

PHYSIOLOGY

"Feeble" 3.2 Beer Hailed as Best for Health and Pleasure

WHEN beer of 3.2 per cent. alcoholic content was first re-legalized in this country, a generation of drinkers brought up on bathtub gin raised voices of protest against such "feeble stuff," and awaited impatiently the day when they could get "beer that is beer—the kind they have in Germany."

But now comes a German Daniel to judgment against them. Brushing aside the odd two-tenths of a per cent., Dr. P. Schmidt, a well-known German physiologist, contends for the superior value of 3 per cent. beer over 4 per cent., from both the personal-hygienic and the sociological points of view.

"There can be no doubt at all," he says, "that our 4 per cent. export beers are not suited for drinking in quantity at Bierabende and similar occasions. Even if one drinks only a quart and a half of beer during a Bierabend (and that is certainly a moderate quantity), he has consumed 60 grams [approximately two ounces] of pure alcohol; and if he takes some of the 4.5 per cent. lager or bock beers the alcohol consumption goes up to 70 grams.

"It is unanimously agreed that such quantities are bad for the health, either on account of the alcohol alone, or in the case of heart or kidney patients on account of the volume of liquid. The toxicity curve of ethyl alcohol rises after 40 grams, and quite steeply after 50 grams."

As a "golden mean," Dr. Schmidt recommends the "excellent light draught beers such as one finds in Bavaria and Bohemia, with 3 per cent. or less of alcohol."

But the 2.5 per cent. beers made by the top-fermentation process slip off the golden mean again, in Dr. Schmidt's opinion. Such beers as Beliner Weiss, Gose and Lichtenhainer, he thinks, get their lower alcohol content at the expense of a too great acidity.

Dr. Schmidt concludes with two words of advice: keep your beer cool, and drink it slowly. He suggests a serving temperature of about 50 degrees Fahrenheit for dark beers, and 43 to 45 degrees for the light varieties. Cool beer seems to give up its alcohol more slowly to the blood than does warm beer.

As for the rate of consumption, he waxes emphatic: "One of the most important principles for all alcoholic drinks is: never take them on an empty stomach. Always eat while you drink, if nothing more than a breadcrust; or better, eat well first, and then drink. Further: drink slowly and sensibly!"

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ARCHAEOLOGY

"Tiger Tomb" With Annex Found at Monte Alban

See Front Cover

A TOMB guarded by the fierce figure of a tiger with bared fangs is a recent discovery of scientists exploring Monte Alban.

The discovery was unexpected. The Mexican archaeologists had chosen a place more than a mile from the cemetery zone of the ancient Indian city, and had begun digging there in hope of finding articles used by the city inhabitants buried in undisturbed layers in the ground. But it now appears that very little of the enormous buried mountain city is natural ground. Every spot seems to have been built up, cut down, leveled, or otherwise changed.

The new tomb, the fiftieth found since 1931, holds the re-buried bones of what appear to be four individuals. Only a few bits of jade and pottery are with them. But the tomb has an annex, or storehouse joining it, piled with the trappings of the dead.

When the stone slabs covering the door of this annex were lifted, the excavators saw at the back a big pile of elaborate black pottery. Heads of fancy gods protruded here, and arms and legs there. The objects, if once neatly arranged, had been tumbled down by the frequent Oaxaca earthquakes.

Five big funerary urns shaped like ornate god-figures were picked out and lined up, making a row all alike as if from one mold. Incense burners, food dishes, and other tomb furnishings were in the jumble.

The most beautiful of the gods whose images were stored here is a figure of Xipe, Mexican god of fertility in whose

honor gruesome flaying rites were held. On this occasion, Xipe bears no special symbols of his gruesome cult, but is shown as a water carrier with a big jug on his back held in place by a forehead strap. That he is no common peon, but a god, is shown by his elegant attire which includes necklaces, pectoral, feather collar and other adornments.

The interior of a tomb similar to number fifty is pictured on the front cover of this week's SCIENCE NEWS LETTER. It is the fortieth discovered, and illustrates clearly the V-shaped construction of the ceiling, niches in back and side walls, quantity of plain, black pottery and the customary number of five ornate funerary urns. Three sit on one side of the extended skeleton and two on the other. The tomb is about a yard wide. Earth, sifting through cracks in the stone, has covered the stone floor and the objects on it with a thick layer.

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AVIATION-METEOROLOGY

Ideal Flight Paths Planned By New Graphical Method

AIRPLANE TIME records for flights of 500 miles or longer now await the will of the meteorologist. With the use of the modern high performance plane whose cruising speed is not materially affected by higher altitudes, as much as a fifth in time may be saved by choosing the correct flight path.

Combining a consideration of the air mass fundamentals and many arduous aerodynamical calculations of aircraft performance, W. C. Rockefeller, research fellow in the meteorological department of the California Institute of Technology, has developed a graphical method to determine the most efficient flight course for a given airplane. Thus shortened time schedules for air transport companies can be expected. Where punctuality in schedules is more desirable than time records, lower operation costs will result by using a lesser fraction of the allowable power output of the engines whenever meteorological conditions are favorable.

