

DR. CHARLES A. BERRY Personal Physician to the Astronauts
"Health and the Space Age"

"I Go by the Rules"

Assateague is a lonely, sliverlike island off the eastern coast of Maryland, long an expanse of sand merely for wild birds.

In recent years, however, it has come into public attention because of increasing commercial development. To control this situation, and to preserve the island as a park area, Congress took action in its 1965 session to set it apart as a National Seashore, one of the nationwide system of parks.

This commendable action, though, has come not without years of battle on the part of public-spirited citizens, perhaps the most outstanding being a gruff, outspoken conservationist named William E. Green.

For ten years he carried on a crusade to preserve and develop the thirty-two-mile sandspit for public recreation, becoming so closely allied with the island's cause and expending so much of his time and a considerable fortune that he came to be known as "The Senator From Assateague."

The fight began, he said, when he watched surveyors laying out streets "on sand that's underwater part of the time."

Part of Mr. Green's campaign was to visit Secretary of the Interior Stewart Udall and plant the seed there that would sprout and ripen into the National Seashore idea.

Unnumbered were his myriad appearances before civic organizations, public groups, legislative committees, and government authorities to plead Assateague's cause. The campaign moved slowly on, but generally in the right direction. He approached the time when the State of Maryland would approve sale of the island for park development.

Then it was he discovered he would not see the fruits of victory for his cause—he had cancer, the terminal variety.

"When you write my obituary," he requested, "you can call me rough, tough, nasty—call me anything—but just say this: I go by the rules."

At age fifty-seven he went by the rules, succumbing to lung cancer, one of thousands of smokers who "by the rules" (of inevitable consequences of long-term smoking) tragically shorten in this way their lives of service and productivity.

Francis a. Soper

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If you are forgetful, relax-"Forgetting Can Be Fun.'

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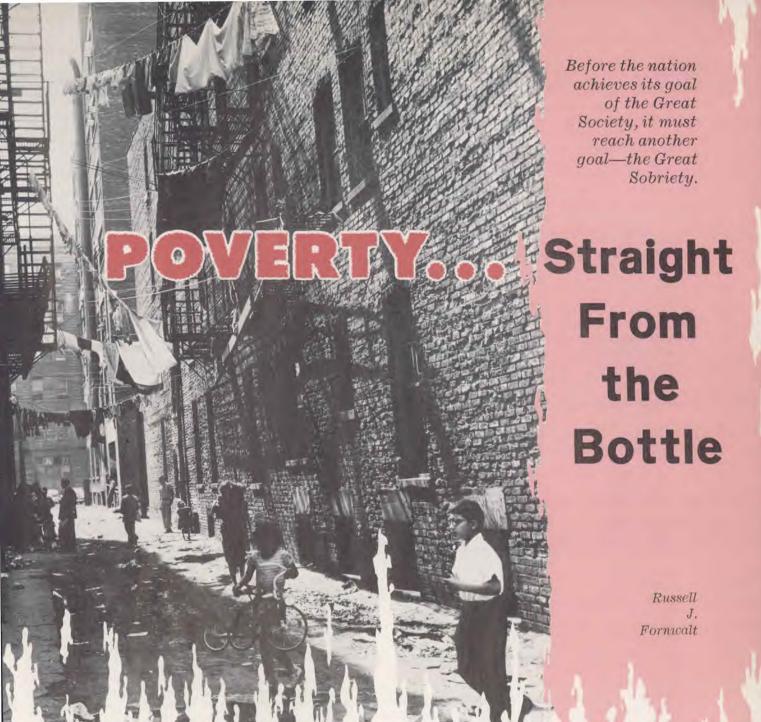
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MRS. A is on public welfare. As soon as she receives her semimonthly allotment check of \$87.92, she heads for the neighborhood bar. Much of her relief money is spent there while three small children go without enough food and clothing.

Mr. B is in a mental hospital. He is there because of complications resulting from chronic alcoholism. His chances for rehabilitation are slim. He will probably be institutionalized the rest of his life. It is costing the state—the people, that is—about \$2,000 a year for his keep and care. This is in addition to the fact that his wife and family are on public welfare.

Miss Y was a brilliant fashion illustrator. Before she hit the bottle—and the bottom—she was tops in her field.

Now she has deteriorated mentally, physically, and morally.

Bill Z is a teen-ager who once dreamed of and planned for college. While in high school he had a part-time job. Every week he put \$5 or \$10 in the bank for his education. Then he got mixed up with a fast crowd. There were wild parties on Friday and Saturday nights. Bill's earnings were not enough to pay for his so-called fun, so little by little he withdrew his savings, and in time his bank account was closed—so was a dream, a college career.

These are four actual case histories of poverty, of welfare cases. There are, of course, thousands of A's and B's, Y's and Z's. They are in every community. Some of

EXAMPLE OF A CITY

Of course not all the billions of dollars spent on liquor are spent by people in need or on charity, but a considerable percentage of this amount is thus spent. For example, it is estimated by the Bureau of Public Assistance of the County of Los Angeles that "approximately 25 percent of the single men and 15 percent of the single women who are recipients of county welfare payments have a condition of alcoholism which is the primary problem in relation to their status as a relief recipient."

This same bureau says that "the cost of welfare payments under all categories of aid to individuals and families involving alcoholic problems was estimated in 1961 to be \$10,000,000, plus proportionate administrative costs of an additional \$1,021,-210. To these costs must also be added the cost of care of the 5 to 7 percent of patients admitted to the county hospital whose primary diagnosis is the result of their being alcoholic or in whom alcoholism is a very important factor." Cost of their care is between \$1,000,000 and \$2,000,000 of the hospital's \$28,000,000 budget. "It is safe to say," the Bureau of Public Assistance reports, "that the combined total cost to Los Angeles City and County for arrests, jail confinement, hospitalization, and welfare payments to individuals and families involving alcoholism, amounts to approximately \$20,000,000 per year."

them may be in your office or factory, perhaps in your own home.

The United States is engaged in a vast antipoverty effort, planning to spend billions of dollars to rid the nation of unemployment, poor housing, and other social and economic ills.

A Job Corps has been set up to train idle youth and sponsor vocational retraining programs for unemployed adults. Vast sums have been voted to remove slums from the cities. Millions of dollars will be spent for medicare, expanded social security, and better schools. The overall objective of this antipoverty program is the Great Society.

But this is not the first time the nation has engaged in an all-out antipoverty war. Similar programs have been carried on almost continuously since the great depression of the thirties, packed under such names as the New Deal and the New Frontier. The sad fact about these antipoverty programs is that they do not end poverty. They become mired in politics. Their local purposes are corrupted by self-seeking officeholders and grafters; and when all the money is spent, the people are right back to the same old unemployment, rat-infested slums, and juvenile delinquency.

The Great Society is indeed a lofty and worthwhile goal, and the designers of the antipoverty program are doubtless acting in good faith. But until there is a Great Sobriety, there can be no truly Great Society.

Much of our poverty today comes straight from the bottle. For example, in 1963 people in the United States spent \$5,664,000,000 in liquor stores, this sum representing about half of what was actually spent for drinking. According to information from the United States Bureau

of the Census, the percentage of the consumer's dollar spent on liquor jumped from 1.9 in 1952 to 2.3 in 1963. In other words, more drinkers are drinking more.

The full poverty story is not told in retail sales statistics alone. Such statistics, as a matter of fact, are only the beginning. We must see what happens after the wine and whiskey are consumed. Therein lies the real tale.

