The Oriental Watchman and

Herald of Health

A Magazine for Home and Happiness

MAY, 1957

The Big Bad Wolf

A W. H. O. FEATURE

ON A hot August night last year a rabid wolf of exceptional size slunk into the sleeping village of Sehane on the road from Teheran to Damascus and Baghdad. Travellers sleeping in the open spaces scrambled out of their beds screaming as the wolf made its mad rush, recklessly biting whoever came in its way in whatever part of the body happened to be closest to its poisonous fangs. A total of 29 people and six cows had been bitten before the wolf was finally bludgeoned to death. From peaceful sleep the village was thrown into a state of wild confusion. But this tragic episode has become an important landmark in developing the techniques of rabies prevention and treatment.

As long ago as 1950 the World Health Organization's Expert Committee on Rabies had taken cognizance of the fact that anti-rabies vaccine had been shown to be powerless in an appreciable proportion of patients bitten in the head by rabid animals, particularly wolves. It appeared that the antibodies introduced by the vaccine formed too slowly to be able to counteract the development of the rabies virus, if this was introduced by a bite too close to the nerve centres.

Research in Teheran

The Expert Committee recommended further research, and Iran was chosen as the country for investigation because attacks on villagers by rabid wolves are frequent there. At the Pasteur Institute, in Teheran, research was continued with anti-rabies serum of high antibody level, which had given encouraging results in the laboratory, and it was decided to carry out a field trial to determine the value of this serum when used in combination with the existing vaccine.

The Sehane incident provided an excellent opportunity to test the new method of treatment and to demonstrate its effectiveness. Some thirty hours after they had been bitten, the victims from Sehane were under treatment at the Institute in Teheran. Eleven of them were found to have been bitten in the body or limbs, and eighteen in the head.

The eleven received a regular prophylatic course of vaccine and there were no deaths among them. Of the eighteen with head or neck injuries, six received the regular course of vaccine and three of these died. The remaining twelve received the combination of vaccine and serum; only one died.

After Pasteur

The usefulness of the serum-plus-vaccine method has now been accepted by the Third WHO Expert Committee on Rabies which met at the Pasteur Institute in Paris recently.

The meeting had historic implications since it was at the same Institute that Pasteur introduced rabies vaccination for human beings over seventy years ago, and the combined technique is one of the most notable advances in the prevention of rabies since that time.

(Continued on page 5.)

The Oriental Watchman and

Herald of Health

A Magazine for Home and Happiness

48th YEAR OF PUBLICATION

Postal Address: Post Office Box 35, Poona 1, India

Contents

May 1957

L. J. LARSON, Editor

DUNBAR SMITH, M.D., D.N.B., D.T.M. & H. (LOND.)
ASSOCIATE EDITOR

J. B. OLIVER, M.D., D.T.M.
ASSOCIATE EDITOR

OUR COVER

Sweet May hath come to love us,
Flowers, trees, their blossoms don;
And through the blue heavens above us
The very clouds move on. —Heine.

Photo: B. Ranganathan

Published monthly by the Oriental Watchman Publishing House. Two years' subscription: India, Rs. 17.50; Pakistan, Rs. 17-8-0; Burma, Ks. 17.50; Ceylon, Rs. 17.50. Foreign Postage, Rs. 1.15 extra.

Our representatives are authorized to receive cash for your subscriptions and to give our official receipt for the same.

Terms of Payment are cash in advance. Magazines are sent only for paid subscriptions.

Cheques and Remittance—Cheques for subscriptions given to our travelling representatives should be crossed and made in favour of the local branch office under whose jurisdiction they are working

Regional Office—Subscriptions may be sent to our nearest agency: for Madras, Kerala, Andhra and Mysore States—9 Cunningham Road, Bangalore; for Bombay State—16 Club Road, Byculla, Bombay 8; for Uttar Pradesh, East Punjab, Delhi and adjacent States—27 Barakhamba Road, New Delhi; for Bihar, Orissa and West Bengal—36 Park Street, Calcutta 16; for Assam—Nongthymmai, Shillong, Assam; for East Pakistan—103/c Dhanmandi Road, Dacca, East Pakistan; for Ceylon—7 Alfred House Gardens, Colpetty, Colombo 3; for West Pakistan—32 Mozang Road, Lahore; for Burma—68 U Wisara Road, Rangoon.

Change of Address— In requesting change of address, or referring to your subscription, kindly return wrapper or quote reference numbers appearing thereon, and indicate your old as well as your new address. Duplicate copies cannot be supplied without extra charge when intimation of change of address has not been given in advance.

Non-Receit and Loss of Copies—If your magazines fail to reach you, please inquire at your local post office. If you get no satisfaction there, please inform us

When making any complaint about the late receipt of this magazine, please send the wrapper along with the complaint. This will enable the post office to fix responsibility for delayed delivery.

Minute Meditations

TYRANNY OF USELESS THINGS

H. M. Tippett

MOVING day! What sighs and fretfulness those words invoke. The piano, sofas, and chairs are no problem. But, oh, the attic, the basement, the garage—how will we sort out the unnecessary from the indispensable?

Some modern Solomon has observed, "There is no tyranny like the tyranny of useless things." Most people's lives are cluttered with an accumulation of trifles. The string savers of the world constitute a large fraternity. From small Johnny's trousers' pockets to mother's handbag, from storage room to bedroom closet, miscellany triumphs.

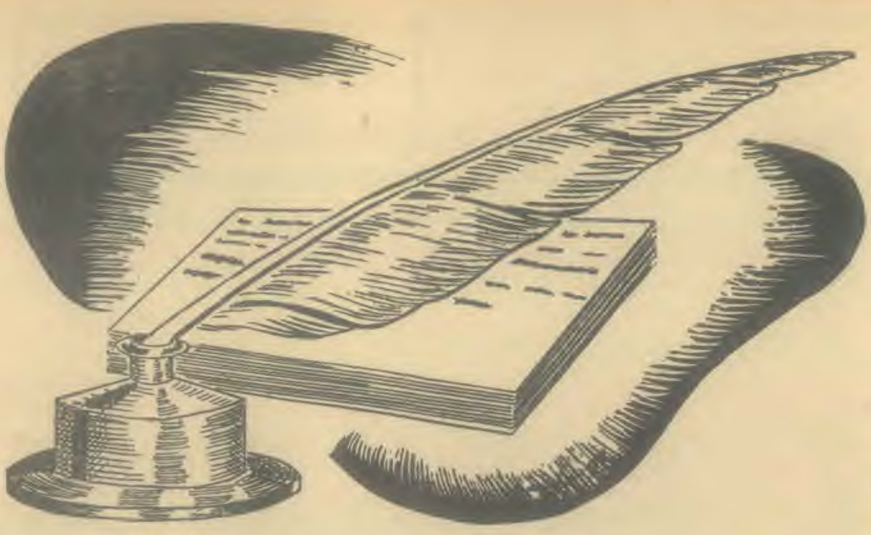
When filing things we often find
Odd bits extraneous—
We frown and toss them in the bin
Marked "Miscellaneous."

Why we cling to things that have outlived their usefulness or never served any purpose is a problem for the psychologists.

There may be an argument for the dust catchers in the parlour even though they engage the housewife in a wearying round of labour. Some of them may look pretty. But no one can find excuse for the stacks of old photographs in the trunk, the gilt portrait frames of the nineties hanging on nails in the basement, the sad-irons from the days of the coal range, and Grandfather's Army boots. Not even the most optimistic junkman would be interested. Yet we hoard these as pirates do their treasure trove.

To be engaged with trivia, whether of things or of thought, is a detriment to efficiency and

(Continued on p. 5.)



THE EDITOR ASKS

"NEED A LIFT?"

THE *Madras Mail* of March 11 published a short article under a Delhi date line of March 8, referring to the possibility of developing small industries to extract caffeine from tea waste.

This article was of interest to us, because it again points out some of the principles that this magazine has been maintaining for the last fory-eight years. We will quote the article as it appeared in the *Madras Mail*.

> "New Delhi, March 8: A scheme for the manufacture of caffeine from tea waste has been prepared by the Small Industries Organisation of the Ministry of Commerce and Consumer Industries for the guidance of small industrialists. Caffeine is the main active constituent of tea and it is in very great demand for medical purposes, particularly in stimulating the heart and higher faculties of the human system. It is also an important diuretic. India's annual production of tea is over 600 million lb. Nearly three-quarters of the total production is exported, and the rest is utilised for meeting the internal demand. Side by side with quality products, a huge lot of tea leaves are left unused as tea waste, which is relatively cheaper and an important source of caffeine. Several attempts have been made to extract this alkaloid from tea waste on economic lines in competition to the synthetic product which is not imported."

We recognize that caffeine, along with the other purines, may have a legitimate place in medicine, and inasmuch as it does have a medicinal value when used in treating the disorders for which it is valuable, we would feel that the suggestion made in the press release just quoted is one that is quite worthwhile. But we would like to go a step further and urge that *all* tea be utilized in that way rather than just the waste leaves! While we recognize that this attitude is a bit extreme, still we cannot but maintain our traditional attitude that the common use of tea as a drink is not beneficial to the human body, all propaganda and advertising to the contrary.

It is quite true that tea is capable of giving one "a lift" but it is also true that any habitual tea drinker can tell you that it takes more and more tea to give the same sort of "a lift" after a time. Any tea drinker who has become addicted to the use of tea, will also, if he is honest, admit that if his tea is not taken at regular times and in increasing quantity the system will exhibit early withdrawal symptoms and the craving will become quite intense.

Caffeine or theine is a purine discovered in 1820 by Ferdinand Runge. He discovered this substance in tea leaves. It is interesting to know that caffeine is found only in vegetable matter and occurs in the following proportions: 0.8-1.7 per cent in coffee beans, 0.1-0.8 per cent in cocoa beans, 1.0-2.0 per cent in Kola nuts, 2.0-5.0 per cent in tea leaves, and 2.5-5.0 per cent in guarana, the roasted fruit of *Paullinia* which is

MILK AND FRUIT JUICE

MILK has been successfully combined with fruit juice by some Dutch scientists, the United States Department of Agriculture reports. In their new milk drink, which combines acid fruit juices to make a colourful pasteurized drink, the scientists were able to pasteurize the food and keep it for several months.

Th secret to the combination is the substance pectin, which enables the milk to combine with the fruit acids. Pectin is used by every housewife when she makes jam or jelly, and its action in the milk and fruit combination is similar to the jelly-making result. The pectin throws a protective coat over the homogenized milk molecules.

Among the food flavourings that have been combined with milk are black currant juice, lemon, orange, and apple. This drink has been favourably received in Holland, and experimental work is being carried on at the Institute of Research on Storage and Processing of Horticultural Produce at Wageningen University.

eaten in South America. The *Encyclopædia Britannica* states that "it is this purine, along with the theobromine and theophylline, which gives the stimulating efficacy to drinks made from the above sources."

Before discussing caffeine let us go back and see just what the purines are, as that will help us to understand what caffeine actually is. The term purines is given to a large group of nitrogenous compounds, a small number of which are found distributed widely throughout nature. They have been given the name purine, because of the fact that, chemically, they can be regarded as being derived from that one substance, purine itself. Emil Fischer, a German chemist, coined the name from two Latin words, *Puram* and *Uricum*. This latter word was chosen, because at the time Fischer announced his discovery, the best known purine was uric acid which occurs in urine.

Several hundred purines are now known, but only twelve have been isolated from natural sources. The others are all synthetic products and so far as our discussion is concerned are of only academic interest.

It may be of interest to some of our readers to know that uric acid, the first purine known, was discovered in human urinary calculi by a Swedish chemist in 1776. Some 30 years later it was found that uric acid occured in guano and later it was found that birds' excrement consists largely of uric acid. However, the best source of uric acid known is the excrement of serpents, which contains over 95 per cent of uric acid combined with a small amount of potassium ammonia.

Uric acid is the substance which is deposited in body tissues and causes painful swelling in cases of gout. It is the substance responsible for the formation of gouty nodules which lead to the inflammation and irritation which characterize the disease. Uric acid, of course, is normally found in the blood of man and other animals, but human blood normally contains less than 0.1 mg. per cubic centimetre. The kidneys are called upon to remove excess uric acid from the blood stream. The human eliminates 90 per cent of certain chemical constituents of his system in the form of uric acid.

In the human the uric acid which is excreted may be of two sources. One is nearly constant, about 0.4 gramme a day and comprises the uric acid which is formed in the body by the synthesis and break-down of nuclear tissues. If a person is living on a diet which is free from purines this amount of uric acid excreted is independent of the amount of fats, carbohydrates, proteins or the total of calories taken; and it is thought to originate in the muscles and other tissues of the body. The other source of the uric acid which is eliminated by the human body is formed by the oxidation of purines which are taken into the body as a part of the food, either in drink or chiefly in meat. It is interesting to note in this connection that all meat, particularly meat which is of a glandular nature, such as liver and sweetbreads contains amounts of nucleic acid in varying quantity, and nucleic acid contains about 20 per cent of the purines guanine and adenine. These substances are changed in the human body by means of certain chemicals into two other purines which are both oxidized to uric acid. The amount of this type of uric acid depends, then, on the intake of substances containing purines.

It is known, for example, that uric acid and another purine, if injected into the body, can be recovered in almost exactly the same quantity from the urine. Thus it should be evident to any intelligent person that while the body will normally be excreting 0.4 grammes of uric acid a day as a result of normal body processes, if a person lives on a diet which contains an excessive amount of purines he will thereby be placing an additional abnormal burden upon his organs of excretion.

It sometimes happens that because people have taken purines into their system excessively either through their drinks or through their foods, the metabolism processes of the body are disrupted. As the person so affected continues to take in more purines the result is that since they cannot be eliminated effectively any longer, they must be stored some place. In the early stages, this storing is in the blood.

(Continued on p. 7.)

