the skin of mice causes cancer. Whether or not tar, breathed into the lungs with sooty air, could cause cancer, as the death statistics suggest, was the problem the St. Louis scientists set out to solve.

For mice apparently it can and does, which strengthens the assumption that it does also in the case of man.

In a group of mice that lived in a sooty atmosphere over a long period of time, eight out of a hundred developed lung cancer. By contrast, two out of a hundred developed lung cancer in a group that lived in a soot-free atmosphere. The soot was secured by sweeping the flue of the hospital furnace which burns Kentucky bituminous nut coal.

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ARCHAEOLOGY

**Early Palestine Favored
Heads Bulging in Back**

THE CURIOUS fashion of shaping one's head to make it bulge high at the back was known to early inhabitants of Palestine, so British archaeologists digging at ruins of Lachish have discovered. (*Discovery*, August.)

Several skulls, apparently pressed and bound to this shape in the pliant stage of childhood, have been unearthed. They are believed to date from an earlier time than the conquest of the Promised Land by the Israelites.

The odd-shaped skulls are pronounced by archaeologists similar to the head of the famous Pharaoh of Egypt Akhnaton, whose family had this peculiarity, though whether the Egyptian king's long head was naturally deformed or intentionally so has long been debated by scientists.

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IN SCIENCE

BIOLOGY

**The Earth Is Alive
With Minute Animals**

STRIKING new figures on how much life there is in seemingly dead earth have been produced by Dr. G. Frenzel of the Breslau Zoological Museum. He made a count of a number of soil samples taken at the depth of about a foot, in rather dry, sandy meadowland. Of one-celled animals he found nearly 150 million per square yard, and of many-celled forms, principally small insects and mites, approximately 90,000. Bacteria and other forms of plant life were not included in his count.

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VITAL STATISTICS

**Fewer Suicides This Year;
Auto Killings Decrease**

HOMICIDES and suicides both show a decline so far this year, the latest figures of the Metropolitan Life Insurance Company's experience with industrial policyholders show.

"Suicide tends to vary inversely with business conditions," Dr. Louis I. Dublin, third vice-president and statistician, commented. "Whether the present decline in the suicide rate is to be viewed in this light, it is too soon to judge. But the fact is that the suicide rate is back at its 1929 level for the first nine months of the year."

Fatal accidents, which tend to increase with the revival of business, have risen from 54.6 to 58.2 per 100,000 since the corresponding period of last year. This increase has been in fatalities other than from automobile accidents.

Auto fatalities for the entire period of nine months are still below the figure of last year, but this is because of conditions in the early months. In fact, the favorable 1936 record is no doubt due to the reduced automobile traffic last winter during a period of heavy storms. The last quarter has shown a turn for the worse, and the rate for these months alone has been higher than last year.

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E FIELDS

DENDROLOGY

Big Trees Find Age Rival In Sierra Mountain Juniper

See Front Cover

CALIFORNIA'S famous Big Trees, commonly rated as the oldest and largest living things, now have a rival, for age at least, in another California tree, a gnarled old juniper that grows near Hillsborough, Calif., in the high Sierras of Tuolumne County.

This veteran tree has been studied by Dr. Waldo S. Glock of the Carnegie Institution of Washington, who was guided to it by Clarence K. Bennett of Hillsborough. Dr. Glock took several samples of its wood with a core-cutting borer, and carefully counted the annual rings. He figures a conservative age for the tree at 3,000 years. This compares closely with the greatest age known for a Big Tree, 3,250 years.

The Bennett Juniper grows in a wind-swept place at an elevation of about 8,500 feet. The combination of exposure and the natural slow rate of growth of junipers has kept it from attaining anything near the size of the Big Trees. It is only about 80 feet high, but its trunk measurements are impressive: 21 feet 6 inches at the ground, with an average diameter of 14 feet 2 inches five feet above the ground.

The slowness of its growth shows up strikingly in Dr. Glock's borer cores. During the past 700 years the tree has added only two feet to its diameter.