Let us look at a few crime reports for 1963. In that year, according to the Federal Bureau of Investigation, there were 1,419,533 arrests for drunkenness, 179,554 for driving while intoxicated, and 107,818 for liquor law violations (in 2,914 cities with over 2,500 population). These arrests account for a staggering 42.4 percent of all arrests made.

Almost half of the national crime bill, then, also comes straight from the bottle. It is costly to apprehend, convict, and incarcerate various and assorted alcoholic offenders. Every dollar spent in this way makes the nation poorer in other ways.

Poverty a la liquor takes other forms. The steady or heavy drinker ends up poverty-stricken as far as a career is concerned. His efficiency decreases as his absenteeism goes up. Either he fails to win a promotion, or he loses his job completely. Millions of dollars' worth of craftsmanship and genius are lost.

Thousands of men and women in mental hospitals are suffering from acute or chronic alcoholism. Here is poverty at its worst, linked to despondency, despair, depravity, and a sense of defeat. Talent is going to waste. Institutionalized fathers and mothers deprive their children of much-needed love and affection.

The Great Sobriety and the Great Society can be achieved only when the people, as individuals, revise their values, increasing their awareness of the lack, loss, and limitation which liquor imposes.

EXAMPLE OF A STATE

In a study based on reports from the state's Rehabilitation Department, the American Business Men's Research Foundation has found that during the fiscal year from July 1, 1963, through June 30, 1964, the State of Wyoming paid \$4,466,009 in public assistance to the needy, of which \$702,026 was spent in 1,039 cases where alcohol was a factor contributing to need. This means some 15.7 percent of the total public assistance monies spent by the state.

If a similar condition existed across the nation—and logically it would be more acute in the larger metropolitan areas—the total expenditure of welfare and public assistance funds because of alcohol involvement of the recipients would total more than \$821,267,000. The total expenditure for 1963 was \$5,231,000,000, or a per capita of \$27.42.

It is evident, according to the Foundation's "Report," that the Government is actually encouraging the drinking of intoxicants in the ranks of the needy, and on the other hand spending additional public funds to support rehabilitation programs to assist victims to rid themselves of the habit.



Though in excellent health in every respect, Astronaut Edward H. White II experienced highly accelerated heart rates in connection with his famed space walk. Obviously, in ever more difficult space assignments the human heart requires versatility and stamina that can result only from giving this vital organ the best of care.

THE SPACE AGE is neither changing the basis of good health, nor is it altering its necessity. It is rather emphasizing in a new and vigorous way the many principles of health as we have always known them. It is clearly indicating that if a person is to succeed in any difficult profession or assignment, good health is of

primary importance.

With good health it is obvious that a person is better able to accomplish his purposes and to reach his objectives, but in the Space Age we are dealing with unique, unknown factors, especially with those having to do with environment. We are, for the first time, placing man in a hostile environment in which there is literally nothing he can rely on to sustain himself. He must take his gaseous atmospheres and pressures, his food, water, and energy supplies with him, or perish.

Because of the challenge of these uncertain space fac-



OUR COVER

No moment during a space mis-No moment during a space mission goes by without a careful medical check being made on the heart action and bodily function of the astronauts. In charge of this constant monitoring is Dr. Charles A. Berry, who is "Mr. Space Doctor" himself. Listen's cover this month is by courtesy of NASA.

tors, it is compulsory first of all to eliminate all known health hazards. Basic good health is vital to the success of the entire space program. Our health and medical



Shortly before he dons his pressure suit for a twenty-two-orbit mission around the earth, Astronaut L. Gordon Cooper has his temperature and heart action checked by Dr. Howard Minners.



In order to assess the capacity to do physical work under space-flight conditions, astronauts use this Bungee cord, which requires a sixty-pound pull to stretch it to its one-foot limit.

Preflight medical tests include a check of the astronaut's eyes. Virgil Grissom being examined prior to his March (1965) flight.



Dr. Charles A. Berry (here with Astronaut Alan B. Shepard) he charge of all health, medical, and safety aspects of NASA's Manne Spacecraft Center, and serves as personal physician to the astronauts.

A veteran of fifteen years of mil tary service, he was rated as a senior flight surgeon with the Air Force and was qualified as a "space surgeon" in 1960. In 1962 he was awarded the USAF Certificate of Achievement in recognition of outstanding qualifications in the specialty of aviation medicine.

Dr. Berry was a member of the team who launched America's first orbiting astronaut, John Glenn. He has been an essential part of each flight since, including the recent one of Walter Schirra, Jr., and Thomas Stafford in Gemini 6 and James Lovell, Jr., and Frank Borman is

Gemini 7.



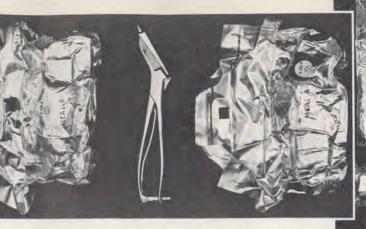
program is largely one of preventive medicine—the a ticipation or prevention of every possible danger health.

Astronauts are normal people, both physically ar mentally. But it is essential that they be selected car fully. They must have as few abnormalities as any h man being can possibly possess. They are "the crea of the crop." Traditionally the protective devices ar equipment that have been used have not been planne to alter man himself. Every effort has been made assure the provision of a "natural man," a specimen near physical perfection as possible under normal co ditions.

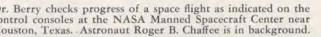
Doctors in the space program are faced with a som what different problem from that of the average doctor. We deal with normal, healthy people, and try to kee them that way, while the average doctor deals almost exclusively with existent abnormalities and disease conditions in various stages.

Astronauts are chosen from pilots in the Air For who routinely fly high-performance aircraft as part their continuing training program. All pilots are heal

Listen, February, 19



emini space food, along with scissors to open packages.





onscious and know they can allow no room for health histakes. The space medical program builds on that bundation and is intended to preserve and improve that

A flight surgeon often is looked upon as a threat, since is empowered to ground a pilot if he considers that he pilot's health presents any danger to a flight, but it is ur real purpose to keep the men flying. If they don't y, we feel that it is evidence of failure on our part.

Small items, often thought of as being nonessential, an prove most important in our program. For example, we emphasize adequate and restful sleep, especially during the preflight period. The training program itself is onstantly a demanding one. Especially is this true of ne last week or so before a flight. A blast-off signals a renuous time for all concerned. We simply cannot work eight hours and then "knock off." The whole bace program involves unrelenting attention and exeron. We live and breathe space flight. Astronauts have een described as "the busiest people out of this world."

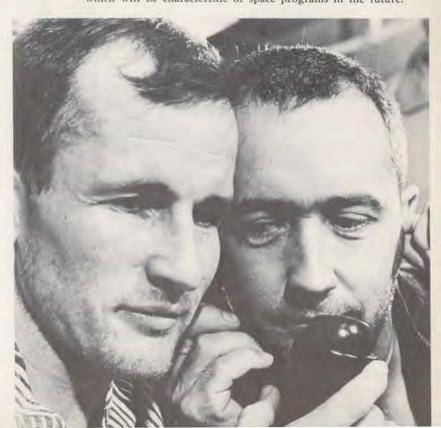
The medical background of the astronauts must be ne of complete normalcy in every area of the body—no Space foods used by astronauts are arranged in this display. Also shown: gum for oral hygiene, wet wipes for cleansing, and a water dispenser.



Forcing food through a mouthpiece, a researcher tests an experimental dish that spacemen will eat in flight. Plastic containers on table equal conventional meal in foreground.