Tyranny of Useless Things

(Continued from p. 3.)

creative achievement. Hidden anxieties sometimes develop from the nervous energy expended in concern over disposing of such things. Putting off decisions on what to do with such impediments is even worse than storing useless gadgets in the cellar. Such impounded decisions accumulate until they are a definite source of uneasiness and worry.

It has been said that order is heaven's first law, and when we think of the harmonious movement of the planets and satellites of God's universe in space it is not hard to believe that confusion and disorder are man-made. Each star serves its appointed use. No wonder the great astronomer Kepler gazed into the heavens and exclaimed, "I think Thy thoughts after Thee, O God." Should it not encourage us to clear up the confusion with which trivial concerns and treasured trash clutter our lives?

THE STUDENTS' GUIDE

THE IMPORTANCE OF GOOD BOOKS

SAHIB SINGH AHUJA

THE need for good books and the right type of literature cannot be too strongly emphasised. Never was their need so keenly felt in our country as it is today. Books are our good friends and companions. Besides their educational, historical, reformative, religious and other values, they provide means for utilizing our leisure, enriching our knowledge and broadening our outlook. We can mould our characters in different patterns by reading different books. Good books give instructions and teach morals of l o v e, devotion, self-sacrifice, courage, friendship and duty; they broaden our sympathies, stimulate our taste for literature and excite our imaginative faculties.

Reading is the most innocent type of pleasure, if it is well-trained and well-directed; but flashy, silly and immoral books, magazines and papers corrupt the minds of our young people. Good reading admits us to the company of the noblest and the best minds of all ages. It is a lasting source of pleasure and delight and can be enjoyed both in company and in solitude. Pleasant descriptions of different scenes and sights fill our hearts with joy and afford us recreation after strenuous work.

We can always have some good book to read to divert our attention and help us relax at the end of a day of labour. The reading of light literature is highly entertaining. Good poetry, too, transports us into regions of joy. By reading good books "we take delight in weal and seek relief in woe." When we are in a happy mood, our joy is doubled by reading. In moments of depression and dejection, reading soothes and consoles our troubled souls. Good books elevate our character, and the morals contained therein purify and ennoble our thoughts and consequently give us infinite joy. Good books on religion uplift our souls to celestial heights and have the most reassuring and soothing effect on our troubled minds.

What book is it?

Students in our country, both boys and girls, today seem to be gripped by a love for books. Waiting in the queue at a bus stop or the cinema house, or when travelling in trains or buses one sees young people absorbed in books and magazines. Superficially this seems to be a happy state of affairs but one is shocked when one actually sees the sort of books and magazines in which the student community is taking its intellectual bath.

Cheap books, with accent on violence and sensuality, appealing to one's baser instincts, have been dumped on our book-stalls and are today eating as a cancer into the moral fibre of the rising generation. Young boys and girls are often seen avidly reading filthy and sexy literature in their class-rooms and in leisure time at the cost of their normal study-books and are thus subjecting themselves to incalculable harm both to their body and mind.

Most of the magazines that seem to be eagerly devoured by the students, are either film magazines, carrying fantastic stories about actresses, or other sensational publications which have a ready appeal to juvenile tastes. No wonder that the students in India know more about the beauties of the celluloid world than their next-door neighbour,—not to mention important national or international affairs.

But this is not the end of the story. There are other magazines dealing with true romances and true confessions, which are mostly imported from foreign countries resulting in sheer waste of the nation's hard-earned money. While the foreign publishers are minting money by trading in such sexy literature, our student community is being exposed to the dangers of juvenile perversities. Horror comics pale into insignificance when compared to these "true romance" stories.

There is also another type of foreign publication, cheap but attractively got up, filled with propaganda which may ultimately do vast damage to our national democratic structure.

These factors are primarily

responsible for diverting the energies of our young people into improper and unconstructive channels. They fall an easy prey to bad company and a sort of vicious circle is thus created. Their visits to cinemas become more frequent. Due to dearth of good and educative films, they have, perforce, to see ordinary sexy films portraying "boy meets girl" stories. Their latent, premature instincts for sexuality are stirred and as a consequence the number of "street Romeos" and "Juliets" increases. Many young men take to abusing themselves, night pollutions become abnormal and the flower of manhood is wasted away. Gradual loss of eye-sight, continual headaches, loss of temper, depression in spirits, and morbid feelings become routine with them.

The need for ridding our bookstalls and bookshops of this type of literature is of paramount importance and the sooner it is realised the better it will be for the future of the country and our student community on whose shoulders rests the responsibility of building new India.

Some people have suggested that the publication and the import of such books and periodicals should be completely banned. But the remedy does not lie in a mere ban on such literature. We must place in the hands of the youth some alternative useful publications—books and magazines that would bring before their eyes the glorious past, that would acquaint them with the cultural heritage of India and the culture of other nations, and acquaint them with the lives of great men, thus to help mould them into useful citizens of the country.

To achieve this a great measure of responsibility should be borne by our writers, whose task it is, as Shri Radhakrishnan has said, "to clear the mists of misunderstanding and to give our world, which is shrill and sharp, a friendly countenance and character." Only writers able to distinguish the true from the false and to understand the cause of the many social ills that afflict us today would be able to face the task with effective help and encouragement from the government and other leaders.

The leaders, the parents, the teachers and the taught, all seem to be equally responsible for this sad state of affairs. To improve the situation, a frontal attack on the factors responsible is needed. What our young people today need in this respect is proper direction and guidance. It is heartening to note that our Government has taken serious notice of the situation and has recently passed an enactment on the pattern of that passed in the U. K., imposing a ban on horror comics and cheap literature. A National Trust for arranging for the wholesale and cheap publication of the right type of books is in the offing. It is to be hoped that with the active collaboration of all concerned, the efforts of Government and others will be crowned with success in eradicating the menace completely.

THE EDITOR ASKS
"Need a Lift?"

(Continued from p. 5.)

Naturally, it is from the blood that the kidneys eliminate the purines. As the kidneys are no longer functioning properly in this individual, and because the blood can only hold a certain amount, the excess is deposited mainly in the cartilages and joints, in the form of acid sodium urate. This substance produces an irritation. This irritation produces a diseased condition commonly called gout.

It should be obvious that since gout is actually caused by an excessive amount of purines in the system, a person suffering from such a disorder should avoid foods and drinks which contain purines. Meat, particularly, should be avoided. Such a person should take as his protein diet only such foods as milk and eggs which are virtually purine free. In other words, he should not be placing upon his own kidneys the burden of eliminating the waste products which will be contained in the meat of the animal which he has eaten,—wastes which would normally have been removed by the kidneys of the animal. It should also be just as evident that the use of drinks which contain caffeine, which is one of the purines, would also be detrimental to the human system.

Our readers have noted that in the years we have been publishing our journal we have consistently advocated the non-use of pork. One reason for this is that the organs of the pig are so constructed that they do not eliminate much of the uric acid from the system of the animal. As compared with the human which eliminates 90 per cent, the pig eliminates only 1.8 per cent. Thus the pig frequently suffers from a type of gout which is similar in all respects to that of the human, except that the deposit in the joints consists of crystalline guanine instead of acid sodium urate as in the human. Obviously, then, when a person makes use of pork he is increasing the quantity of purines which is taken into his body and therefore he is placing a much greater strain upon his kidneys than they would be forced to bear normally.

Caffeine, one of the purines, has the effect, when taken into the body, of stimulating the central nervous system. There are times when this is of vital importance medically and in such a case, where

(Continued on p. 32.)

Please give me advice on losing weight.

REDUCING

LUCILLE J. GOTHAM

THERE are at least twenty-five million over-weight people in the United States. Frightening but true statements are being made by authorities about the dangers of excessive weight. You have heard the statement, "The longer your waistline, the shorter your life line." This scientific observation was made by a leading doctor: "Over-weight persons on the average die younger, and more of them develop diabetes, cancer, heart, and kidney diseases, arthritis, other joint disturbances and high blood pressure, than persons of desirable weight."

Usually it is either doctor's orders or pride that leads a person to make the effort to reduce. Here are some suggestions and warnings about weight loss. All reducing measures should be talked over with your doctor.

1. Steam baths give a temporary lowering of the weight. But they may be harmful for a person with a weak heart or high blood pressure.

2. Massage is agreeble but quite valueless so far as actual loss of pounds goes. However, in connection with diet measures it may make for beautiful body symmetry.

3. The use of cathartics may have harmful effects.

4. Cutting salt from the diet generally produces a sudden, dramatic loss of several pounds. As a rule it is beneficial to cut salt, for reduction in salt intake tends to correct a puffy, water-logged condition that troubles many over-weights. Ask your doctor how much salt you should use.

5. Reducing medicines are used only in certain cases under a doctor's careful guidance. Opinion varies as to their usefulness and safety. Some of them act by curbing the appetite.

6. Fasting may be practised in many ways, but prolonged fasting is never recommended. Some people take only liquids one day each week. Others eat no supper, and have better health for this measure. Still others take no food for two or three days to lose five pounds or so.

7. Excessive exercise may produce a lowering of body weight to the extent of as much as five pounds. This is illustrated by the

"The longer your waistline, the shorter your life line."

athlete who may weigh five pounds less when he comes from the field. This reduction is largely a loss of water from great perspiration, and the weight is gained back as soon as the thirst is fully quenched. In general, moderate exercise is beneficial to the reducer, for it makes the flesh firm and helps produce a well-proportioned figure.

8. The best reducing method is to follow a sensible reducing diet rigidly. This diet should supply the essential food elements. When followed properly it brings the weight down gradually but surely.

Every reducer should possess a bathroom scale, a tape measure, an easy-to-follow diet, and lots of will power. For the greatest encouragement it is best to weigh the first thing in the morning. This is probably the truest weight. If the scales point to a discouraging figure, start at once to curb the calories. Keep a record of your weight and food intake every day if you can spare the time. Once a week record your waist and hip measurements. These methods help to keep you at your task.

Visit your doctor, and with his approval and diet list start right in and show him what you can do.

It will not be expensive to follow a reducing diet, but rather a saving. You easily may be able to cut your food budget enough to purchase a pretty new dress—a size or two smaller than you bought the last time you shopped.

Reducing diets vary from strict emergency rations, which may be as low as 600 calories, to the usual standard diets of 800 to 1,500 calories. The correct number of calories for you will vary with your build, activity, the weather, and other factors. Your doctor may say, "Eat 1,000 calories daily for the next two weeks," but may have little time to discuss ways for making the diet varied and enjoyable.

When the calories are limited it is safest to make every one count for health. The calories should be made up of measured amounts of fruits, vegetables, whole-grain bread, cereal, and dairy products. These are called protective foods, because they will help preserve the teeth, nerves, and morale while you are losing the unwanted weight. Keep vitamin and mineral capsules in an attractive dish on the table, and use them faithfully while on the restricted diet, as a safe-guard to health.

Every reducer is interested in securing definite menus and recipes, and is usually seeking something tasty and filling. If a dieter eats the same foods every day, the monotony will help cause him to break over and fail in his plans. Variety makes for superior health. In order that he may have variety, we give menus for three days and a list of fruits and vegetables that may be used as they come in season. You may cut these menus or add a bit according to your special needs.

1,000-CALORIE REDUCING MENUS

300-Calorie Breakfasts

¼ cantaloupe
½ cup bran
1 cup skim milk
1 slice whole-wheat toast
1 teaspoon butter

½ cup pineapple juice
½ cup puffed rice
1 cup skim milk
½ slice whole-wheat toast
1 egg

1 medium orange
½ cup cornflakes
1 cup skim milk
1 slice toast
½ teaspoon butter

400-Calorie Dinners

2 broiled gluten steaks
½ cup snap beans
Tossed green salad
1 peach
1 cup skim milk

1 stuffed egg, lettuce
Asparagus on toast
1 cup skim milk
1 cooky—macaroon

½ cup cottage cheese
1 potato
½ cup stewed tomatoes
½ cup carrots, parsley
1 cup skim milk

300-Calorie Suppers

1 sliced tomato
1 egg sandwich
1 cup skim milk

1 cup tomato soup
Large vegetable salad with a hard-cooked egg
1 slice whole-wheat toast

1 poached egg on spinach with lemon
1 apple
1 cup skim milk

Alternatives for the orange at breakfast: ½ medium apple, ½ cup applesauce, 2 fresh apricots, ¾ cup canned apricots (water pack), ½ small banana, ¾ cup fresh blackberries, 1 cup blackberries (water pack), ¾ cup blackberry juice, ⅓ cup fresh blueberries, ¼ cantaloupe if large or ½ if small, 14 fresh cherries, 1 small fig, 1 cup gooseberries, ½ grapefruit, ½ cup grapefruit juice. Small bunch of grapes, ¼ cup grape juice, ⅓ cup huckleberries, ½ cup lemon juice, ¾ cup lime juice, ½ cup kumquats, ½ cup loquats, ⅓ cup mangoes, ½ cup mulberries, ½ cup orange juice, ¾ cup papaya, 1 medium peach, ½ medium pear, 2 slices pineapple, ¼ cup pomegranate, 2 plums, ½ cup raspberries, 1 cup strawberries, and 1 slice watermelon size 1¼ dinner plate and 1 inch thick.

Alternatives for stewed tomatoes: ½ cup asparagus, ½ cup bean sprouts, ½ cup beet greens, ½ cup cabbage, ½ cup cauliflower, ½ cup celery, ½ cup cucumber, ¼ head lettuce, ½ cup mustard greens, ½ cup radishes, ½ cup rhubarb, ½ cup sauerkraut, ½ cup spinach, ½ cup squash, 1 medium tomato fresh, ¼ cup tomatoes canned, ½ cup tomato juice, ½ cup turnip tops, ½ cup watercress.

Alternatives for snap beans: ½ cup egg-plant (brinjal), ½ cup okra, 1 medium pepper, ½ cup pumpkin, ½ cup green soy beans, ½ cup squash, ½ cup turnips.