The chart contains various calculated rates of climb curves for the takeoff point and similar rates of glide curves for the destination point. Since climbing takes time and gliding saves time, the obvious path is that one which gives the minimum time for climb and maximum for glide.

The meteorological variables are very

important and consist of wind velocity, its change with altitude, and the angle it makes with the course. With the aid of a cleverly devised table, the effect of the winds aloft upon the rated cruising velocity of the airplane is obtained, and this effective cruising speed is plotted upon the chart. The intersection of the maximum effective cruising velocity with the minimum rate of climb and maximum rate of glide curves results in the most efficient flight

path.

Although the theoretical considerations are complicated, the resultant graph is quite simple and a best flight path can be determined in fifteen minutes. In transcontinental flights, however, the meteorologist must correct for the progress of waves in air masses which will influence the winds aloft at the time the airplane will be flying over a given area.

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MEDICINE

Cancer Growth Checked By Kidney Secretion

Substance Found in Secretion of Expectant Mothers Retards Cancerous Growth in Mice and Rats

A SUBSTANCE that produced a tenfold decrease in the growth of cancers in mice has been found in the kidney excretion of expectant mothers, it was announced by the International Cancer Research Foundation in its first scientific report.

The discovery of this substance was made by Drs. Henry J. Ullmann, Fritz Bischoff and Richard D. Evans, with L. C. Maxwell, chemist, of the Santa Barbara Cottage Hospital, Santa Barbara, Calif., whose studies were made under a grant from the foundation.

So far the studies have been made only on experimental animals. No application of the results to the treatment of human cancer was reported.

The fact that a small but important gland in the head, the pituitary gland, produces a growth-promoting substance which affects the growth of cancers was the starting point for the studies which led to the discovery of a cancer-inhibiting substance in the expectant mother's excretion.

X-ray treatment of this pituitary gland significantly retarded the growth rate of cancers in mice and rats under certain conditions, the Santa Barbara investigators found. However, this could not be applied to the treatment of cancer unless a way could be found to X-ray the pituitary without destroying its ability to produce certain other important substances, such as the sex hormone.

The decrease in cancer growth rate obtained by X-raying the pituitary was augmented in some animals by injec-

tions of a preparation from the kidney excretion of expectant mothers, Dr. Ullmann and associates found. This suggested a more practical method of treating cancer. The next step was to try the kidney excretion without the X-ray treatment.

According to the most successful experiment reported, an amount of this substance equal to thirty times the weight of the mouse contains enough inhibiting substance to produce a tenfold retardation in the growth of the tumor.

The substance which checks tumor growth is not the sex hormone which has been found in kidney excretions of women and other animals before the birth of offspring and which forms the basis of the very delicate Ascheim-Zondek test for pregnancy.

Whether the new substance has a specific effect directly on the cancerous growth or whether it checks the growth indirectly by destroying the growth hormone of the pituitary gland has not yet been determined.

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ANTHROPOLOGY

The Annoying Cowlick Is a Strictly Human Trait

SCIENCE has discovered something good to be said for that plague of mankind—a cowlick.

Every mother who brushes desperately at her son's hair to subdue a bristling cowlick at the crown can take

comfort. A cowlick, anthropological investigations have disclosed, is a truly human trait. It is typical of man alone. However monkey-like may be Junior's behavior at times, that cowlick—if he has one—is a reassuring badge. He's human.

Dr. T. D. Stewart, physical anthropologist of the Smithsonian Institution, is making a study of the directions in which hair grows over the whole body. He is comparing man in this respect with various numbers of the anthropoid family, the gorillas, chimpanzees and oranges.

Orang-utans have a somewhat similar pattern of hair to the human cowlick, but it occurs on the back of the head, not the crown. The cowlick is a point of divergence, at which the hair streams out in all directions.

The cowlick is the most conspicuous divergence of hair in a human being, but the hair direction pattern of the back is perhaps even more striking, Dr. Stewart's investigations show. The hairs start from both sides and converge at about the middle of the spine. In anthropoid apes the back hair streams downward from the back of the neck and shoulders, suggesting a continuation of the head hair pattern.

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RADIO

High Power May Make Radio Stations Interfere

RADIO tuning which separates stations according to their wavelengths may not be sufficient to prevent interference if the power of broadcasting transmitters is sufficiently increased, Dr. Balth van der Pol, director of the Philips Radio Works in Eindhoven, Holland, stated before the meeting of the Institute of Radio Engineers.

Dr. van der Pol reported that interference has been noted in Holland between two distant high-power European broadcasting stations separated in wavelength by over 800 meters. If these conditions appear as the power of American broadcasting stations is increased, the Federal Radio Commission may have new problems to consider.

Dr. van der Pol, who directs one of the largest radio research organizations in Europe, attributes the observed interference to an interaction or cross-modulation of the two high-power signals in the region of the upper atmosphere called the Kennelly-Heaviside layer.

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