Prime crew for the Gemini 4 flight, Astronauts Edward H. White II (left) and James A. McDivitt, return successfully from their mission and receive telephone congratulations from President Johnson. Their four-day, sixty-two-revolution mission emphasized health factors necessary for the longer-time flights, which will be characteristic of space programs in the future.



ood health.

Walt Cunningham



Target: moon. This is the virtual watchword of the space program these days, and high on the list of possible members of the first moon team is Astronaut R. Walter Cunningham, whose consuming ambition is to be in on Apollo, the first lunar shot. An astronaut since October, 1962, Walter spe-

An astronaut since October, 1962, Walter specializes in monitoring the design and development of the electrical and sequential systems of the Gemini and Apollo spacecraft and aiding in planning lunar surface experiments for Apollo.

"Astronauts think health—they must. All their energies are directed with this overall aim in mind. For example, it isn't required that an astronaut abstain completely from alcohol or tobacco, but such things are subordinated to intensive preparation for space work. Anything that interferes with such preparation is left out. The ultimate purpose takes precedence.

"I suppose the amazing thing is the fact that this stuff (tobacco) can lie around for months, and you just don't touch it. You have other

things to do.

"Most important in any person's life is the marriage of the physical and the mental. This involves the 'whole' man. I feel sorry for anyone with a capable mind but who is unaware of the need for physical development. Such a person is missing half of life."

major abnormalities, no stomach ulcers. Tests on the lungs and the heart must show excellent results. There must be maximum accomplishment on the treadmill test. There must be no history of excess weight, and the weight must be carefully watched. If a person tends constantly to be heavy, it often indicates an unsatisfactory attitude of mind, for he is deliberately allowing himself to disregard dietary habits.

Astronauts constantly receive the benefit of medical lectures on anatomy, physiology, general health habits, and dietary control. However, with the specific aim and all-important ambition toward which he aspires, we

do not need to keep emphasizing the details of his physical habits and the importance of keeping healthy. He automatically tends to take care of these things.

Each astronaut scheduled for a space flight has his diet controlled carefully and specifically for a period of two weeks prior to his flight. During flight his food is of the freeze-dry variety which is rehydrated when used. It is of the low-residue, low-bulk variety, because of the restricted environment during flight.

Space flying requires an entirely new concept of the preparation and use of food. Restrictive weight penalties force upon us the new technology of perfecting nutritionally ideal foods. Exact metabolic requirements for each person must be defined, and adequate diets made up to meet those requirements. Weightlessness requires the establishment of a new dietary regime, from controlling the amounts and consistency of foods consumed to the actual methods of eating.

For longer flights, which will be characteristic of the space program of the future, production of foods in space is an active area of research. Sugars have already been produced from carbon dioxide expired by man.

Every one of the original seven astronauts was either a nonsmoker when he was selected, or stopped smoking in connection with his training program. Astronauts are encouraged to avoid smoking, or to stop if already smoking. The habit of smoking is only degenerative and dangerous. Obviously there can be no smoking during the flights both because of the confinement within the space suit and because of the astronauts' dependence upon a constant oxygen supply.

Preparation for flight is a detailed and precise operation. Two weeks prior to a flight we cut out coffee for the astronauts, since it is unthinkable that during flight an astronaut, while tense, will feel that he needs coffee for relaxing his nerves. Most people who drink coffee tend to drink too much. This tendency simply won't work in connection with the space program. The astronaut, before he takes off, must not have experienced headaches or made other adjustments that usually accompany the quitting of coffee.

There has been a general policy in aviation, certainly in the military, that a pilot requiring drug therapy should not be flying. We feel that missions and equipment should always be planned within the capabilities of the crew, but if it becomes essential to extend the crew's performance further, drugs such as amphetamines may be used at crucial points, if they are carefully controlled.

Repetitive use, however, should be avoided, for it is not possible to create a superman with drugs, and it is possible to overextend man.

We still tend to feel that a carefully selected and trained astronaut is better able to accomplish his mission without the use of drugs, thereby adhering to the "natural man" theory. In other words, in health matters, the less of what might be termed "artificial" the better.

Perhaps the emphasis of this principle is a major contribution the space program can make in setting the pace toward better health for the people of our day, thus showing in the persons and performance of the astronauts that health in all its vigor and vitality is a major goal not only to be attained but also to be maintained.

LISTEN Color Streak Special



General Eisenhower, here smiling as he celebrates his seventy-fifth birthday, won one of his greatest victories when he quit smoking.

It was not easy; it took a real battle. When asked a year later if he was ever going to take up smoking again, the general replied, "I don't know about that, but I'll darn well never give it up

Lung Damage Can Be Reversible If the **Smoker Quits Habit**

"The time to stop is now!"

According to research reported by Dr. Thomas Carlile of the American Cancer Society, it is possible to restore health to precancerous lung tissue damaged by smoking.

The body shows a good deal of ability to repair itself, if given the chance, he told a Society conference in New York. The narrowing effects observed in blood vessels, the increase in heart rate and blood pressure, and many of the symptoms of damage to the respiratory system reverse themselves once the cigarette habit is discontinued.

The death rates from heart attack

The death rates from heart attack among those who have stopped smoking cigarettes fall rapidly to the lower rates of those who have

never smoked.

He observed that lung cancer, once established, cannot be reversed, and must be treated by surgery or radiation, or both. For a time, how-ever, before invasive cancer is established, precancerous changes occur in the cells; but these gradually dis-appear when cigarette smoking is

So it is that a smoker can regain lost ground by quitting the habit-

now.

Government Is Both Pro and Con on Tobacco Issue

"Disturbed." No Valid Excuse for Drinking

Most problem drinkers are no sicker emotionally than other peo-ple; they are merely social drinkers

who have gone wrong.

This is the studied conclusion of Dr. Paul O'Hollaren, chief of staff of the Shadel Hospital in Seattle, who has specialized in developing treatments for alcoholics.

The symptoms of alcoholism, particularly the dependent craving, are physical and not psychological in nature, he declares. They result from the building up of poisonous by-products because of the failure of enzymes in the liver to burn up the

"The liver is exhausted, and the accumulation of toxins that eventually damage the brain begins," he

explains.

Dr. O'Hollaren describes the effects of these toxins—chiefly lactic acid and acetaldehyde—on the brain as "brutal," much the same as oxygen starvation, resulting in a slow-ing down of all brain functions.

Dr. Frederick Lemere, psychiatrist at Shadel Hospital and colleague of Dr. O'Hollaren's, also declares that the large majority of problem drinkers are not "grossly disturbed" people.

Both doctors say their experience has led them to believe that about 65 percent of alcoholics have no personality disturbance that would make them unable to get out of the 'alcohol trap.

"All people have the same prob-lems," says Dr. Lemere. "But where most escape by watching TV or playing golf, the alcoholic gets drunk."

FBI Careful of "Image"

Smoking doesn't seem to enhance the public image for FBI men.

Two of the officials monitoring the tapings for a TV show depicting the FBI in action cracked down on an actor with a leading role for conduct considered unbecoming to these Federal agents: coat unbuttoned, hands in pockets, and smoking.

The United States Department of Agriculture is actively subsidizing the growing of tobacco, while the Surgeon General is busy pointing out the dangers of its use.

For the past two years, Federal research on tobacco has been carried on at a cost of about \$7,200,000. In 1964, an additional \$1,500,000 was appropriated for use on burley in Kentucky, while \$175,000 was voted to study flue-cured tobacco at Oxford, N.C. The Agricultural Research Service asked for a continuation of these archives are account to the continuation of the continuati tion of these research efforts and



Government grants support tobacco research, including the attempt to find "safer" cigarettes from vegetable leaves. Here Robert W. Case of Roswell Park Memorial Institute inspects some drying cabbage leaves used in this search.

for an additional \$575,000 for Maryland and flue-cured tobacco.