Alternatives for carrots: ½ cup beets, ⅓ cup peas, ½ cup onions, ½ cup Brussels sprouts, ⅓ cup green Lima beans.

Alternatives for potato: ½ cup corn, ½ cup baked beans, ½ cup cooked rice, ½ cup cooked macaroni, spaghetti, noodles, or vermicelli.

Don't Rush Yourself to Death

DOROTHY GRAY SMITH

You actually harm yourself by hurrying through daily duties.

"HURRY, dear, hurry!" Mother called for the third time, "dinner is ready now." And Jane did just that. She climbed out of the shower, wrapped a big towel around her, and raced for the bedroom to dress. But she didn't quite make it. As she reached the door she slipped and fell. Her right leg hit the bed rail and buckled back. There she lay, grimacing in pain, her right ankle broken. Jane didn't eat dinner that night and neither did Mother. If she had waited until after dinner to shower, or Mother had not been so insistent about her rushing, the accident would not have happened.

"Hurry, hurry!" is the scourge of modern civilization. It is nothing short of a demon with a pitchfork, constantly prodding until our minds become confused and we develop nervous tension. We become more concerned with hurrying than with doing a thorough, careful job. The result is inevitably disaster.

There was Ellen, an efficient secretary. Her boss patted her on the back with one hand while he crammed volumes of work at her with the other. She was a conscientious worker, but her days were filled with, "How soon can I have that contract? This letter and all attachments have to go out tonight. Can I have the estimates in half an hour? The meeting starts in fifteen minutes. Can you type these data sheets?"

The pressure went on, month after month, until Ellen was in a whirl, and something in the back of her head kept beating "Hurry, hurry, hurry" day and night. She couldn't stop it. It became like a great hammer, and she could stand it no longer.

One day when her boss hurried her, something in Ellen's mind snapped, "Hurry, hurry, hurry," she cried, and began sobbing violently and uncontrollably.

The boss has a new secretary, and Ellen is slowly recuperating from her nervous break-down. If only she hadn't permitted herself to be hurried and pushed, if only she had set her foot down in the beginning and said, "I'm perfectly willing to work consistently, but I refuse to be constantly rushed." Unfortunately Ellen, like so many others, had to learn the hard way —through experience.

Many a secretary starts her day

(Continued on p. 29.)

HOW TO RELAX

IN HIS new book *Relax and Live* (Prentice-Hall, New York 11, N. Y.), Joseph A. Kennedy, a physical instructor, gives his secret for erasing unconscious tension, which most of us have in this modern age. His three-step formula for relaxation is:

"1. Recognize tension, and learn to reduce it simply by stopping what you're doing to cause it.

"2. Slow up the breathing cycle.

"3. Cut down on mental imagery."

His first step is contract muscles and then relax them, to get the feeling of relaxation. Stretching brings muscles to a peak of contraction, for the relaxation can be felt and experienced as the muscles begin to let go after the stretch. Muscles relax only after you have taken your tension from them, and they continue to let go for some time thereafter. So during practice periods, you first contract muscles, then let them go, and let them continue relaxing.

By slowing up your breathing cycle, you cut down on the amount of oxygen going to the brain, and thus help reduce tension.

To reduce mental imagery, Mr. Kennedy suggests thinking about something black, because you must think of something at all times. Your brain cannot be a vacuum except during hours of sleep. So he suggests looking at a black letter, black coal, or black velvet drapes, to get the picture of blanking out your brain. This three-step formula he suggests as a going-to-sleep routine at night.

HOW TO FEED YOUR BABY THE FIRST YEAR

Variety is the foundation of good nutrition. Every day your baby should have some food from each of the Basic 7 Food Groups below. Timing and quantity of new foods depend on the individual baby and his doctor's recommendations.

TIME TO ADD	GROUP 1 Leafy, Green and Yellow Vegetables	GROUP 2 Citrus Fruits Tomatoes	GROUP 3 Potatoes and Other Vegetables and Fruits	GROUP 4 Milk, Cheese	GROUP 5 Eggs	GROUP 6 Bread, Flour and Whole-Grain or Enriched Cereals	GROUP 7 Butter or Margarine
1 TO 5 MONTHS	Strained carrots, peas, spinach, green beans, sweet potatoes, squash	Orange juice Tomato juice (for vitamin C)	Strained vegetable soup, mixed vegetables, beet roots. Strained fruits, such as apple-sauce, apricots, peaches, pears, bananas, prunes, papaya.	Milk formula Milk	Egg yolk—hard boiled and put through a strainer.	Cereals cooked at home and strained—oatmeal, wheat, corn, barley, rice.	Fish-liver oil (for Vitamin D)
5 TO 10 MONTHS	Chopped carrots, spinach, green beans, squash, sweet potatoes	Stewed tomatoes, fresh or canned, strained to remove seeds. Grapefruit juice	Baked potato Chopped mixed vegetables Baked apple, pear, banana.	Milk soups, flavoured with vegetables. Simple milk desserts—rennet, custards, cornstarch puddings, Cottage cheese Limit sweet foods.	Egg yolk—hard boiled and put through a strainer.	Zwieback Dry toast, whole grain. Milk toast, Semolina Arrowroot biscuits Graham crackers	A little butter or margarine
10 TO 12 MONTHS	Finely shredded salad greens Grated raw carrots	Broiled tomatoes Sliced orange Lemonade (weak)	Boiled or mashed potatoes, sweet potatoes, lima beans. Fruit juices	Buttermilk, milk shakes, gelatine, tapioca and rice puddings made with milk Mild cheeses	Whole egg, boiled or poached.	Bread, whole wheat or enriched Noodles, spaghetti, macaroni, rice.	Butter or margarine in slightly larger amounts.

Are You

REALLY

Sick

SUE THOMPSON GOULD, M.D.

ARE you really sick, or do you only think you are? Of course you never actually ask a patient that question. But the doctor must never altogether forget it in his dual role of physician and counsellor. Not all ailments respond to surgery and medicine, no, not even to the magic of the wonder drugs. The practice of medicine obligates the physician to make a sympathetic, persevering effort to treat patients whose main trouble is an abnormal habit of thinking.

The doctor, especially the surgeon, must earnestly ponder the question "Are you sick, or do you only think you are? to arrive at the correct diagnosis. At the Mayo clinic the records of 235 patients were studied six years after the diagnosis of chronic nervous exhaustion was made. The diagnosis proved ninty-four per cent accurate, yet 289 separate operations had been performed on 200 of the group.

The whole personality of the patient must be appraised by the doctor. His business, social, and home life must be studied for evidence of dissatisfaction. Failure to adjust to environment may be revealed by a disturbance in some part of the personality, and it may be manifested as apparent bodily ailments. They may imitate any disease.

As a disturbance of the emotions they may be manifested in anxiety, obsession, phobia, depression, and other moods. If there is no outlet, no escape for the emotional energy produced, the patient may develop ailments in which his "organic voice speaks," and in which his emotional tensions are disposed of. With extreme emotional tension there may be sighing respiration, a feeling of oppression in the chest, or a "talking out" regarding the worry, which at least removes some of the load from the patient's chest.

Photo: R. Krishnan

Are you really sick, or do you only think you are?

Many people, to use the old phrase, are forever doctoring. When you ask such a person what is wrong, he complains fearfully, "My doctor can't find out." You ask him where he hurts. Says he, "Sometimes one place, sometimes another."

Perhaps he has responsibilities that are too heavy for him. Perhaps he takes the world's cares as his Abraham Lincoln is said to have had periods of depression when he sensed his responsibilities too keenly. Charles Darwin, accomplishing the work of many men in many avenues, was always doctoring. For what? No organic trouble could be found.

Can it be that apprehension does cause illness for which no physical lesion can be discerned? Can it be

that certain scientists, psychologists, and others study themselves as well as their specialty too seriously? Do they perhaps forget that the human body possesses much resiliency and can compensate for minor ills and aches? That one need not despair?

It is evident that mental causes become replaced by physical and biochemical causes, by reflex or allergic causes. Different personality types are associated with certain diseases.

Consider the personality traits connected with asthma, one of the graver diseases without definite organic basis. Some scientists distinguish various types of persons among asthmatics. Others emphasize such sets of character traits as neatness and punctuality, obstinacy and ambition, irritability and optimism.

In the asthmatic there is a generally known relation between mind and breath, also between emotions and respiration. Some think that the mental factor is secondary in asthma, and that the disease is therefore not decreased by psychotherapy. Others think that the mental is the primary reason for the asthmatic attack, with the symptoms as the manifestations of anxiety and nervous irritability. They believe that the asthma symptoms serve as a protest, an evasion, or an escape.

A study of the mind versus allergy or other physical defect shows the following groups of symptoms that may be called allergic, or lacking an organic basis.

Symptoms related to the digestive system:

1. Nausea may be present without apparent physical cause.

2. Loss of appetite may be a symptom. The mal-nourished may be emotionally as well as physically starved. Fatigue may be caused by an emotional conflict using up the patient's energy.

3. Symptoms referable to the abdomen—indigestion, heartburn, constipation, and even vomiting—may be the result of nervousness, fatigue, and anxiety.

4. Obesity, in many cases, appears to be the result of eating in order to satisfy personal mal-adjustments.

Symptoms related to the circulatory system:

1. Heart neurosis and heart pain may be present where there is no organic heart defect. The patient considers the heart the seat of the emotions, and fixes it as the location of his anxiety. He associates the heart with sudden death. Ask the tense patient whether he has had a nervous break-down. He may insert "heart trouble" in his history if the word *heart* is so much as mentioned. His symptoms may include some of the physical indications of organic heart trouble such as fatigue, sighing respiration, nervousness, sleeplessness, flushes, and irritability.

2. High blood pressure may have a neurotic or mind basis. There may be seen a condition in which the symptoms of high blood pressure disappear but the blood pressure remains constant.

Symptoms related to the respiratory system:

1. We have already mentioned respiratory system symptoms, especially bronchial asthma. Night attacks may be preceded by an anxiety dream.

Of fifty cases of bronchial asthma studied in one clinical survey, thirty-seven apparently had an emotional component in the attacks. Thirty of the cases showed other neurotic traits.

2. Even too frequent colds and spells of sore throats may be due to being baffled in one's desires. The doctor must use insight into the unconsious demands of the patient on those around him, and try to detect in what ways his wishes are being thwarted.

3. Fear of tuberculosis or other

(Continued on p. 29.)

MENTAL TEST

PSYCHIATRISTS now have a special test they use in some fifty clinics round the country to tell whether a patient will respond to treatment. It is a test that finds personality defects and measures "ego strength," which is something like "horse sense."

The test was developd by Dr. Frank X. Barron, associate research psychologist at the University of California Institute of Personality Assessment, and consists of sixty-eight questions. It was tried on infantrymen in the front lines in Korea in 1953.

Interestingly enough, Dr. Barron found that forty per cent of the men in battle would not return fire. His test was successful in distinguishing these men—the non-fighters.

A non-fighter's deficiency apparently is ego strength, according to Dr. Barron. A person with a lot of ego strength is usually in good health, has a strong sense of reality, plenty of self-confidence, and vitality. He is liberal minded, enjoys people, and is usually intelligent.

Psycho-neurotics have the qualities of a strong ego strength, but they may be masked by personality defects and distress patterns. Patients with a high ego strength usually respond favourably to psychotherapy.

Thumb-sucking

KATHRYN L. HAGEN, M.D.

ONE of the sweetest pictures I have ever seen was of a baby sucking his thumb. He was utterly relaxed, full of happiness, and content. Why should parents, friends, and relatives worry over such obvious pleasure? The fact is that many of them do.

You really have reason for your concern considering all the information passed down through the ages about thumb-sucking. But your family doctor now has good news for you. Medical science is ever trying to find the right and true answers for parents who are beset by tales, old fables, and well-meant advice on how to bring up their children.

Thumb-sucking at one time was thought to cause ill effects of one kind or another. It was thought to cause malformation of the jaw and protruding teeth. It has been associated with masturbation. It has been blamed for air swallowing, infection of the mouth, and stomach and intestinal upsets.

Doctors pass on to you the following facts. A normal baby is born with four feeding reflexes—rooting, sucking, swallowing, and satiety. The vomiting reflex may be included with the four.

The sucking desire remains strong for varying lengths of time, but ordinarily diminishes toward the end of the first year. Some babies are satisfied with the sucking required to provide food; others apparently need much more. Those who need more resort to fingers, thumb, pacifier, or other objects. As a rule there are movements associated with thumb-sucking. They may be rubbing, picking, or twisting of some part of the body or some object such as a blanket.

The mouth, which is the infant's source of first recognized pleasure, remains a source of pleasure to him throughout life. He takes up nail-biting, gum-chewing, or both in turn. Later in life, munching or kissing replaces the earlier pleasures.

Photo: G. Ramamurthy

Why should parents, friends, and relatives worry over such obvious pleasure as thumb-sucking?

Tongue-sucking is similar to thumb-sucking. It is more often indulged in by infants with a large tongue or the mentally retarded. A normal infant may suck his tongue for no apparent reason. Glandular deficiency or brain injury are commonly the cause of mental retardation.

Our conclusion is something like a sad story with a happy ending. We have worried unduly over most thumb-suckers.

All kinds of devices have been used to put a stop to thumb-sucking—bitter-tasting substances applied to the thumb, taping, slapping, snapping, metal restraints to prevent elbow bending, and probably many others. They sound rather cruel in the light of present information. But let us have no recriminations or guilty consciences for honest effort to prevent what we thought to be harmful. Let us simply go on from here, following our enlightened way. True, thumb-sucking may displace the teeth, the thumb may become calloused or even infected; but beyond that there are no known harmful effects. It does not cause deformity of the jaw, infections, and stomach or intestinal diseases. Babies who do not suck their thumbs do as much air swallowing as those who suck their thumbs.