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ENTOMOLOGY

Riddle of Butterfly's "Trunk" Is Explained

BUTTERFLIES and moths uncoil their long probosces, or "trunks," on very much the same principle as that used in the toy paper "snakes" that startlingly dart into your face at carnivals or parties, blown out of a tight coil by the breath of some fellow-reveler. This simple mechanical explanation of one of biology's most difficult riddles has been discovered by Dr. J. B. Schmitt of the University of Delaware.

A butterfly's proboscis is not a simple tube or pipe. It is made of two trough-shaped sections, held together at the edges, so that it "adds up" as a tube through which the insect can suck up flower juices.

In each half, beneath the trough, there is a tube, closed at the outer tip, but communicating with the head-cavity at its base. Each of these tubes is filled with blood. Normally, the proboscis is kept coiled by the pull of many short muscles, arranged diagonally. But when the insect is ready to feed, a valve closes at the base of each tube, preventing the blood from flowing back into the head. At the same time, certain muscles squeeze down on the base of the tube, like a hand on a rubber bulb. This puts pressure on the fluid, which has nowhere to go but out, so that it pushes out into the tube and straightens it.

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CHEMISTRY

Gelatine Is Detected When Added to Cheese

GELATINE added to cottage cheese, cream and other dairy products to make them look thicker and richer can now be detected with ease and certainty, so dairy scientists report.

The new method, devised at the University of California College of Agriculture, is applicable to all dairy products. Heretofore only raw sweet milk and raw sweet cream could be adequately tested for gelatine. Trichloroacetic acid is used in the new test.

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ARCHAEOLOGY

Dream Book Is Relic From Ancient Egypt

A NEW and unique relic from ancient Egypt is a dream book used over 3,000 years ago, to advise whether dreams were good or bad. (*Antiquity*, September.)

The book, which archaeologists call very remarkable, lists various things that an Egyptian was likely to dream of. Each item is followed by the terse verdict: "good" or "bad."

If an Egyptian dreamed of binding fast baleful men at night—good. It meant defeat of his enemy. To dream of munching a cucumber—bad. There would be a quarrel.

The book is one of 18 papyrus manuscripts which the British Museum has just published.

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PHYSICS

Ozone Closer to Earth Over the Polar Regions

THE stratosphere's ozone layer is closer to earth in the polar regions than over the equatorial portion of the earth, Dr. E. Regener of Stuttgart, Germany, concludes (*Nature*, Sept. 26).

Dr. Regener, who is famous for his cosmic ray studies, sent up sounding balloons, which took samples of the air at heights up to 18 miles and brought them back to earth. At this height there is a deficit of 2 to 3 per cent of the air's oxygen content. Above 12 miles there is considerable variation in oxygen content of different samples. Dr. Regener attributes this to the weather conditions.

The lower ozone layer at the poles is probable, Dr. Regener said, because of the decrease in oxygen content at lower heights over the poles than at the equator and because the greater stability of the atmosphere in the polar regions tends to increase the diffusion of the heavy ozone downward.

Ozone in the atmosphere acts as barrier to some of the most actinic of the visible and invisible rays of the sun.

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BIOLOGY

Gas From Apple Skins Stops Potato Growth

THE skins of ripe apples, pears, and Hawthorn fruits produce a gas that keeps potatoes from growing, Dr. O. H. Elmer of the U. S. Department of Agriculture has found.

Dr. Elmer measured a large number of the effects that this gas, produced by the living skin of sound apples, has on potatoes. He found that the respiration of the potato was speeded up, and consequently the activity of all the other processes directly connected with the potatoes' respiration was also increased.

Sufficient concentration of the gas stops potatoes from sprouting, and keeps them well preserved for long periods of time, the experiments show. Chemical investigation disclosed that the unknown gas was ethylene. Interestingly enough, this gas has for some time been used by produce experts to keep citrus fruits while in transit, and to aid in ripening them.

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Bribery and kidnaping were crimes tried in courts of Mesopotamia, 1500 B.C.