The reason is given that, through breeding methods, it may be possible to reduce the amount of hazard-ous materials in the leaf. One North Carolina newspaper states: "Since tobacco means a living for so many farmers and workers in North Carolina, this type of research appears highly desirable."

In This NEWS

- How long can you expect to live? See page 10.
- "I love you" can help break the smoking habit. See page 11.

 Juniors, here's a science experiment! See page 12.



No Help for the Heart

Instead of easing circulation by "relaxing" or dilating blood vessels, as has long been claimed by doctors who prescribe a drink or two for elderly patients or for those with circulatory ailments, alcohol may hamper circulation because it contributes heavily to cholesterol de-posits in the blood vessels.

Medical research at the University of Tennessee, headed by Dr. Gerald Spurr, also shows that alcohol causes fat deposits in the liver and damage to the bone marrow.

Dr. Spurr points out that alcoholic hepatitis is more prevalent than is realized, and can be brought on by regular drinking, even in "yery moderate amounts." "very moderate amounts

Only known cure: Complete bed rest, often prolonged, and no drink-

Are You Too Fat?

Does the nickname "Fatty" really

apply to you?

apply to you?

The average American is from 20 to 25 percent fat. Some are up to 50 percent, if they can't find time to exercise and merely sit before the TV, with chips and dip. Olympic athletes get fat down to about 5 or 6 percent of their body weight.

Any person, to keep healthy, needs two things: proper diet and exercise, according to Dr. Laurence E. Lamb, of the Air Force School of Aerospace Medicine, who is primarily

space Medicine, who is primarily responsible for keeping Air Force pilots fit to fly.

He favors two thirty-minute exercise periods a day, starting easy and gradually building up. "When people are taking fat off their waist-lines, they are also taking fat off the inside of the blood vessels.

Man Seen as Mortal, Science Can't Make **Him Live Forever**

Man at best can expect to live eighty-one years on the average.

This is the opinion of a panel of scientists reporting to a seminar sponsored by the Federal Govern-ment's National Institute of Child Health and Development meeting in Washington, D.C.

The average life expectancy now in the United States is just under

seventy years.

If we had no cancer at all, according to Dr. Robert R. Kohn, a pathologist at Western Reserve University, the average life-span would go up only one and a half to two years.

Conquest of arteriosclerosis, the hardening of the arteries which produces most heart attacks and strokes, would add "about seven years" more to the life expectancy, he declared.

Counting other lesser medical advances, Dr. Kohn estimated from his

study of human mortality statistics that "eighty-one years is presumably the best we could do as far as the average life-span is concerned." "If you don't die of one thing, you die of another," declared Dr. Albert I. Lansing, anatomy professor at the University of Pittsburgh. "There is finite period to the life-span of all a finite period to the life-span of all organisms, including man. There is such a thing as natural death.

That cells can't be kept alive indefinitely has been proved by recent test-tube experiments, he said. If they remain normal, the cells al-ways die after a certain period of

"Aging is a normal disease," said

Smog Is Not Major **Lung Cancer Factor**

Many smokers have taken comfort in the suspicion that city air may be more of a factor in causing cancer than cigarettes. Moreover, spokesmen for the tobacco industry have argued that the relative roles of smoking, air pollution, and other factors in causing cancer have not as yet been clarified.

Now evidence that seemingly absolves air pollution as a major cause of lung cancer is presented by Dr. Warren Winkelstein, Jr., professor of preventive medicine at the State University of New York in Buffalo.

His report concerned the study of 77,811 white males between the ages of fifty and sixty-nine, classified according to their economic status, the level of air pollution in their home neighborhood, and the cause of death, for the 5,950 who died.

Of these, 3.1 percent died of chronic respiratory ailments and 6.1 percent from lung cancer. The second largest cause of respiratory deaths, 1.7 percent, was emphysema. Dr. Winkelstein found that for all

economic levels the death rate from chronic respiratory diseases was markedly higher in areas of high air pollution. On the other hand, cancer of the lung and air passages was actually lowest in the most pol-

luted sections.

Dr. Walter W. Holland, who has conducted similar studies in Britain, says that air pollution increased the rate of chronic respiratory disease by 120 percent, but that smoking raised it 600 percent. No clear link between lung cancer and airborne irritants has yet been proved, he de-



Higher Heights

"Congratulations on a hard-hit-ting, fast-moving sheet. Listen when it was introduced was, and still is, a great magazine, but *News* carries it to even higher heights. I for one am 100 percent behind you."

Carl Sundin Loma Linda, California

Youthful Approach

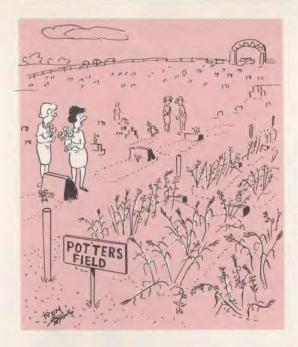
"My congratulations on Listen magazine and its News service. I think it is excellent with its youthful approach. I use it at Wyoming Seminary where I teach."

Mrs. William O. Powell Plymouth, Pennsylvania





FEBRUARY, 1966 LISTEN NEWS



"I don't knowprobably rye and hops.

"I love you" -- new aid to quit-smoking

If parents at times are so tied to their smoking habit that they can't quit, much as they would like to, perhaps their children can help them.

Here's a suggestion by Dr. Ernest L. Wynder of the Sloan-Kettering Institute for Cancer Research in

New York:
"We'll often do for others what we won't do for ourselves. Maybe you can get your father to stop smoking by saying, 'Look, I kind of love you in a way, and your chances of having lung cancer or heart disease are greater if you smoke. It surely won't make me happy to be an early orphan, so if you won't quit for your own sake, do it for me.

Furthermore, for teen-agers he suggests that if they get the idea that the "real leaders" are those who have self-control to overcome a habit like smoking, the "status" will be all on the side of the nonsmoker.

Cheap, Say Doctors of Medical Costs

Doctors are not so expensive after all-according to the doctors.

Twenty years ago, says the American Medical Association, it took the average factory worker 24 percent more time on the job to pay his doc-tor bills than it does now. During those two decades the hourly wage of factory workers has climbed by 150 percent, and overall per capita income by 113 percent. In comparison, doctor fees have gone up 89.8 percent.

Even postal rates have gone up

more steeply, increasing 100.8 per-

cent in twenty years.

More than \$11 billion were spent by Americans in package liquor stores, cocktail lounges, and taverns in 1963. This is nearly twice as much as Americans paid their doctors. Up-wards of \$5 billion more went for tobacco.

In fact, for all phases of health care, including hospitals, doctors, dentists, drugs, and allied costs, Americans spent about \$23.5 billion. Out of every dollar spent in 1963, about six cents went for medical care.

It seems that, were it not for the alcohol and tobacco, the doctors would have much less to do. The billions spent for these drinking and smoking habits result in untold millions in medical costs for the American people.



S CHARACTER FIXED AT AN EARLY AGE?



No. Character is apparently never permanently fixed. Even adults sometimes become rather basically changed in important respects. It is probably true that the earliest experiences are the most important and that the younger the child the more flexible he is. But the idea that a person is permanently "lost" or "saved" by the time he is six or eight is without scientific foundation.

How can I keep my eleven-year-old girl from smoking? I work and can't be with her all the time.