As to the relation between thumb-sucking and masturbation, they are both habitual manipulations of some part of the body, nothing more. There is no more tendency for a thumb-sucker to masturbate later in life than for a non-thumb-sucker.

Drs. Ruth and Harry Bakwin, after years of compiling information on the clinical management of behaviour problems in children, say, "Thumb-sucking can displace teeth, but it does not seem to affect the molar relationship. Although it may affect children with an underlying poor bite, it has little or no significance in children who have good bites. During the eruption of the deciduous teeth, the urge to bite is physiological and part of the oral development. It should not be interfered with. Children can be helped to stop thumb-sucking when they are physiologically and psychologically ready. Parental

influence may result in entrenching thumb-sucking, increasing the length of time and force, and consequently increasing the degree of malformation."

A most interesting little person was a boy who had sucked his thumb all his seven years. He was sick, and I was called to see him. He had been alone until two the night before, and was alone when I arrived.

"Mother went to the show last night and missed the last bus home. She's shopping now," he remarked.

We had quite a chat. As I was leaving he said, "You know, Dr. Hagen, I'm not going to suck my thumb any more. I'm growing up."

My little friend outgrew the need of that pleasure or comfort in just one night.

Should you have a little one who sucks his thumb during the day after his first or second year of life, he is probably over-tired, unhappy, or even bored with his daily programme. Ask your doctor to go over your schedule; check your baby to be certain that he is well and his diet and activities are correct. You may need help with your own attitudes. Nervousness, excitability, or a tense personality in the mother may need correction for the child's sake.

Occasionally thumb-sucking goes beyond the age of five or six years. Rewards, appeal to his vanity, or helping the child help himself are very gratifying as a rule. There are those who do not approve of rewards. We must try to take the middle of the road. Children are individuals and should be treated as such. Our training of them should be flexible, according to their personalities and individual requirements.

(Continued on p. 29.)

Much ado about thumb-sucking is more of a harm to children than the act itself.

The Miracle of Man's Bones

ANTHONY AKKARA, B.A.

IN A mountain cave in South China a few months ago, Dr. Pei Wen Chung of the Chinese Academy of Sciences discovered a human skull and parts of the upper jaw, the tenacious remains of a contemporary of the Peking Man which he believes to be 5,00,000 year old. Bones, similarly old, have been found in the past, in Neanderthal, Heidelberg, Java, and doubtfully in Piltdown. Such discoveries are bound to occur in future also because bones, besides being noted for their abundance and miraclous workings, are unique for their marvellous durability.

The bone is stronger than the oak. It can withstand a tremendous strain which an iron beam several times its weight and size cannot, without breaking. And yet it has a singular kind of elasticity which enabled primitive men to use bones for making bows. The bone does not dissolve in water, and so it can outlast iron and other metals which are affected by dampness. Such qualities of durability make bones survive the wear and tear of the ages and come to us as heralds of our ancestors.

Yet, these qualities are only the bare essentials for human bones. If they were not hard and tough, the human body would find it difficult even to resist atmospheric pressure. If they had no elasticity, the most ordinary bending, turning, twisting, kicking, or lifting would do instant harm to them, making one's body a mass of splintered bones in a matter of days. If they were affected by dampness, man would have no bones at all since they would dissolve in the body fluids before they took shape.

The bone's contents are simple: sixty-nine per cent of calcium salts and about thirty-one per cent of a *pasty,* organic matter. These together form a rare combination of hardness, toughness and elasticity.

The limb bones, especially the femur or thigh bone, are engineering marvels. They are constructed to give the greatest strength and elasticity but *with lightness of material.* The thigh bone is a hollow cylindrical pillar placed upon the two thinner ones of the lower leg. All are constructed on the engineering principle that the greatest strength is obtained by using the least material or, in other words, by using hollow cylinders.

Look at the spinal column. No creature on earth has got such an axis, a phenomenon in itself. It is responsible for man's erect posture, which is a thing of awe to animals several times the size of man. Hunters have often reminisced that

ARTHRITIS—A KILLER OF CHILDREN

CONTRARY to popular belief, arthritis is a disease of childhood as well as of middle age.

There are more than 10,104,000 persons in the United States suffering from arthritis, according to the Arthritis and Rheumatism Foundation.

Recent studies at several leading medical centres show that about five per cent of all persons with rheumatoid arthritis, the most crippling form of the disease, are children.

The studies indicate that children who come down with arthritis are more severely affected than adults. For example, not only are arthritic children subject to repeated attacks of the disease that may last from many months to several years, but twenty per cent of the children who are stricken with arthritis die prematurely as a result of the disease.

Your contribution goes to support patient care and rehabilitation. Physicians have found that early diagnosis and prompt treatment are the most effective means of helping stem the tide of the crippling disease.

the fiercest tiger is afraid to attack a man standing erect. No doubt, man's spinal column helps him to be the lord of all earthly creation.

The spinal column of vertebræ is closely cemented together by the cartilages between them, and protects the vital spinal cord running through the ring-like centre of each vertebra. Still, this does not make the spinal column as rigid as a pillar. It is flexible and capable of a variety of movements.

The abundance of bones in ancient remains is partly due to their abundance in the human body itself. A normal body contains 203 bones, of which only three-fourths are apparent. Just look at or feel over various parts of your body. One can quickly spot nineteen bones each in the palms and the feet, two each in the forearms and lower legs, and one each in the upper arms and thighs. One can likewise find the collar and shoulder bones, the two lowermost "floating ribs" (not attached to the breast-bone) on each side of the abdomen, and also the three "pseudo ribs" above them, but it is not easy to count the seven true ribs connected to the breast-bone to form the chest.

In the spinal column, the seven vertebræ in the neck and twelve dorsal ones below are counted easily. The remaining fourteen, and especially five forming the pubes and the four at the tail-end of the spine are buried deep in the lumbar region.

As people grow older some of their bones lose the cartilage between them and become fused together. Thus the four vertebræ of the tail-end become one, as also the five pubical and the three of the haunches; only three remain in place of twelve. The old often have bones sticking out all over to suggest to the contrary, but the truth is that children have more bones.

There are fifty-two bones that

(Continued on p. 21.)

Experimental Insanity

LILLIAN POMPIAN

From *Today's Health*

Reprinted by permission

IN THE spring of 1943 Dr. Albert Hofmann, a swiss chemist, was overcome by peculiar mental sensations while working in his laboratory. He felt dizzy, restless, disembodied and unable to concentrate on his work. In a dreamlike state he left the laboratory and went home to bed where he found he was in "a not unpleasant state of intoxication characterised by an extremely stimulating series of fantasies."

Correctly connecting his disturbance with the chemical he had been preparing, Dr. Hofmann conscientiously recorded every sensation. "An intensive, kaleidoscopic play of colours acted upon me," he wrote in his journal. "When I closed my eyes, I was surrounded by fantastic images in sharp relief and of extraordinary plasticity."

These strange sensations had struck Dr. Hofmann after merely inhaling a whiff of the chemical. The next day he took a tiny quantity of the substance by mouth. The effects were so startling that his alarmed associates hurriedly called in a physician. "Faces around me appeared like coloured masks," he reported. "I watched with objective detachment while I yelled as if I were half mad and babbled incoherently. Everything seemed to reel. Audible sensations were transformed into vibrant, visual ones. With every new sound, a new coloured image was released.

The chemical that so affected Hofmann was a derivative from ergot, a fungus that grows on rye. It had been known for centuries that eating bread of fungus-infected grain would affect the brain and cause a crazed illness, epidemics of which have driven whole populaces mad in Europe and the United States. But here, for the first time in a laboratory, Hofmann had succeeded in forming a synthetic derivative which was called LSD.

Other chemists and laboratory workers immediately offered themselves as human guinea pigs so that the usefulness of this amazing chemical might be investigated. In the past five years scores of research volunteers at leading American institutions have stepped across the threshhold into temporary insanity.

Sane people drink a glass of water with a small amount of LSD in it, and, after a variable period, begin to lose touch with their identity and environment. They become so hallucinated and delu-

RECIPE FOR PEACE OF MIND

Louise M. Brown, R.N.

Spiritual Ingredients:

Grace enough to acknowledge and forsake our sins.

Patience enough to continue working until some good is accomplished.

Charity enough to see only the good in our neighbour.

Love enough to desire to be useful in helping others.

Hope enough to remove all anxious fears of the future.

Physical Ingredients:

Health enough to make work a pleasure.

Wealth enough to sustain a living.

Strength enough to do the thing before us.

sional that only experienced psychiatrists can tell them from actual schizophrenics. For the experiment every word and action is recorded.

What is the purpose of this strange and daring research? The classic method of conquering a disease always has been to produce it experimentally in the laboratory, so that its cause, process and cure can be studied. Yellow fever, diabetes, tuberculosis and many other diseases have been brought under control in this way. "When we know enough to be able to create a disease," one researcher said, "we are closer to its cure."

Mental illness is more widespread than any other major disease. Here at last was a drug of which investigators long had dreamed. With it they could accomplish many things. For example, they could learn to understand what a psychotic person is feeling and thinking. They could study the mental changes that take place as psychosis develops. They could relate also the mental changes to physiology and body chemistry and, finally, they could test various treatments.

Scores of research volunteers have become temporarily insane to test the effects of LSD, a new tool in the study of mental illness.

Photo: U.S.I.S.

Mental illness is more widespread than any other major disease. Here at last was a drug of which investigators long had dreamed.

At Boston Psychopathic Hospital, Dr. Max Rinkel and his associates gave LSD to more than a hundred healthy volunteers and a number of psychotic patients. The subjects' reactions were carefully studied and recorded for a number of hours by both the person under the influence of the drug and by observers.

LSD's value in experimental psychiatry lies in the fact that normal people under its influence can describe what they are experiencing without losing their awareness of being under the influence of a drug.

"The thread of reality is not cut," one psychiatrist said. "As usually defined, consciousness is clearly retained in almost all cases. Most of the patients appear to be partly withdrawn from reality but are able to describe their experiences afterward with remarkable clarity." During the LSD experience the patient has a feeling of watching himself, exploring his own mind and observing internal psychic events while retaining sufficient consciousness to record the experience and to reproduce it afterward.

Descriptions of the experiences undergone by volunteers attest the great courage required for one to allow himself to go mad even temporarily. On the average the major effects last about six hours. Signs of the drug's action begin to be observed from twenty minutes to one hour after it has been given. The subjects have a number of physical symptoms such as restlessness, tremor, weakness, sweating and sensations of hot and cold. An early sign is increased emotional

activity such as giggling, uncontrolled laughing or, less frequently, crying. This is followed by feelings of irritation, hostility, anxiety and apprehension such as any normal person has under stress. Almost all patients begin to breathe rapidly, their faces become flushed and their eyes fixed, or moving as if watching hallucinations.

In the second hour they begin to withdraw into themselves. They feel that something strange has happened and that things are different. Some have the sensation that they do not exist or that parts of their body have changed form. One man felt that there was nothing between his hip and foot, although he could see that his thigh and leg were intact.

One investigator reported, "Most characteristic is the assumption of colour by everything around the patient. Everything becomes tinged with blue or red so that the whole room and its furnishings appear to be of one particular colour."

"The environment becomes plastic with individual parts of the walls moving to and fro," one patient said. "I felt tears rolling down my face although I was not actually crying. Everything within sight appeared to be crying, with the walls of the room running with tears."

Seeing faces is a common effect of the drug. At first they are unidentifiable, but later patients may come to recognise them as belonging to someone they know. There is

a peculiar change in the sense of time. Even though a patient may know the date and time of day, it seems to lose its meaning and he may feel himself "out of time," with no concern for past or future. He may lose his usual discrimination between himself and others, often attributing his own feelings to other persons or to physical objects.

Of great interest has been the report of Dr. R. A. Sandison and his co-workers in England who have made use of LSD as an adjunct to psychotherapy. Dr. Sandison believes that LSD exerts a selective action on the structures which may be the seat of repressed memories. When he gave LSD to patients under psychotherapy, they divulged deeply repressed information which was of great value. As

this psychic material surged up into consciousness, disturbed and often violent behaviour resulted. In re-living personal memories, some patients became children of five or six and regressed to a more uninhibited and primitive type of behaviour. Some went through birth pangs with dramatic and characteristic pains and movements.

"Of particular interest was the observation of hostility," Dr. Rinkel says. "In personal relationships where the other person was demanding or threatening, the subject's attitude became hostile. As a result he tended to devaluate the person."

When a subject encountered a person who seemed unfriendly or too inquisitive, he perceived a change in the person's appearance creating an unfavourable caricature. He would refer to the person as having a diabolical face, a flattened face or as a young woman who looked a hundred years old.

On the other hand when the other person was friendly or gave him emotional support, the subject distorted him in an extremely favourable light, calling him, "big, my very rock of Gibraltar," "soft and warm" or "glowing with youth and health." The underevaluation of the interviewer in these circumstances, as shown by the distortion of his appearance, seems the result of keener and more acute realisation of inter-personal relationships by the subject under LSD.

The psychotic symptoms begin to decline rapidly in the fourth hour, and by the sixth hour the early symptoms of irritation, hostility and anxiety return. Then the effects of the drug subside and the subjects return to normal.

What would motivate anyone to volunteer for such an experiment? Many of the volunteers were attendants, nurses, psychologists and doctors at mental institutions who had struggled for years to get a deeper understanding of what their patients were thinking and feeling. They wished to have a temporary psychotic experience in order to gain this insight. Other volunteers hoped to gain knowledge of their own problems. Some came out of curiosity or for monetary reasons.

The experiments have greatly broadened the approach to mental illness and already have produced useful results. Researchers have seen the various defences a subject brings into use to protect himself from stressful experiences and the similarity of these defences to those

exhibited by schizophrenics. As a result they can detect stressful situations of which hospital staffs have previously not been aware. Thus they can determine what treatment will be the most effective.

More important is the insight that LSD has given into the minds and feelings of the mentally ill. Now that researchers can step at will into the world of the insane, barriers have been broken down and mental illness is no longer so strange or mysterious. There is better communication between the sick and the well.

The greatest value of these investigations, however, lies in their having directed interest to the biochemical and physiological basis of mental illness. LSD offers the possibility of tracing naturally occurring schizophrenia to its physical source. Tagged with radioactive carbon, LSD has been watched as it concentrates in the liver and adrenal glands. Here Dr. Rinkel and his co-workers believe it interfered with the chemistry of the adrenal glands that controls our emotional lives. They also believe that some naturally formed substance like LSD does the same evil job in schizophrenics as LSD does in normal people. It interferes with normal metabolism and brings on the disease.

The possibility then opens up that a counter-drug may be developed that would block the action of both LSD and its natural counterpart and permit the adrenals of schizophrenics to function normally. The LSD experiments offer a means of testing the effectiveness of such blocking compounds on normal human volunteers. Chlorpromazine, reserpine, sodium amytal and the hormone corticosterone have reversed the action of LSD. An injection of these drugs has brought volunteers who were raving back to normal hours before the effects of LSD ordinarily would have worn off. These drugs also have restored "natural" schizophrenics to lucidity but so far only for a short time.

Researchers now are seeking an anti-LSD substance that would also work effectively against "natural" schizophrenics. "Various observations will have to be related into a consistent theory to further research in this field," Dr. Rinkel says.

The pieces of the jigsaw puzzle are lying around. Many of the right pieces are at hand and others are yet to be found. Putting the whole together is a challenging task. Now it is at least possible to hope that learning what makes the personality of man function normally or abnormally lies just around the corner and that the war on mental disease may produce a major victory in the next few years.

THE MIRACLE OF MAN'S BONE

(Continued from p. 17.)

are almost in hiding. It is surprising to find how eight bones of many shapes can hide in each wrist, how seven can hide in each ankle, eight in the skull and seven in the face. All these numerous bones, apparent or concealed, show that the most curvaceous of women is as "bony" as the most emaciated of men, both having over 200 bones, ranging from the thigh bone, which is the largest, to the stirrup bone in the middle ear, which is the smallest in man's skeleton.

With all its tough durable bones, the skeleton would seem to be a dead and inert frame-work, designed merely to support the muscles. But bones are very active and alive in themselves even when the body is in complete rest. The densest bone is filled with blood corpuscles that are always busy with maintenance, repairs, adjustments and scavenging, even as mechanics in a manufacturing plant which runs day and night.

The marrow in bones is full of blood corpuscles. It is the wall surrounding this marrow that we usually call the bone. It looks impregnably solid, but is really tunnelled by canals through which blood vessels run. The outer side of the wall is covered by a fibrous, protective tissue called the periosteum. In children, this tissue forms two-thirds of the content of the bone while in the old it is only one-third, thus rendering their bones brittle and more liable to fractures.

Bone cells are active in all these three parts of the bone. For maintenance work, these cells use the skeleton almost as we use a

(Continued on p. 28.)

What A Heart Attack Is Like

THE time could be any time, but this is the time. Things are not going well at the office, and a thousand trivial worries add up to a hectic day for you. Two customers take a peevish attitude even though you patiently explain why things have to be as they are. Then it starts—a heavy, full pressure, a burning—in the centre of the breast-bone. What did you have for lunch? Only a salad and a hot drink. Surely that can't cause indigestion. Besides, that was four hours ago. Why is it hard to breathe, as if you had just climbed three flights of stairs?

Maybe some bicarbonate of soda will help relieve your pain. If only you could get that gas off your stomach. But the soda doesn't relieve you. Perhaps a bit of fresh air will help—it is stuffy in this office. No use going for a walk; it's time to go home. The exertion of walking to the car increases the shortness of breath, and the pain is growing worse. The temperature rises, and perspiration beads your forehead. Strangely enough, passers-by draw their coats close against the autumn air. Then all at once you too feel chilly and weak, and what is the matter with those legs? Are they turning to rubber?

You decide you shouldn't try to drive after all. Your head is spinning, and you feel your heart pounding in your ears, fast, as if you'd been running. The fire in your chest is searing your insides out. No, you can't drive. . . . Where to get help? The parking lot is deserted. . . . But you can't call out; the effort is too great. You slide down against the side of your car and crumple to the ground.

So this is it! But you are only forty, too young to be having a heart attack. That man up the street last month was seventy something. . . . And your father, he was almost seventy when he had his. . . . And he lived almost a year after that. The wife and kids are fairly well provided for—insurance—home almost paid for. If only you could get a good breath. The street lights and passing traffic are dimming and fading into the distance. Is this how it feels to die?

You rouse momentarily as someone bends over you, and you recognize the uniform of a policeman. Then you hear the sound of the siren, and know it is for you. You become aware of a white-clad figure kneeling beside you injecting something into your arm. The pain grows less, not stopping entirely, but you breathe more easily as they lift you onto a stretcher.

Funny, you don't remember the ride to the hospital, but there you are, breathing fairly easily with an oxygen mask strapped to your face, two doctors and a nurse beside your bed, wires hooked up to your arms and legs, and a wire to your chest over the spot where the pain is smouldering away. No longer do you feel that the next breath may be your last.

ROBERT L. HOWARD, M.D.

"Blood pressure is better now," the doctor says quietly to the nurse. Turning to you he smiles. "You're doing fine. Try to relax as much as possible. We've given you an injection to ease the pain, and make you sleep. You're going to be all right."

You smile weakly. "I hope so. Have you called my wife?"

Someone has called her, and she is on her way to you.

The two doctors mumble to each other, disconnect the wires to the little box (an electrocardiograph machine), and quietly leave the room.

"Are you breathing more easily now?" the nurse asks softly.

"Yes, quite a bit. When will my wife get here?"

"Soon. Don't try to talk now, just rest."

So this is how it feels. The burning pain is gone, but your chest feels sore. You are tired. . . . If only your wife would come; there are many things you need to tell her.

An orderly enters the room wheeling a large contraption with a cellophane tent attached. He arranges it over the head of the bed and removes the tight mask from your face. An icy blast of air chills you to the bone, but before you can complain, the nurse tucks you snugly with blankets and puts a ridiculous cap on your head.

You've always hated hats—feel they make you look stupid—so you protest, "I never wear hats."

The nurse smiles but goes right ahead adjusting it. "You are getting better. When they start to complain, it's a sure sign."

Oh, well! You'll wear their stupid hats. . . . What will your wife think when she sees you like this? . . . But you have to see her. Then she is here—worry written over her face. Her hand finds yours beneath the covers. . . . And that understanding look—it has always been this way—no need for words.

"Did you talk to the doctor?"

"Yes," she pauses briefly. "He says you're going to be all right." Now you can believe it—she tells you the truth. A little squeeze of her hand and that reassuring smile—the same you knew and loved even before you were married, twenty years ago. A warm flood of peace and relaxation engulfs you. Now everything is going to be all right. All the worries, bills, mortgages, are nothing. Then you sleep.

The bed-pan. How you hate it, yet all your arguments fall on deaf ears the first week. What do they think you are, a helpless infant? No more pain, no trouble breathing, appetite good—yet for a whole week they won't even let you feed yourself. It seems ridiculous, but when the doctor explains everything it is all right.

What is a heart attack? What causes a heart attack? Why did you have one? Thousands of questions flood your mind during the next three weeks. The doctor patiently answers them all, at least those that can be answered. You learn there are still many things that have no explanation, even to the man who devote their lives to the study of such problems.

Blood supply. You learn that the heart operates on pretty much the same system as business—supply and demand. You recall those dull

When you know what a heart attack does to you, you will work hard to avoid one.

aches you used to have when carrying trunks to the attic, when your arms would get numb and tingle for a while afterwords, but which disappeared after you rested for a moment. At those times according to your doctor, you had angina pectoris—the signal that the demand for blood by the heart has exceeded the supply.

This is caused by hardening of the arteries. Well, why did you have that? Because of many interrelated things. Heredity is responsible to some extent—at least to the point that the tendency toward enjoying food and over-eating runs in the family. Then there is cholesterol. What is this cholesterol stuff, anyway?

The doctor laughs (a little grimly perhaps) when you mention the foods you enjoy most. Who would think that milk, eggs, cheese, lots of butter, rich gravies, liver, sweetbreads, brains, kidney pie, fish eggs, lobster with drawn butter, and juicy fried pork chops with a healthy rim of fat would be harmful because of this injurious substance? Well, so it is a fatty

material found in high concentration in certain foods.

The doctor tells you that diet is not the entire solution, but that accumulating evidence indicates it is related, at least in some manner, to hardening of the arteries. For that reason you should avoid cholesterol and all fats, particularly since you tend to be "a little overweight" and have already suffered a near-fatal heart attack. Instead of butter, which is an animal fat, you may have small amounts of oleomargarine, which is made from vegetable fats. As your doctor explains, the body handles vegetable fats more easily than animal fats.

No longer may you drink a quart of whole milk simply because it tastes good. Instead, you may have skim milk—still an excellent source of minerals, without the forbidden butter-fat. For salad dressings you may use lemon juice and tomato juice, and will learn to like them.

You leave the hospital, under your own power, and what a triumph it is! There were times when you thought it might be done horizontally in a box.

At home, for the next month you gradually increase your activity around the house. Sticking to your low-cholesterol diet—which really isn't bad, after all—you are jubilant when fifteen pounds melt away like magic and the doctor approves your "ideal weight."

Once a week your wife drives you back to the hospital for a blood test. This is a continuation of the treatment given you from the first night you were hospitalized. The nurse at that time gave you a handful of small white pills, and

(Continued on p. 28.)

STORY TIME

THE TORN PAGE IN WALTEN'S HISTORY BOOK—PART II

Ellen E. Morrison

(SYNOPSIS: John had never liked Walten. Perhaps it was just that Walten was all things John wanted to be.

Then, during the lunch hour one day, John accidently knocked a book off someone's desk. No one saw him do it. Many of the pages were crumpled—two of them were actually torn. It was Walten's book!

When, after lunch during history class, Walten opened his book, at once the damaged pages opened. The class was given a written assignment that day. Miss Bawar, the teacher, walking down the aisles, noticed the torn pages. She asked Walten about them. "I—I don't know, Miss Bawar," he stammered.

John wished to speak out in confession.)

All this time John was squirming uncomfortably. As much as he disliked Walten, it wasn't fair to let him take the blame and pay the fine. Once he tried to speak, but no sound came out, and his mouth was strangely dry. But he tried a second time, and was more successful. "Miss Bawar?" he said hoarsely.

The teacher turned. "What is it, John?"

"I—I'm the one who should pay the fine!" he blurted out. "I knocked the book off his desk by accident when I came in to get my lunch money. I'll bring the one rupee tomorrow, if that's all right." John paused, and shifted his gaze to meet Walten's. "I'm sorry, Walten. I should have told you sooner."

Miss Bawar spoke then. "John, I'm glad you told us you damaged the book. You may pay the fine whenever you can, and it will be all right."

John glanced up at Miss Bawar as she spoke, then lowered his head and slumped in his desk, feeling miserable and condemned. Why had he been such a coward, not reporting the damage sooner? He hardly wanted to go outside the room between classes. He had never been very popular with his classmates, and now he felt sure they would have even less to do with him. But when he finally did leave the room, he was surprised. His

classmates were unusually friendly. He couldn't understand it.

He did not see Walten during the break between classes, but he had no liking for him, anyway.

Then, after school was out, when John left the building to walk home alone as usual, he was startled to hear Walten's voice calling, "Hey, John, wait for me!"

As Walten caught up, they turned and walked together. Walten broke the silence. "I just wanted to tell you how much I appreciate your admitting that it was you who tore my book. It was mighty big of you."

They walked along in silence for a while. Then Walten suddenly exclaimed, "We've never got along too well, have we?"

"No, I guess not," John agreed in a low voice. "It's been mostly my fault."

"Is there any reason why we can't be friends now?" Walten asked.

John looked at him in surprise. "You mean you want to be friends with me, after the way I've acted?"

"Sure, why not?" Walten said. "And the other fellows on our baseball team told me they'd like to have you come out for practice this afternoon. Do you have time?"

"Do I? I should say so!" John exclaimed. It was the first time the other boys had asked him.

"Fine!" Walten exclaimed. "Now I've got to get home and run an errand for Mother. I'll see you at the practice field in half an hour."

John stood and watched Walten until he was out of sight. No wonder Walten was popular with everybody! And strangely, he was happy to be friends with him at last, even if it had taken a torn book to do it.

SKIP-ITS

BERT RHOADS

IN A certain classroom two boys always schemed to sit together. They were "skip-it" readers. Neither of them could read well, but one could read a little better than the other. He would whisper to the first boy and help him on some of the difficult words.

The lesson to be read aloud one day had in it the sentence, "George Washington was the father of his country."

Boy One started out in a good strong voice. "George—" But he did not know the next word and nudged Boy Two who whispered, "Washington."

Boy One went on. "Washington was the—"But he didn't know the next word, and again nudged Boy Two, who whispered, "father."

Boy One proceeded. " Father of his—"

But was stalled again and nudged Boy Two. But Two didn't know this word, either, and whispered, "Skip-it.!"

Boy One read loud and clear for his teacher. "George Washington was the father of his skip-it!"

Skip-it boys and girls, like these two, get nowhere very fast. If they work in the garden they skip the weeds that are hard to pull. If they wash dishes they skip the pots and pans because they need the extra cleaning. If they mop or sweep they skip the corners.

And when these skip-it youngsters grow older they don't really grow up—they are still babies, only bigger ones. They expect Daddy and Mamma to wait on them hand and foot just as they did when they were younger babies.