Do you have an opinion, or an answer? Write your reply briefly and swer? Write your reply, briefly and to the point, to the Editor, Listen, 6840 Eastern Avenue, N.W., Washington, D.C. 20012.

LAST MONTH'S QUESTION:

"I don't want to offend people, but I would prefer them not smoking in my home. To keep the peace, however, should I provide ashtrays for them, and endure their smoking?"

OUR READERS' REPLIES:

"Definitely no ashtrays. If I am asked, I reply so unenthusiastically that some get the point."—K. M.

"Most people admire your frankness when you say, 'We prefer that our guests do not smoke inside. Tobacco odor is so hard to get rid of.' -S. M.

"As so many smoke nowadays, the average smoker assumes that host-esses really don't object. A degree of tolerance would seem to be necessary."-M. B.

"If visitors light up, I would certainly protect the furniture and rugs by providing ashtrays."-J. S.

"When visitors begin to smoke, I tactfully bring out an ashtray. This gives an opportunity to point out our reasons for not smoking."—M. T.

"Ordinarily I ask my friends not to smoke in our apartment. I do it kindly, telling them that smoke gives me a headache."—G. T.

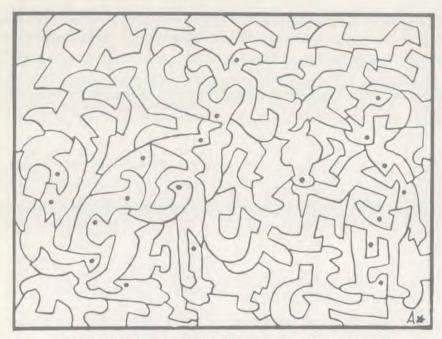
"Yes, I provide an ashtray when some addicted smoker is compelled to light up. However, I provide a coaster—something different, to show we do not fit into the picture."—F. S.

Women Now Pay the Price

"The lung cancer epidemic which has been seen in men now appears to be catching up with women," de-clares Dr. Lester Breslow, chief of the Division of Preventive Medical Services, California Department of Public Health.

Lung cancer deaths among women in California, age thirty-five to sixty-four years, increased 50 percent be-tween 1960 and 1964, he reports. Dr. Breslow relates the increase to the fact that great numbers of women first began smoking cigarettes twenty to thirty years ago.

ARE YOU PUZZLED?



CHINESE SHADOWS: Shade in all those areas marked with a dot. What is the picture?

More Suicides Mark Our Insecure Age

To halt the increase in American suicides (the tenth leading cause of death), the Federal Government has set up a national center for suicide

prevention.
"Though men have elected to die at all periods of history, never have so many done so as in the present," says Dr. Stanley F. Yolles, director of the National Institute of Mental Health, within whose jurisdiction the center has been established. "Suicide has spread throughout the twentieth century. The world figure may exceed half a million."

At least 20,000 men, women, and children are known to commit suicide in the United States each year, with many additional suicides hid-

den in "kindly falsehoods." "It is obvious that man's unique question is still 'to be or not to be,' and it is our task to provide him with an affirmative answer,"

Yolles observes.

The center is based on the as-sumption that the potential suicide will cry out for help and that the cry can be answered. It will encourage the setting up of "suicide phones" in various communities, numbers which depressed persons can call for help. The center will support research and pilot studies, and supply information for personnel to whom suicide-prone individuals might come.

The rate of known suicides in the United States is 10.5 per 100,000 persons per year, the rate varying

widely in various groups according to race, sex, or age. The rate for males is 16.6, as against 4.9 for females. The nonwhite rate is 5.5 while the white rate is 11.

Suicide is the third-ranking cause of death among the fifteen to nine-teen age group. This is true partly because deaths from chronic and infectious diseases are low in this age

Cigarettes--Second Killer

Maladies due to smoking have now become second only to those due to heart disease, says a report from the United States Public Health Service.

Deaths from chronic bronchitis and emphysema have shot up more than eightfold in twenty years—from about 2,300 in 1945 to more

than 20,000 now.

The rise is proportionate to the increase in cigarette smoking-from an average of about fifty cigarettes a year for the entire population to the present per-person average of more than 4,000.

"Cigarette smoking is one of the greatest health hazards of the twentieth century," the Public Health re-port says. "Every puff of cigarette smoke contains billions of tiny, unburned particles. When the smoke is inhaled, 80 to 90 percent of these particles remain in the body and a residue of tar builds up in the air tubes.

The committee responsible for this report had the advice of more than 200 medical specialists, representing all related fields.

Facts for the Road

Drinking Walkers

Much is written about drinking drivers. They are raked over the coals—and they should be—for im-bibing and then getting behind the wheel

As hazardous, however, are drinking walkers. Harry H. Brainerd, traffic-safety commissioner of Pennsylvania, says that one of every four pedestrians killed in Pennsylvania during 1964 had been drinking

Tax and Accidents

Alcohol tax receipts in the United States total some \$5.2 billion in a

The annual cost of highway accidents runs up to about \$8.1 billion, says the National Foundation for Highway Safety.

Draw your own conclusions!



BOB BROWN



PROBLEM: Sound conduction. NEEDED: Two rocks and a large container of water.

DO THIS: Hit the rocks together in air; then hit them the same way under the water. Note the difference in the sounds. Place your ear to the side of the pan of water and listen as the rocks are struck together under the surface of the water. Note the difference.

HERE'S WHY: The sounds are different because the physical characteristics of air and water are different. First, the rocks cannot be hit together as easily in the water. Second, even though sound travels more than four times as fast through water as through air, some of it is absorbed in the water.

When the ear is placed against the side of the container, the sound of the rocks being struck together is The water conducts the sound vibrations from the rocks to the pan, and the pan vibrates. This vibration is then conducted to the ear without much intervening air.

Wera Miles The Joy of Health

Duane Valentry

THERE is one actress in Hollywood who is not afraid of passing years. To Vera Miles they are a challenge.

To me, youth is a preparation for the charm of maturity," Vera says.

Vera is one of the happiest gals around and, according to those who know her, one of the sweetest. In a town where ideals often slip away, she has retained her own

despite the usual career and social pressures.

Habits, she believes, have much to do with general well-being and health. She has never used alcoholic beverages and does not intend to start. As for smoking, she found herself caught up with the habit a while back, but called on her willpower to give it up. She admits she had a real addiction to cigarettes and that she went through a struggle in order to quit.

"I battled against an enemy that I was determined

would not win," she recalls.

"Our bodies take a great deal of abuse, and at times we find out too late the effect of bad habits," she says. "People often give their cars better care than they do their bodies, in spite of the fact that one can always get a new car.

"I love plenty of sleep. I go to bed early. I do my best thinking in the morning, and I enjoy waking up refreshed. Hollywood night life is not for me."

From all appearances, Vera Miles will be as attractive many years from now, especially now that she has stopped smoking. She says: "My best beauty advice to those who smoke, is to stop smoking. Every part of me, the way I look, the way I feel and act, improved once I gave up cigarettes. One has to have a closed mind not to admit that smoking is an unhealthy habit. If it were not, why would athletes in training be forbidden smoking?"

Many people, she believes, fear to stop because of the weight they may gain. She had somewhat of this feeling herself; but she concluded the risk was a small price to pay for the riddance of the habit. She knew excess weight could more easily be remedied than the results of smok-

"I wouldn't go back for anything! I had forgotten



Vera Miles feels like a new person since quitting the tobacco habit.

how well I could feel and how much I could enjoy life. My whole system was poisoned with nicotine."

Happily married and a mother, Vera feels that mastery of the smoking habit was a real milestone in her life. She recommends it for those who desire a new lease on life.