George Guess, whose mother was a Cherokee Indian and whose father was a white man, lived among the Indians of his mother's tribe. While the other Indian boys hunted and fished they let their mothers care for the gardens and the cattle and the horses.

But George was different. He liked to help his mother in the hard work. There were no schools for George, and he was quite an old boy before he learned that the white man could put his words on paper. The Indians could not do that, for they had no written language. George thought this putting words on paper was like catching wild animals and taming them in cages. Could he learn to read and write the white man's language?

George was not the boy to do his work in a careless, lazy way, skipping over or around the hard problems of life. He studied the white man's language till he could write it well.

Grown to manhood, he acquired some wealth as a trader. The gold and silver coins he got from his sales he made into ornaments, and sold them to the Indians. He stamped his name, George Guess, on each ornament, and soon jewellery with his name became a sign of excellence.

The Cherokee Indians still needed a written language, and George was now ready to make it for them. Many years he worked hard, but at last he had an alphabet of eighty-five letters. He made them into words and everywhere men praised him.

Soon there were presses printing books in the Cherokee language. And George Guess went about among his people teaching them to read. He probably had some skip-it readers, too. Most teachers have them. Wouldn't it have been interesting to hear some of them read in the Cherokee language, "George Washington was the father of his skip-it," and see what Teacher Guess would do about it?

WORKING WITH "GINGER"

Part I

CHARLES K. TAYLOR

GINGER was a boy. Of course that was not his real name, but it was what "the fellows" called him .

"Why do you call him 'Ginger'?" I asked one of them.

"Oh," he replied, "because he isn't."

Boys' nicknames are usually significant. This lad's nickname had seemed singularly inappropriate until it was explained that he showed as little "ginger" as a boy could well show and live. When I first ran across him he was about fourteen years old. He was sitting with a group of boys who were listening to a supposedly interesting story—sitting right on the middle of his spine—and whether he was paying attention or not, it would have been difficult to tell.

Watching him that afternoon, I learned that his general behaviour bore out the first impression given by his attitude. It was obvious that he was an apathetic lad, inert mentally and physically. What, then, were the causes for this inertness and general slouchiness? He was not breathing through his mouth, although his jaw did sag a little sometimes. As far as I could see, the teeth in his upper jaw were regularly and nicely placed and were not the least crowded or crooked. No, Ginger had no adenoids. There might be no physical defect at all, but he was obviously in a miserable condition. His colour was poor and his muscular development wretched.

I cultivated his acquaintance and found that he had a first-rate mind, which at times worked with unusual celerity and effectiveness.

The problem was: Did Ginger go with a bad crowd, was he morose, moody, unpopular, and generally inert because he was physically under-developed, or was he physically under-developed because he went with a bad crowd and was basically inert, and so on?

One day Ginger was hit a staggering blow in a boy's most vulnerable spot when he was goaded into running a hundred-yard race with some twelve-year-old boys. He was fourteen, remember, so he could not well refuse a challenge, no matter how he hated running. The upshot was that he ran and that they beat him outrageously; for he fell flat with exhaustion before the race was more than half over.

(Concluded Next Month)

HOMEMAKERS' HELPS

THE BUILDING BRICKS OF THE BODY

M. Ninaj Larson

JUST as the various minerals and vitamins are necessary in our daily diets if we wish to be well and strong, so is protein necessary. In fact, life without protein is impossible, for protein is an essential part of every cell of the body and also makes up a large part of the solids of a muscle cell. Without protein, growth is impossible. Without protein, the repair of worn tissue is impossible.

What is protein and in what foods do we find it?

Proteins are jelly-like substances made up of various chemicals, chief among which is nitrogen. It is the nitrogen which makes possible the building and repairing of living tissues.

A protein is a very complex substance chemically. Each protein is made up of many individual chemical compounds which are called "amino-acids." In foods they are found in various combinations, thus giving a characteristic and different protein value to each food. Milk, for instance, is a rich protein food, and dahl is also a rich protein food. In each of these two foods the amino-acids are of different kinds and are arranged in different patterns. The proteins of both of these foods are necessary.

Frequently these amino-acids are called "building stones" or "building bricks," since living tissue is built of them. Extensive research has discovered about twenty-three of these amino-acids. About ten of them must be furnished to the body in food. Others can be formed in the tissues from the protein part of the food that is eaten. When we eat protein-containing food, the proteins are split up into their different amino-acids. These fragments are sorted out in the body and some of them are reformed into the new proteins which the body needs for repairing tissues and for building tissues.

If a protein contains all these essential amino-acids, we refer to it as a "complete protein," but if a protein food lacks one or more of them, we call it an "incomplete protein." Both kinds are necessary.

Milk, some nuts, soya beans, eggs, and meat contain complete proteins. Legumes (such as dahl, beans, or peas), whole grains, vegetables, and fruits contain proteins which are incomplete, but which are of an excellent quality. When legumes or any of the other so-called incomplete proteins are combined with milk or eggs, the

RECIPES

Steamed Eggs

Oil an iron frying vessel. When it is slightly hot, break in the eggs and sprinkle over them about 3 tablespoons or more of water for every 2 eggs. Sprinkle lightly with salt, cover with a tight-fitting cover, and cook over a medium fire until white over the top like a poached egg. Remove and serve immeditely.

Dahl Cutlets

Three eggs; 2 cups breadcrumbs; 1 cup cooked dahl; chopped onion as desired; seasoning; salt.

Beat the eggs, add other ingredients, shape into cutlets. Fry until crisp and brown.

Green-Peas-and-Potato Loaf

Two tablespoonfuls margarine; ½ cup dry breadcrumbs, 1 cup cooked mashed peas; 1 cup cooked mashed potatoes; ¼ teaspoonful salt; ⅛ teaspoonful nutmeg; ½ cup thick white sauce; 2 hard-cooked eggs, sliced.

Brown crumbs in margarine and sprinkle half of them into a well-greased loaf pan to form a lining. Mix together peas, potatoes, remaining crumbs, and seasonings. Add white sauce made of 2 tablespoonfuls margarine, 2 tablespoonfuls flour, and ½ cup milk. Mix well. Lay alternate layers of the pea-potato mixture and the sliced eggs until all is used. Bake in a moderate oven, about 350°F. about half an hour. Serve with tomato sauce.

This mixture instead of being baked may be made up into cutlets and fried in hot oil.

body will be richly nourished. Flesh foods are not at all necessary, since the body with this type of combination receives a perfect combination of proteins for satisfactory repair of tissues which are worn down by every day's activity, and, in the case of children, for building new tissues, which, of course, means proper growth.

Because we cannot store proteins as we can vitamin A, fats, and sugars and starches, it is necessary for the housewife to give careful thought to her daily meal planning to make sure that her family is fed good quality protein food every day.

Children, adolescents, pregnant women, and mothers who are nursing their children have higher protein needs than do normal adults who need protein only for replacement of worn-out tissue. Those convalescing from a wasting illness and athletes in training also need a relatively high amount of complete proteins.

If the food does not contain enough protein, the body will be stunted, the physique will be poor, the muscles will not be properly developed, and the person will be fatigued and incapable of doing his best in any kind of work, mental or physical.

The body can use only so much protein and no more. The tissues take what they need; what can be used up for energy is so used—the nitrogen is excreted through the kidneys in the form of urea; and the rest, Dr. Sir Robert McCarrison says, "is left over in the intestines where it is wasted and goes bad. . . . When this happens, we may get ill because poisons are absorbed from the intestines into the blood: these poisons cause headache, fatigue, and sometimes pain and swelling of the joints."—*Food,* Dr. Sir Robert McCarrison.

Many people include flesh in their diets as the chief source of protein. However, a combination of protein-containing foods makes the use of flesh altogether unnecessary in the diet. A vegetarian diet has been repeatedly proved to be adequate for the best nutrition. It does not contain the poisons and bacteria that are present in the dead flesh of animals. And when carefully planned and well prepared, it produces vigorous physical health, a keenly active mind, and promotes a satisfying spiritual development, provided other conditions are conducive to such development.

Many eat flesh because it is a complete protein food. However, not many stop to think that the "complete protein" flesh of the cow or goat was made by the body of the animal from purely vegetable sources.

When the diet includes pulses, whole grains, and nuts, and milk and eggs, and when leafy vegetables and fruits are added, the protein is of so super-excellent a quality that there will be perfect maintenance and a superior building of new tissues.

Remember to use protein foods only in moderate amounts. A medium-sized serving of one protein-rich food besides milk or curds is sufficient. It is not necessary to serve milk or curds at each meal. We would also like to mention at this point that the protein is found in the skim milk, not in the cream. The other vegetables or fruits served at the meal also contain protein, though in smaller quantity. But a medium-sized serving of one protein-rich food, as just mentioned, with milk or curds at one or more meals (more in the case of children and pregnant or nursing women), besides the other vegetables or fruits that will be served at meals, will provide the body with all the protein of a good quality that it needs and that it can satisfactorily handle.

HOUSEHOLD HINTS

● When painting and re-doing furniture, be sure to protect your skin from paint splatters. Remove spots with turpentine and wash the skin thoroughly with soap and water. Also be sure to wash your hands carefully before eating. When through with the work, take a full bath.

● In case of dog-bite wash the wound promptly, gently, and thoroughly with soap and water. A doctor should be consulted at once in such an emergency.

● Figs are an excellent and nutritious food. Ancient literature is filled with references to the place of figs in the diet. Here is a good way to stew figs. Place them in a degchi and cover with cold water. Cover the degchi and cook slowly over a low fire for about half an hour. After cooking, you may add a little sweetening. A little honey or gur is excellent.

● An unusual way to serve figs is to cut up some stewed figs fine and cook them in a custard.

● When washing greens, cut off any wilted parts before putting them into the water. When cooking green leaves never add soda, for it destroys the vitamins in the greens, and takes away their crispness. You may cook the greens in a tightly covered degchi, with only the water left on the leaves after washing. This method preserves the vitamins, but the greens will be a bit faded in colour.

WHAT A HEART ATTACK IS LIKE

(Continued from p. 23.)

every day the technician drew blood from an arm vein. When you asked the doctor about it he said they were giving you anti-coagulants—medicine that would thin out the blood and help the damaged heart muscle heal itself. What if it gets too thin? Well, that is why the tests have to be taken every day to keep the blood at just the right amount of thinness. The medicine also will help prevent blood clots from forming, breaking off in the circulation, and wandering around the arteries and veins until they lodge in some part of the body such as the lungs, an arm or a leg, or even the brain.

While you were in the hospital you presented your arm for the "sticking" each morning without complaint. Although you have left the hospital you are recuperating satisfactorily, you continue taking the medicine for a while. By now the dosage is stable, and needs checking only once a week.

Cigarettes, or rather the absence of them, didn't bother you at first. The thought of smoking didn't occur to you while you were very ill, but after a few days you thought a cigarette would taste pretty good. After the oxygen tent was removed the doctor recommended very strongly that you have no tobacco. "Tobacco causes vaso-constriction, or clamping down of the muscular wall of the arteries," he explained. "And thus, when the hole in the middle is not so big, of course less blood can pass through to nourish the heart."

He also mentioned the sensitive electronic thermometers that when attached to a patient's fingertips show that after only one cigarette the fingers "cool off"—proving that the arteries have clamped down as a result of the tobacco.

That clinched it for you. After all, you want that ticker of yours to get all the blood it needs. You've already stopped smoking. It is now simply a matter of giving up one cigarette—the first one.

Finally the doctor gets around to what he describes as a very important part of the problem—the three double E's: (1) excessive exercise, (2) excessive eating, and (3) excessive excitement. These three, the doctor tells you, create conditions that produce blood-vessel disturbances of which heart attacks are only one example. And he cautions, they should be avoided not only by those who have had a heart attack but also by those who wish to prevent a heart attack.

Brother, you are sold! You know from very personal experience what a heart attack is like. If following your doctor's advice will lessen the chances of your having another, you'll be one of the best patients he's ever had. Your only wish is that you'd known ten years ago what you learned painfully at the age of forty.

THE MIRACLE OF MAN'S BONE

(Continued from p. 21.)

commercial bank. The cells withdraw calcium salts from the skeleton to compensate any lessening of the salts in the body through food deficiencies. The withdrawals seem to be effected by virtually blank cheques. No attention is paid to the bank book, or the weakening of the skeleton. If the food is continuously deficient, there is continuous withdrawal, finally ending in rickets or other skeletal diseases. On the other hand, if there is abundance of the salts in the body, the excess is no doubt deposited in the skeleton bank.

The cells, called osteoblasts and osteoclasts, do antagonistic jobs as builders and destroyers. But when a fracture to the bone occurs they show marvellous capacities of co-operation. The blood clots around the damaged parts, and the cells organize in this medium. The osteoclasts break down the damaged parts and osteoblasts build it up into new bone. A thick ring is created joining the broken ends and filling up the crevices. When union is complete the thickening is absorbed, leaving the bone as it was before, in shape and in content.

If a bone is seriously infected, as in osteomyelitis, and finally becomes dead, it has to be removed by surgery. If not, the bone cells themselves proceed with the removal of the dead matter. This scavenging is known as necrosis in medical parlance. Living bone surrounds the dead matter and by sheer force of numbers, as it were, push it up and out the skin where other cells have already established an opening, and a constant discharge of pus takes place until the dead matter is completely scavenged from the living system.

The bone cells are utilitarian in character, according to Sir Arthur Keith, M.D., Professor at the Royal College of Surgeons in England. They are capable of inferences and conclusions. When a person spends all his time in bed the bone cells do some quick thinking and conclude their master does not need strong limbs. They proceed to take away strengthening salts from limbs. Osteoblasts become sluggish and building activity is considerably lessened while the destroying activity of the osteoclasts is accelerated. If we exercise the bones, then building activity becomes faster than destroying, and the bones grow in strength.

Bones, or the cells in them, are

thus singularly alive, very observant of the moods and habits of the person in whose flesh they lie buried, and perform operations very similar to those of the person himself.

But human bones are a paradox: they are, especially in art, the recognized symbols of death and disintegration; but in actual fact, or to palaeontologists like Dr. Chung of the Chinese Academy of Sciences, they are symbols of life and serve as guides to life in the historic past.

THUMB-SUCKING

(Continued from p. 15.)

One mother offered her three-year-old thumb-sucker a watch if he would stop. She was a surprised but happy mother when he promptly accepted her offer and kept his part of the bargain.

The happy ending to the story is that you need not treat thumb-sucking during infancy or later on if it is associated only with sleep. You need not censure or shame. Should your child chance to need medical help, go to your pediatrician for guidance. Your reward will be worth the effort.

ARE YOU REALLY SICK?

(Continued from p. 13.)

diseases may be acute in the patient whose demand for affection has been frustrated.

Symptoms related to the nervous system:

1. Insomnia is generally of neurotic basis, unless it is due to pain or organic disease.

2. Headache is often associated with emotional stress, of a conscious or unconscious variety.

3. Itching and dizziness may be caused by dissatisfaction with the environment. The patient really wants to strike, shake, or punish another person, but instead becomes a martyr, taking punishment on himself.

Because about two-thirds of the illness encountered in general medical practice is essentially nervous and mental in origin, it behooves both the doctor and the patient to think deeply in their search for a neurotic factor as well as a physical defect. It behooves both to consider faithfully the question "Are you really sick, or do you only think you are?"

DON'T RUSH YOURSELF TO DEATH

(Continued from p. 10.)

by jumping out of bed at the sound of the alarm, rushing through her grooming, gulping down breakfast, and hurrying to work. She hurries all day under pressure, then rushes home and even tries to rush herself to sleep. She tosses a good portion of the night, and awakens exhausted. She never learns to relax, that is, not until she collapses.

An elderly woman, against her better judgment, decided to hurry across the street just as the light changed. She wanted to get home. She didn't know exactly why she was in such a rush, but she wanted to get home. An oncoming car screeched to a halt, but it frightened her, and her legs failed. She slipped, and broke her hip. The few hurried moments, actually of no consequence, brought many months of misery and great expense.

Elderly people are often victims of accidents caused by their desire to hurry. They forget momentarily they are no longer young and that their reflexes are not as fast as they used to be. They should consciously move more slowly and cautiously, never allowing themselves to become rushed.

Premilla's husband was irritable when he was hungry. To avoid an unpleasant scene she always tried to have dinner ready when he arrived home from work. But one night she was late, and hurrying. The baby was underfoot, and Premilla was getting more nervous by the minute. When the car came to a stop in the driveway, Premilla grabbed the teapot to prepare the hot drink. As she did so, the baby lunged forward excitedly to meet Daddy. There was a collision, the teapot slipped, and the baby was scalded.

If Premilla's husband had been a little more tolerant, and she hadn't allowed herself to become rushed and nervous, the accident might not have happened. Greater tolerance and consideration by all members of a family lessen nervous strain and reduce mishaps.

Mohan was a "better late than never" man. His boss warned him consistently about being late, until he finally said, "Mohan, if you're late once more I'll fire you." One morning Mohan overslept, but he couldn't afford to be late, not now with his wife expecting a baby. He rushed through the streets, careened around the corners on two wheels, and screeched his tyres slamming on the brakes. True the other fellow missed the stop sign, but if Mohan hadn't been rushing, he could have prevented the accident. It all happened because the demon "Hurry" took Mohan by the arm.

Being late can be a habit, and usually is. Starting ten minutes earlier can mean the difference between health and ulcers, high blood pressure, heart failure, or even life and death. It can be the difference between tension and relaxation or between mental alertness and dull stupidity. Arising ten minutes earlier can be the difference between security and disaster.

A hurried mind is not a rational

mind. One who is rushing is more concerned with the time element than with what he is doing. As a result he does not think clearly, and becomes momentarily careless. It is these rash or irrational moments that bring about burns, broken bones, and even death.

Under the pressure of present-day living and business, the pitch-fork "Hurry" is constantly on the prod, creating havoc wherever it goes. Until we learn to allow enough time for each task and refuse to be rushed, the demon "Hurry" will remain on the prowl.

Slow down, learn to relax. Live a little more healthfully, a little more wisely, and quite a little longer. Don't rush yourself to death!

GARDENING FOR HEALTH

PEAS AND TOMATOES

D. G. Cooper

PEAS

ALTHOUGH there are innumerable varieties of green peas, they may be simply classified as the tall or the dwarf kind. It is not necessary for the home gardener to cultivate a dozen or two different varieties, but planting a few selected varieties will be well worth the trouble. The Telephone, Alderman, and Laxton types do extremely well in the plains. Marrowfat or Sugar peas are more suited for the hill stations.

Peas should be sown preferably at the termination of the monsoons. However, if rainfall is less than 20 inches, the seeds may even be sown at the commencement of the rainy season. Soil which is well enriched with stable manure is most suited for peas. If a little lime is also incorporated with the soil, it will prove very beneficial to the plants. Undecomposed manure generally tends to promote mildew on the plants. The table will give an idea as to the correct distance for sowing the seeds.

	Time to Plant		Distance for Plants	
Name	Plains	Hills	Between Rows	In the Row
Peas Dwarf	Sept. to Dec.	Feb. to April	18" to 24"	1" to 2"
Peas Tall	Sept. to Dec.	Feb. to March	4 ft. to 6 ft.	1 in. to 2 in.

Invariably pea seeds are eaten up by insects before they have a chance to sprout. For this reason it is advisable to treat the seeds with a little red lead or any other suitable seed dressing that is readily available in the local market. Cutworms cause a great deal of damage to the young plants. Poison bran mash will soon eradicate this pest if baits are kept scattered around the plants.

Water the plants sparingly in the beginning—say once a week—but shorten the interval to four days once the plants start flowering. When the pods appear pinch off the leading shoots to check the growth of the vine and to concentrate the energy of the plants to the pods. To ensure a continuous supply of peas make successive sowings of two or three different varieties every ten days.

Pea aphids, if unchecked, will appear in great abundance and cause severe injury to the plants. Spraying with a nicotine solution will prove very effective.

Tomatoes

Anyone who has taken the pains to cultivate a small plot of tomatoes will never again be satisfied with the local market product. There are many different varieties of tomatoes, viz., Bonny Best, Ponderosa, Oxheart, Yellow and Red Pear, Cherry tomatoes, etc. All these varieties not only differ in shape and colour but also in flavour.

In India very few realize the high nutritious value of this vegetable which is so rich in vitamins. Besides being used for cooking it can also be eaten raw. The juice of tomatoes is not only delicious but provides many health-giving properties.

In the plains sow the seeds from August to December and in the hills from April to June. Transplant

GARDEN CALENDAR FOR MAY

Plains

Vegetables: With the exception of Gourds and Sag, no other vegetables to be grown this month.

Flowers: Keep the beds ready for sowing the summer annuals next month.

Fruits: Layering of fruit trees should not be taken in hand.

Hills

Vegetables: Sow Beans, Carrots, Lettuce, and Indian Corn.

Flowers: Roses may be given liquid manure.

the seedlings when they are about two inches high. They should be in rows four feet apart and twelve to fifteen inches between the plants. Since tomato plants need staking they can either be supported by strings or stakes or may be grown against a wire netting.

The plants will thrive better if the lateral shoots are pinched off and only three or four stems are left remaining. Suckers growing at the base of the plants should also be removed. Tomatoes do not need any extra fertilizing if sufficient stable manure is incorporated with the soil at the time of transplanting.

Cutworms generally eat up the stems of the plants and sometimes the leaves as well. Spraying with Lead Arsenate will prove effective. Poisoned bran mash scattered around the plants, is also a good remedy. Leaf curl and leaf blight can be prevented by spraying with Bordeaux mixture or Pyrox.

THE EDITOR ASKS
"Need a Lift?"

(Continued from p. 7.)

the doctor prescribes it, it is of value. But its value is lessened in such cases when it is used habitually. It is also a tonic for the heart, and here again, when used under medical advice as a heart tonic, it may be helpful. It also has a strong diuretic action, that is, it seems to stimulate the function of the kidneys and the organs of urinary excretion. When caffeine is taken into the body it is there oxidized to uric acid and excreted in that form.

A great many medical practitioners warn patients to do without tea and coffee and it is very well known that in certain cases there are good reasons why caffeine is harmful to the individual. Since we have already mentioned gout we will refer to it again in this connection. In gout everything must be done to lower purine intake and in this way to lighten the load of already over-burdened kidneys. In such diseases not only should the patients eliminate from their diet flesh food, but also tea and coffee which contain caffeine, and other purines.

Another purine found in tea is theophylline. There are small traces of this in tea. Another purine found in tea is theobromine. It is interesting to know that this is not found in coffee beans, but is found in an extract of the cocoa bean. It is a powerful diuretic and is also excreted as uric acid by the human body. Tea leaves also contain the purine known as adenine. This substance also contributes to the uric acid output of mammals.

It should be clear from this presentation that we do not recommend the use of tea and coffee because of the drugs which they contain; drugs which place an additional burden on the body and cause a stimulation which is unnatural and which is often ultimately detrimental to the human system. How much better it is to make use of such substances only at times when they are needed in order to restore or preserve health rather than to give a temporary "lift," as they are so commonly used. It is better to eliminate from the diet everything which is of harmful effect upon the human system and to eat and drink only those things which contribute to the general well-being of the system.

In closing we quote from *Good Food*, by G. E. Cornforth, pp. 212, 213.

"Tea and coffee contain two harmful substances, tannin and caffeine. Tannin has a tanning, or astringent, effect upon the lining of the stomach and upon albuminous foods. It interfers with salivary and stomach digestion.

"Caffeine is one hundred times as deadly a poison as alcohol. This will account for the statement made by Dr. D. H. Kress, 'Tea is worse than beer.'

"One pound of average tea contains 252 grains of caffeine. Twenty grains of caffeine is sufficient to kill a man. In one pound of tea there is sufficient poison to kill twelve men, two rabbits, and fourteen frogs.

"One cup of tea contains from one and one-half to one and three-fourths grains of caffeine, and three or four grains of tannin. Therefore it takes a little more than twelve cups of tea to contain a deadly dose of caffeine.

"A cup of coffee contains the same amount of caffeine and tannin as a cup of tea.

"Sleeplessness, stomach trouble, palpitation of the heart, headache, constipation, nervous disorders, arterial and kidney diseases, and liver trouble are some of the diseases caused by the use of tea and coffee.

"Tea and coffee blunt the sensibilities and make those who use them oblivious of consequences. This is the reason that a cup of tea will make a tired woman feel equal to doing a big washing.

"Tea is more powerful to keep people awake than opium is to put them to sleep.

"Dr. Alexander Bryce, in *Modern Theories of Diet*, page 152, says, Tea, coffee, and cocoa are nerve poisons, cardiac poisons, and cerebral excitants."

—L. J. L.

?

ECZEMA: Ques.—"I had eczema on my hands and the lower part of my body. I tried an ordinary medicine, and after a long time it seemed to have been cured. But recently it has again appeared on the upper parts of my feet, and a white fluid exudes from affected parts. Please help me by suggesting some treatment that may cure it permanently."

Ans.—Without examining you personally, it is not possible for me to determine whether you have Eczema or a Fungus infection. I presume that the infection is fungus in nature. I would suggest that you soak the affected part in Potassium permanganate solution 1-5,000, until there is no discharge and then apply Whitefield's ointment twice a day.

?

FIBROSITIS: Ques.—"Can you please tell me the cause of muscular pains, specially near the neck, and a little sound of cracking while turning the neck sideways. What is the best thing to do to strengthen the muscles of the body, and is there any medicine or special foods that will help?"

Ans.—Pains in the neck frequently occur because of a Fibrositis, an inflammation of the fibrous tissues of the neck. Deep and heavy massage of the neck following the application of heat is the preferred treatment. Heat should be applied, preferably by hot fomentations, i.e. blanket cloth, fifty per cent cotton, rung out of boiling water, and applied to the neck repeatedly for a period of about twenty minutes, exercising due care not to burn the skin. Massage can be done with the fingers, kneading and pressing the muscles for an additional period of about twenty minutes. This done once or twice a day regularly, should be of real value. The muscles of the body can be strengthened by exercise. One should be sure to take a sufficient amount of protein foods with vitamins that will enable the body following the exercises, to build muscle tissue.

?

WORMS: Ques.—"I am a young man of twenty-six and married. I am suffering from thread-worms. These increase and decrease. When a large number they bite in the rectum. I have been under treatment for three years but they do not go entirely. I used Santinin Viola, etc., but am not cured completely. Please suggest some treatment."

Ans.—A very simple and effective treatment for thread-worms is the use of Atabrin. 10mg. per kilogram of body weight to be taken on an empty stomach the morning after having had no supper the night before. The purgative should be taken three hours later. However, treatment is of little value for one person in a family unless all are treated, and the house and surroundings are thoroughly cleansed of eggs, the probabilities are that you will be re-infected shortly after, and so the trouble continues.

?

INHERITING DUMBNESS: Ques.—"Will children of dumb parents be dumb too?"

Ans.—Children born of dumb parents may also be dumb, as this may be a hereditary thing. In some instances a child may be dumb because it associates with its parents and does not learn to speak as other children would.

?

NASAL ALLERGY: Ques.—"My sister, 16 years old, suffers from frequent colds and nasal blocking. She also has a peculiar, uneasy, upset feeling in the stomach, and gets no sleep during nights when she has this stomach disorder. Her appetite is poor. Kindly indicate treatment."

Ans.—The frequent colds and nasal blocking suggest nasal allergy. Some anti-histamine given under the supervision of a well-qualified physician should give relief. We would also suggest a stool test because the upset feeling of the stomach may well be due to the presence of parasites.