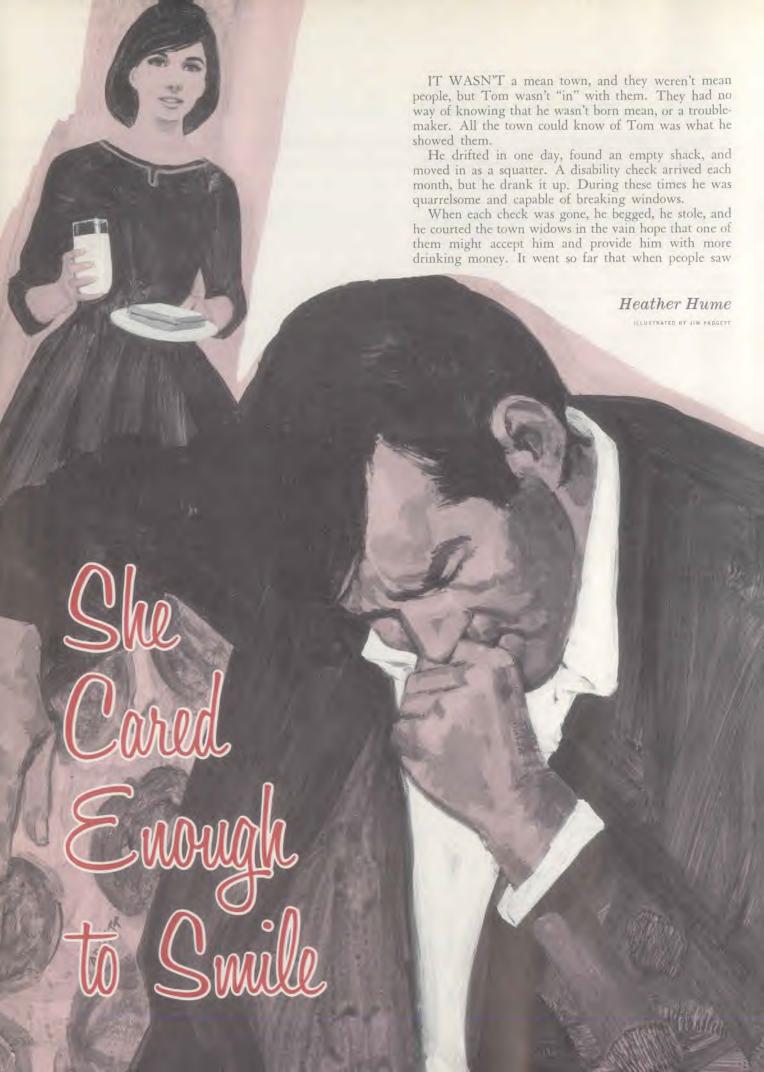
Girls and women who want to make the most of their looks must especially give thought to keeping away from smoking and drinking, she feels. The condition of the body, and consequently one's looks, she comments, bear directly on health, or the lack of it.

Always an advocate of right eating, Vera has made a point of studying diets. In the past she has lost ten pounds in two weeks by excluding overprocessed foods and eating those high in nutrition but low in calories.

"But I came back to my former diet," she says, "with its emphasis on natural foods, plenty of raw vegetables, and green salads, with none of the overprocessed foods or those containing preservatives, chemicals, or bleaches."

Her own serenity, happiness, and contentment are evident in Vera's expression, in marked contrast to many faces seen in show business, even among the young and attractive. But then, as she says, too many people not only abuse their bodies and destroy their health with bad habits and wrong diet, but they do the same to their minds and personalities with worry about things they can't do anything about.

"Anyone can do something about his habits."



him coming, they would lock their doors and phone the sheriff.

Tom spent more time in jail than he spent in the shack, where he paid no rent and where he had no right to be. When he walked down the streets, people would turn away. There seemed to be no door in town at which he was welcome. Shopkeepers dared not turn their backs on him for fear he would steal.

He was the town nuisance. Mothers feared his being near their children. No one cared about him. Tom, in return, cared about no one. He was indifferent to the world. All he wanted was to stay perpetually drunk.

Then a new teacher came to teach in the small, oneroom schoolhouse where the town's twenty children attended school. The older children traveled by bus to the city high school.

The town warned her about Tom, and told her to lock her doors, for he often tried to force his way into a house where there was a lonely woman. And a young, attractive, single woman—well, who knows what he might do!

It didn't take Tom long to find out about the new schoolteacher, and soon he was visiting at the small cottage she had rented. Unlike the townspeople, she didn't lock her door and scream for the sheriff. She smiled at him as she worked in her garden and said, "You're Tom, aren't you?"

It was the first smile, the first greeting Tom had received in many years. It was shock enough nearly to sober him up. He reached up to his hatless head in an endeavor to tip a hat he didn't have. "Yes, ma'am," he muttered.

"Fine!" she smiled again. "I bet you could put in my winter bulbs for me. I'll pay you."

He bit at his shaky lips. A stray tear fell from his eyes, but she was fair with him, and kind. He tried to return this first favor.

"I only drink up what I make. Then I usually cause trouble. You wouldn't want me around," he volunteered.

Again the smile. "Oh, I do not think you'd treat a friend mean, would you? And if you earn the money, how you spend it is your business, not mine. That's how I look at it."

He sat down and cried. After she brought him a hot drink and a sandwich, he dried his eyes. The rest of the day he worked in her garden. When she offered him money, he shook his head. "Nope, ma'am. I'd rather take my pay in food. Maybe I can keep away from trouble that way."

They say miracles don't happen overnight. Maybe they do not. Tom didn't change overnight. He drank up his disability check still, but he slept his drunks off and then went back to work in the young teacher's garden.

Someone cared now. Some-

one talked with him. Someone fed him and let him into a house. Someone didn't fear him—the teacher cared.

One day he showed up in church on her arm. The congregation had a hard time with their consciences. They wanted to be nice. They wanted to believe in him, but—after all. They worried about the teacher. Some of them tried to warn her that Tom was treacherous and dangerous and would surely turn on her.

But she quietly told them, "My dad was like that once, no different from old Tom. I can't forget that. A Salvation Army man helped him. All he needed was a real friend. What a difference it made to us when he found that friend! That is why I have to be Tom's friend. I'll take the chance."

It didn't happen overnight, but Tom would walk to her house and sit and talk with her, and maybe play checkers instead of going on a drunk. He had his relapses, but she never criticized. He was sure of her friendship and companionship. The drunks grew less.

He took on more jobs to keep his nerves from driving him to drink. Since he wasn't drinking his money, and he was earning some extra money, Tom took a surprising step in the eyes of the community. He bought the shack he had been living in as a squatter. He also bought the vacant lots around it at a delinquent tax sale.

The teacher made curtains for his windows, gave him plants for his yard. Soon he was fixing up the house.

He cared now. He cared about people, and the people could now care about him. He wasn't the town nuisance any longer, someone to fear and avoid. He was a respectable citizen, a homeowner.

He was more. He was a church member. Now that he had found that someone could care about him, he could believe that God cared.

The story, however, doesn't end here. The school-teacher has left. She now teaches in another district, but she still writes to Tom.

Now it is Tom who is "caring" about the town nuisance. A drifter named Jack wandered into the town some time back. He's a man who is indifferent, too, but Tom knows how to help. Tom knows how to care, and how to be a friend.

the spark



Isabel A. Woodward

I sparked the flame
And held the tiny candle
In my hand
To watch the glow.
How brightly it burned,
Stretching the light
Far up beyond its height!
Watching thus, I thought—
If so small a flame
Can cast so tall a glow,
Think how some small deed of love
Or word so gently spoken
Can kindle sparks of faith
And even mend a heart once
broken.