?

STOMACH ULCER: Ques.—"I suffer from stomach ulcers. I secured admission in a good hospital here for treatment for my stomach ulcer and am much better now. I have gained 5 lbs. in weight. I have had this trouble once a year for five years now. Why this recurrence? What should be done to cure it altogether?"

Ans.—People who are susceptible to ulcers have frequent recurrences because the factors that produce the ulcer are usually present to produce a second and third one later on. The emotional upsets, the use of tobacco, tea, coffee, hot condiments, etc., predispose to ulcers. It is important that you start treatment immediately when symptoms re-appear. If there is too much difficulty, it is advised that you have a sub-total Gastrectomy—an operation which eliminates the ulcer producing area of the stomach and Duodenum.

?

CHEST PAIN:Ques.—"I am 31 years old and feel pain in left side of chest when breathing. Consequently it is painful to talk or walk. Doctors have diagnosed Eosinophil seven per cent and a slight inflammation in a certain area in the lungs. I took pentazol for 1½ years with great relief. But the pain has returned now. What treatment would you advise?"

Ans.—I would suggest that you repeat the Blood Count to see if the total White Count is above 10,000 and the Eosinophalia count above ten per cent in which case an injection of Acetylarsen every five days for a total of six injections is indicated. I would, however, also recommend a chest X-ray and Sputum examination and a careful physical examination by a qualified physician to eliminate the possibility of Pulmonary Tuberculosis.

THE DOCTOR SAYS

1. This question and answer service is free only to regular subscribers.

2. No attempt will be made to treat disease nor to take the place of a regular physician in caring for individual cases.

3. All questions must be addressed to The Doctor Says. Correspondence personally with the doctor is not available through this service.

4. Questions to which personal answers are desired must be accompanied by ADDRESSED AND STAMPED ENVELOPES. Answers cannot be expected under ONE MONTH.

5. Questions sent in on Post Cards will not receive attention.

6. Make questions short and to the point. Type them or write them very clearly.

7. Questions and answers will be published only if they are of such a nature as to be of general interest and without objection, but no names will be published. Address "The Doctor Says," Oriental Watchman and Herald of Health, P. O. Box 35, Poona 1.

THE LAST WORD

Tuberculosis Preventive

A chemical which may prevent tuberculosis in persons who are "tuberculin positive" is being tested in the United States, according to a joint announcement by the National Tuberculosis Association and the United States Public Health Service.

Tuberculin positive persons comprise about 75 per cent of all tuberculosis cases in the United States. A tuberculin positive is a patient whose skin reacts and becomes inflamed in response to a tiny dose of killed tuberculosis bacilli. The dose is often called a patch test and indicates that the patient either has active tuberculosis or has recovered from a tuberculous infection.

The chemical which may aid these persons is called INH. which stands for isonicotinic acid hydrazide. It is a simple chemical which can be produced cheaply. In conjunction with streptomycin and sometimes also with P. A. S. (para-amino salycilic acid), it is already widely used for the treatment of active tuberculosis.

Only a small dose of INH would be required to prevent tuberculosis, according to Dr. Carol Palmer, chief of tuberculosis research for the United States Department of Public Health. He said that the prescribed preventive dose would probably be one small pill the size of an aspirin tablet once a week.

If the INH preventive treatment proves effective, it could give protection to the group of persons most likely to contract tuberculosis—the "tuberculin positives." Until now B. C. G. vaccine has afforded a degree of protection to "tuberculin negative" persons, but it cannot be given to "tuberculin positives."

The testing programme on INH is being carried out with the co-operation of 900 children and their parents. Half of the children are being given a small dose of INH, while the other half, acting as controls, are given inert pills.

The official adoption of INH depends on the results of the tests. So far, Dr. Palmer reported, not one of the patients under treatment has contracted active tuberculosis, but it is too early to be positive concerning the final results.

Officials of the Public Health Service, however, are so pleased with the results already indicated by the tests that they are using INH for their own laboratory technicians and others who are exposed to tuberculosis infection.

Water-Purification Plant

A "PACKAGED water-purification plant" capable of satisfying the emergency water needs of 50,000 people, has been developed at the U. S. Army Corps of Engineers Research and Development Laboratories in Fort Belvoir, Virginia. The plant, which can purify water up to the rate of 12,000 gallons per hour, can be operated by one man. The plant consists of three main all-aluminium sections—a cone-shaped up-flow coagulation basin 14 feet in diameter, which removes mud, bacteria and other suspended matter from polluted water, and two gravity-type sand filters. The unit is housed in a 40-foot building.

Smoking and Cancer

In an effort to stop the unscientific bickering that has raged for years over scientific evidence linking heavy cigarette smoking to lung cancer, four prestigious organizations (The National Cancer Institute, National Heart Institute, American Cancer Society, American Heart Association) set up a seven-man study group. Chairman: the University of Wisconsin's Biochemist Frank M. Strong. By the end of March the group's findings were out. Big black headlines in the press notwithstanding, the report contained no new evidence, represented instead a careful appraisal of all the published (and some unpublished) data. Conclusions:

● Cigarette smoking is indeed a major cause of lung cancer. The risk increases with the amount smoked, averages five to 15 times greater (on half a pack a day or more) than among non-smokers, is 27 times greater for those who smoke two packs a day.

● Smoking is by no means the only cause of lung cancer: another is air pollution. In smoggy Liverpool (England) 50% of lung cancer deaths have been laid to smoking, and 35% to air pollution. (A U. S. estimate blames air pollution for 31%.)

● Evidence linking smoking with heart disease is inconclusive.

"The smoking of tobacco, particularly in the form of cigarettes, is an important health hazard," the seven experts conclude. "The evidence of a cause-effect relationship [with lung cancer] is adequate for considering the initiation of public-health measures. But the group suggests no such measures. Instead, it urges more research to find the cancer-causing substance in smoke, and a simultaneous effort to remove it even before it is chemically indentified. Possible answers to the problem: selection of tobacco strains, extracting the offending substance from the leaves or filtering it out of the smoke. Most of today's filters, says the report, are inefficient and non-selective; they merely trap a little of the smoke.—*Time.*

A Protein Called Phenylalanine

Doctors are learning to control phenylpyruvic oligophrenia, a brain-crippling disease of infants caused by the body's failure to assimilate a protein called phenylalanine. University of Minnesota nutritionists report the case of a one-year-old boy in whom a diet of enriched and predigested milk protein, plus fruits and vegetables, arrested the disease. —*Time.*

Printed and published by L. C. Shepard at and for the Oriental Watchman Publishing House, Salisbury Park, Poona 1. 2364-57.

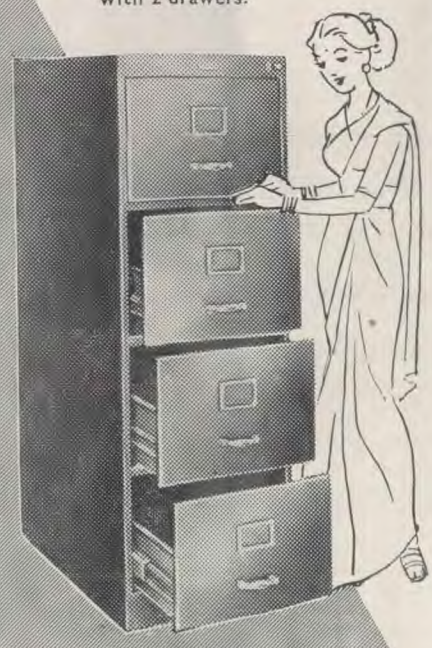
Modern Office Equipment—

For modern office equipment—designed to save floor space—smart in appearance—easily cleaned and moved—good for years—see **SteelAge.** Highgrade steel, modern designs, craftsmanship rarely equalled—and low cost—make **SteelAge** products worth considering.

SERVALL CABINET
78" H x 36" W x 19" D. with 4 adjustable shelves. Also, Servall Junior, with 3 adjustable shelves.

OFFICE DESK AND CHAIR
Made of highgrade steel, they last a lifetime. The tubular revolving and tilting chair has a cushion seat and padded back.

FILING CABINET
Foolscap size, with 4 drawers running on ballbearing suspensions. Also available with 2 drawers.



Symbol of Security and Beauty in Steel

STEELAGE INDUSTRIES PRIVATE LTD.

HEAD OFFICE & WORKS: opp. Post Office, Mazagaon, Bombay-10 'Phone: 41014 'Grams: "STEELAGE"
SHOWROOM: Readymoney Mansion, Vir Nariman Rd. Bombay-1. 'Phone: 20429
BRANCH OFFICE: 71, Ganesh Chandra Avenue, Calcutta-13. 'Phone: 24-1121. 'Grams: "SYMBOLIC"

SA.57.3

THE BIG BAD WOLF

(Continued from p. 2.)

This important step forward represents a high degree of international collaboration, coordinated by WHO, because it could not have been achieved by any single country or laboratory alone. The Committee members, whose laboratories are situated in India, Iran, Israel, France, Spain and the United States, have been working together on problems of rabies control since 1950.

Side Reactions

Additional research carried out by several of the Committee members showed further that it was necessary to give a complete course of vaccine along with the serum therapy. Moreover, because of side reactions which can be produced by any serum, it was recommended that serum be used only in very severe exposures after testing the person for sensitivity.

The Committee also studied the results of exhaustive experiments designed to determine the best procedures to follow in treating wounds inflicted by animals suspected of having rabies. These studies showed the value of immediate cleansing with soap and water, followed by cauterizing with nitric acid on parts of the body where this can be used without danger. The third step recommended in local treatment of wounds is to inject serum around the site of the bite.

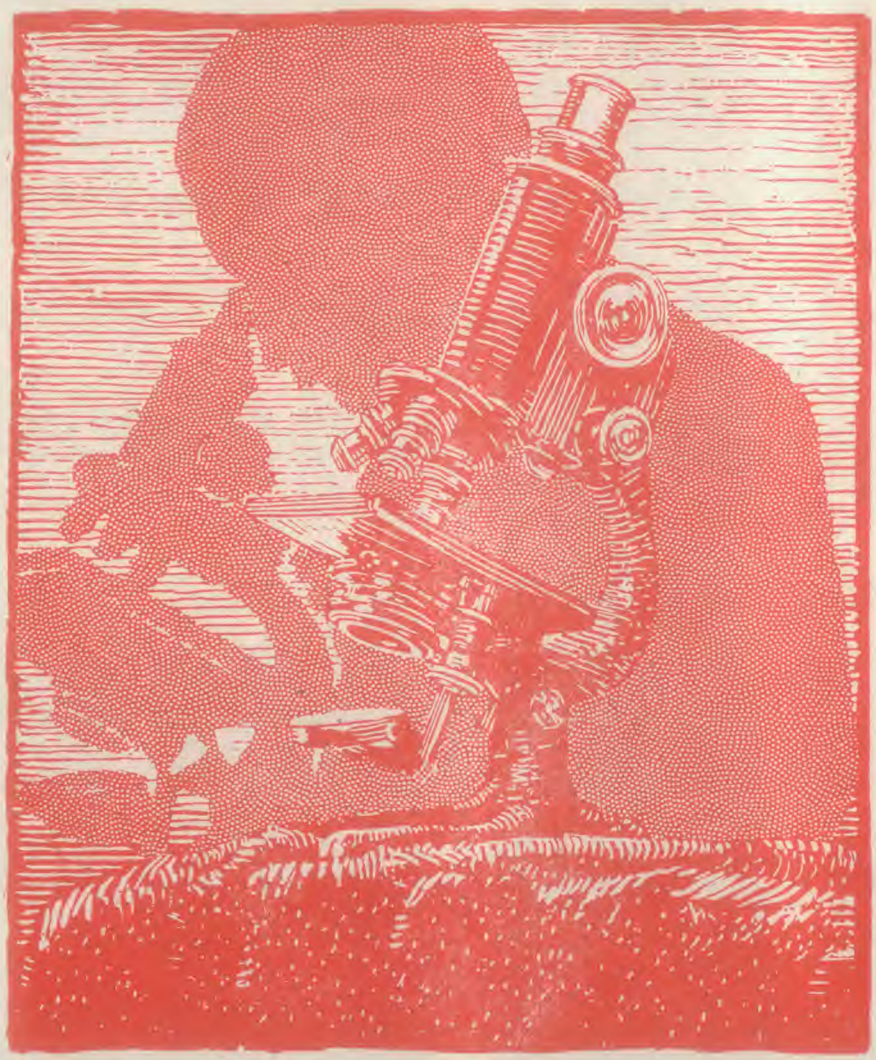
A new technique for protecting persons whose occupations expose them to the possibility of bites of rabid animals was delineated by the Committee. Veterinarians, laboratory workers, postmen, personnel of gas and electric industries and delivery services must often undergo repeated treatments with rabies vaccine, which carry a danger of post-vaccination complications.

Basic Protection

The new approach involves providing basic protection by giving very small doses of chicken embryo vaccine, or a few doses of ordinary nervous tissue vaccine, followed by a single booster dose of vaccine after they are bitten instead of the long (14- to 21-day) schedule of inoculations now performed.

Results of studies made on improved vaccines for dogs, cats, and cattle were also discussed. Recently developed vaccines prepared from chicken embryos were found to confer long-term protection on dogs by only a single inoculation and were demonstrated to be useful also for cattle. It was stressed by the Committee that it is not only necessary to vaccinate dogs but also to control stray animals.

Rabies in wild life, particularly in foxes, jackals and wolves, is a problem in many countries. It also exists in insectivorous bats in areas of North America and it has long been established that rabies is transmitted to men and animals in Latin America by blood-sucking bats. The finding of rabies in insectivorous bats in Yugoslavia indicates that this problem is not confined to the Western Hemisphere. Wild animal reservoirs present special difficulties and it was agreed that extraordinary measures must be evolved to combat them.



Registered No. B-1886. Pak. No. L-5668.