LAST night, at least 7,000,000 Americans tossed around on their beds, unable to sleep. Another 6,000,000 fared better only because they took sleeping pills. Yet most of them could have gone to sleep promptly if they had only known how!

Fortunately few of us suffer from real insomnia, which is usually caused by a mental ailment or some organic disease. Ordinary sleeplessness is nearly always due simply to plain ignorance. Take relaxation, for example. Can you relax your leg or abdominal muscles at will? It is amazing how many people cannot. Yet it is easy when you know how, and absolutely necessary before you can go to sleep.

Early man came shuffling home to his hut at night, dogtired, and slumbered soundly till morning. No one had to teach him to prepare his body and mind for natural sleep; he adjusted himself automatically. But today's living conditions are so different that we must learn to do what our ancestors did as a matter of course.

If you don't know how to relax, try lying flat on your back in bed and resting both hands on your abdomen, just below the ribs. Now, keeping your knees straight, lift both legs a few inches. Hold them up as long as you can. Feel the muscles in your abdomen—they are hard as rocks.

When you can't hold your legs up any longer, let them drop back on the bed, and rest. Now, with your hands, knead your abdomen. It has become soft as dough. You can't even find any muscles, because they are completely relaxed.

After catching your breath, repeat the performance, only this time rest your hands by your side. When you let your legs fall back, notice how good your abdominal and thigh muscles feel. That is the feeling of relaxation. Now try to relax these same muscles without holding your legs off the bed. See how easy it is?

You can learn to loosen your shoulder and arm muscles by holding your arms off the bed, and your neck muscles by holding your head off the pillow, and then letting them fall back.

These exercises won't make you sleepy. Their purpose is to show you what genuine relaxation feels like, so that you can enjoy it whenever you wish. Exhausted muscles loosen automatically when given a chance. But those of us who are not physically tired at the end of the day have to learn to relax.

Why is the state of your muscles so important when it is only your brain that sleeps? Remember, you have hundreds of thousands of nerves running to and from your

brain. You have some 800 muscles, and each contracted one sends a constant stream of nerve impulses. Part of your brain, like a faithful telephone operator, stays awake to handle all these incoming messages.

But impulses arrive from other parts of the body, too. From your stomach, for example, if you eat a heavy meal before retiring. Then your digestive system is working hard and keeps telling your brain about it. Yet a completely empty "tummy" can be just as bad. That is why a glass of warm milk or a little broth before bedtime helps some people to sleep.

But suppose your muscles are relaxed, your digestive system is quiet, and still you can't sleep. Is the window open wide? Are you getting too much fresh air? That may be the cause of your wakefulness. Of course you need fresh air while asleep, but a window open only two inches will give you more fresh air than you can possibly breathe.

Air doesn't have to be cold to be fresh. Even if your body is warm under the bedclothes, cold air can keep you awake by stimulating the tiny nerves in your face and hands and by sending impulses to the brain. If the air is very cold, the weight of heavy bedclothes, required to keep you warm, stirs the pressure nerves all over your body, flooding your brain with disturbing messages.

Therefore a room not too cold, and the lightest bedclothes possible, can help you to sleep. One Washington official who for years had difficulty sleeping solved his problem by leaving his radiator partly turned on and by wearing cotton

stockings on his hands and arms!

In earlier times, when the campfire flickered out, your ancestor was left in darkness. But you have electric lights to contend with. Not only your own, but your neighbors' and the street lights. Your eyes see light, and report the fact to your brain, even when they are closed.

Sweet Dreams to You!-

- Relax your body, using simple exercises if necessary to put your muscles at ease.
- Avoid eating a meal as you go to bed; your stomach needs to unwind and relax, too.
- If you need a drink before bed, make it warm milk; tea or coffee tends to stimulate.
- Be sure you are getting enough fresh air, but not as a strong draft or as very cold air.
- Use as few covers as possible, for heavy blankets bother the pressure nerves all over your body.

Few people have properly darkened bedrooms, yet it is easy to solve the difficulty. You can paste black cloth over the transom to reduce light from other rooms; you can hang heavy curtains at the windows; or you can wear a mask over your eyes while you sleep.

Stimuli coming from your ears are also likely to keep you awake. Therefore your bedroom should be as sound-proof as possible. Doors and windows, except those essential for ventilation, should be closed. Heavy curtains help to muffle sound; and devices are on the market which screen out street noises, even through an open window.

While reducing the number of wake-up messages to your brain is the most important factor in courting sleep, there is another preparation you must make. Your mind, unlike your body, will not stop work suddenly. Mental relaxation is a gradual process.

If your bedtime is 11 p.m., you should start to slow down your mental activities at about 9 p.m. Try quiet conversation, light reading, and, above all, a comfortable chair. Most important, don't mull over the problems of the day. That is fatal.

If you have carried out these instructions, you have gone a long way toward a restful night. So now you are lying in bed, comfortably relaxed and drowsy from lack of mental stimulation. The next few minutes are critical. What will you think about? You can't turn off your mind like a faucet; it will work right up to the last moment.

Unfortunately, worry is a part of modern living; it is another word for "thinking" or "planning." How, then, can you force an unpleasant subject out of your mind? You can't, but you can replace it by a pleasanter one. You can daydream, and daydreams are akin to real dreams. Any calm, pleasant daydream will do, but there are two general kinds that work better than others. Pleasant experiences of long ago are best. Try to relive a happy day of twenty years back, relishing every pleasant detail.

Also efficacious in inducing sleep are thoughts of life in the open—green fields, woods, streams, and mountains. If you can combine both kinds of thinking into a single daydream, that is, childhood recollections of time spent in the open, you should have a sure thing!

Eight or nine hours of deep, refreshing slumber can do wonders for your temper, personality, and health. You can sleep naturally and without drugs if you follow the sleep pattern developed over thousands of years, along with man himself. But don't try shortcuts.

Everyone of the steps outlined here is essential. By following them in their proper order you will help nature to pull a restful curtain over the nighttime windows of your mind.

Make the room as dark as you can, shutting out street lights or other lights if necessary.

Curtains help muffle outside noises; close out all sounds you can.

 Start slowing down your mind a couple of hours before bedtime; put the brakes on your mental activity.

Think of pleasant experiences, or relive a happy day twenty years ago, just before you drop off.

10. If you need sleeping pills—and they are only a crutch—be sure to use them or ly at a doctor's direction; they can easily become a habit. AMERICA'S TOY OE

MEN in a boat off one of Florida's keys wait tensely, their shotguns poised against their shoulders. Closer and closer across the flats comes the excited baying of hounds. There is a rushing sound through the stiff fronds of the palmettos that skirt the beach, and several tiny deer, their eyes wide with fear, dash into the opening and toward the water, the dogs nipping at their heels. A blast of shotgun fire echoes over the key and the little deer lie motionless in the reddening shallow waters.

This is a scene that, prior to about twenty-five years ago, was repeated time and time again. The men in the boat are a group of outlaw hunters, and the tiny deer are Florida's Key deer, the only deer of their species in North America. Although a state law, passed in 1935, forbade the killing of these miniature deer, Miami wildlife officials found it hard to enter the will proceed the second of the second

to snare the wily poachers.

In 1943 a well-known cartoonist, Ding Darling, drew a cartoon which depicted, in angry detail, the killing of the deer by bloodthirsty poachers. Titled "The Last of the Toy Deer," the drawing, which was widely circulated, won for him the 1943 Pulitzer Prize.

Bills introduced into Congress to stop the senseless slaughter were unsuccessful. In desperation two wildlife organizations, backed by sympathizers, bought and leased land which was to become the Key Deer Wildlife Refuge,

Cartoonist Darling, who had started the action, spent the last twenty years of his life campaigning for a wildlife refuge on Sanibel Island. Since then, eighteen keys, from East Bahia Honda Key to Tarpon Belly Keys on the west, have been designated refuge limits for the deer.

Midgets of their world, Key deer stand a mere twentynine inches in height, and weigh up to eighty-five pounds when full-grown. The bucks have full racks of antlers.

Some biologists say that this toy-deer species has lived in the Florida keys for thousands of years; others say the Indians brought them there; still others say they came from the mainland by swimming from key to key.

Although tiny and delicate-looking, they are able to swim three or four miles without seeming to tire—and fast!

Although the Key deer dwindled to not more than forty in 1950, today their population is at least 300, and rising. "If we could only control the traffic!" Manager Watson says sadly. He estimates that automobiles kill about fifty each year. "They're starting to lose their fear of man, and man is their worst enemy."

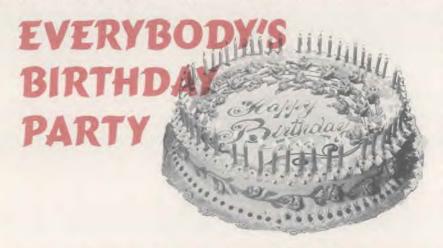


Freda K. Routh

PARTY PICK-UPS

Blossom Engen

January and February are months for birthday celebrations— January 1, the birth of a new year; February 12, Abraham Lincoln; February 22, George Washington; and so on. Why not plan an evening for everyone to get in on the act with an—



This type of party lends itself to larger groups. Written invitations may be sent out; or perhaps you will want to use the event for raising funds for some project, in which case invitations may be extended by announcements and posters, and tickets sold. It will be helpful to have invitees let you know whether they plan to come, and to request that their reply include the dates of their birthdays.

Each person attending should be instructed to select from his belongings some object no longer in use as an exchange gift, and to wrap it appropriately. Better have on hand a few extra "white elephants" so that everyone will be able to participate.

Decorate routinely for a birthday party. Plan a refreshment table with a large, decorated birthday cake, or platters of individual cupcakes each topped with a candle. Your decorating motif should include the gifts brought to be exchanged. Designate an area for them.

GAMES

Birthday Charades: Section guests into four groups, preferably according to the four quarters of the year in which their birthdays fall. Give each group the names of three famous people born during the same quarter of the year. Each group then pantomimes its indivviduals until the rest determine

whom the group is depicting. Listed below are some suggested names, but don't overlook names of local interest.

January—Paul Revere, Franklin Delano Roosevelt

February—Fritz Kreisler, Charles Lindbergh

March—J. S. Bach, Andrew Jackson

April—Harry Houdini, William Shakespeare

May—Florence Nightingale, John F. Kennedy

June—Frank Lloyd Wright, Helen Keller

July—James Whistler, Henry Ford August—David Crockett, Lyndon B. Johnson

September—George Gershwin, Roger Maris

October—Dwight Eisenhower, Johann Strauss November—Martin Luther, Sir Winston Churchill December—Walt Disney, Joseph Stalin

Who's Who at the Party: Obtain baby or childhood pictures of as many guests as possible, and mount them on numbered paper and post them randomly around the room. Pass out paper and pencil and give guests ten minutes to identify as many as possible. A prize for the person doing the best might be a roll of film—the cheapest available—to help along his "photographic memory."

Birthday Present for You: Guests form a large circle. One of the wrapped gifts (several if there is a large crowd) is passed around while "Happy Birthday to You" is played. When the music stops, the person with the present opens it, and tells how he intends to use this gift he has "always needed."

REFRESHMENTS

- Serve-Yourself Sundaes
- Birthday Cake
- · Apple Cider Glow*

Use imagination in variety of ice cream and toppings. Ice cream may be dipped into sundae cups in advance and refrozen.

*APPLE CIDER GLOW

(48 servings, 6-ounce)

6 oranges

Whole cloves to stud oranges

2 gallons apple cider
Floating candles
Cinnamon sticks for stirring

Artistically arrange cloves in oranges so that the oranges are well covered. Bake oranges at 350 degrees for thirty minutes. Heat cider almost to steaming. Pour into punch bowl. Float oranges and candles. Serve in glass cups with cinnamon sticks for stirring.

Listen - A Journal of Better Living

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MUSHROOMS are among the most poisonous plants that grow. Some are only slightly toxic while others would do well to wear the skull and crossbones, warning certain death to the eater.

Too much warning cannot be given to the gourmet who wishes to try a new fungus delicacy from a nearby woods. In some areas even mycologists (those who study fungi) cannot distinguish between a toxic and a nontoxic type of mushroom. Mushrooms are good food and an eating delight to many, but the amateur who doesn't know the danger would be safer to buy all his from a grocer.

In most instances where mushroom poisoning has occurred, the fungi responsible have been from the genus (classification group) *Amanita*. There are various poisonous elements involved, but there are two principle agents, namely muscarine and phallin.

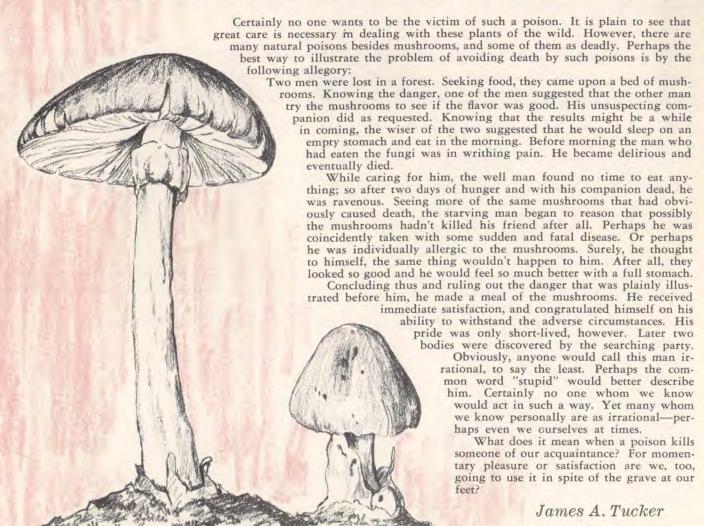
Both of these poisons have generally the same effect, but the times that lapse between the consumption of the poisonous plants and the moment when the effects are realized are different. The immediate symptoms are also different for the two toxins.

When muscarine is the poison, the effects are soon evident. Within one half to two hours characteristic symptoms occur: vomiting, diarrhea, dizziness, succeeded by drowsiness, stupor, cold sweat, and a weakening of the heart action. Death follows in two or three days.

With phallin the problem is more serious. Not only is the poison more potent but the effects are slow in coming. Symptoms do not appear until about ten hours after the mushrooms are eaten. Then severe abdominal pains, associated with cramps in the limbs and convulsions, take the victim by surprise. This is followed by symptoms similar to muscarine poisoning, and death occurs in from two to four days.

Until recently no antidote was known, and even now it is only experimental. The only treatment generally offered is prompt removal of the unabsorbed fungal material from the alimentary canal plus an injection of a powerful heart stimulant.

OF MUSHROOMS AND MEN



The "death cap" (Amanita phalloides) is one of the deadly fungi commonly called mushrooms.

19

