

Vol. 39, No. 2

FEBRUARY, 1961

Price : 25 nP.

1923

HEALTH

FOUNDED BY THE LATE DR. U. RAMA RAU

A JOURNAL DEVOTED TO HEALTHFUL LIVING

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U. KRISHNA RAU,
M.B., B.S., M.L.A.

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What's New in the News?

World's Longest 7-Mile Tunnel— (8th Wonder :)

With high-powered rock drills teams of French and Italian engineers are blasting a seven-mile-long tunnel through that snow-capped giant, Mont Blanc.

When completed in 1963, this tunnel will prove an immense boon for motorists, shortening the overland route from Paris to Rome by 200 miles, and could be the eighth wonder of the world.

So far the French, working from a point called Les Pelerins (the Pilgrims), 4,180 feet high in Chamonix, have advanced a mile underground. The Italians, excavating since spring, 1955, from the Val d'Aoste, have blasted a hole a mile and a quarter long. So accurate are the engineering calculations that despite hazards such as floods and roof falls the teams expect their tunnels to meet almost exactly. Biggest error allowed for is a deviation of six inches.

The project is costing £10,000,000 but the money will be regained by tolls levied on traffic.

Fresh-air supplies will be vital inside this tunnel, the world's longest for motor traffic, so the roadway is being built eleven feet above the tunnel's floor. That will allow for an undersurface cavity carrying ventilation shafts.—(Tit-Bits, 10-12-1960).

Miniature Electrostimulator

Moscow specialists have designed a miniature electrostimulator which weighs only 300 grams and easily fits in a palm. A physician can use it in an ambulance or helicopter or on a mission to a faraway village. The miniature electrostimulator makes it possible in the same way as by using similar instruments of conventional size quickly and efficiently to level out the rhythm of irregular or ceasing heart beats.

The electrostimulator is based on transistors and operates on a pocket flash battery. This is now undergoing clinical tests at Moscow's medical institutions.

Ashtangasareeram

By

P. S. VARIER.

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MANAGER,

ARYAVAIDYASALA,

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Onions Foretell Weather

Country folk in France have a quaint Yuletide custom which many thousands will observe again this year.

On Christmas Day twelve onions are placed on a shelf, each with a pinch of salt on top, to represent the twelve months of the year.

If by Epiphany the salt on any particular onion has dissolved, the month it represents will be wet, they say. If the salt remains firm the month will prove fine.

Aid to Childless

Tensions and emotional disturbances are sometimes the reason why a woman cannot produce a fertilizable egg, and hence is childless, says a team of three Seattle physicians, a marriage counsellor, and a clinical psychologist. They report "most rewarding" results in seeking out and dealing with the emotional problems.

Saboteur of Judgment

Barbiturates can produce profound errors in judgment when taken in average doses, Harvard researchers find from tests on college swimmers. The men misjudged their performance times significantly, say Gene M. Smith, Ph.D., and Henry K. Beecher, M.D. "One can only wonder how many accidents occurring each year on the highway, in industry, in the home, and elsewhere are due in part to impairment produced by barbiturates, analeptics (stimulants), tranquillizers, and other drugs given to ambulant patients," they write.

Crossed Legs Hazards

The habit of sitting with crossed legs can bring on or aggravate a raft of problems through interference with blood flow, warns Dr. Hyman J. Roberts of West Palm Beach, Florida. Some examples are chronic arthritis of the knees, varicose veins, dropsy, sciatica, and formation of blood clots. Persons with long legs and pregnant women are especially vulnerable to the hazard of clots which may later lodge in the lungs, he adds.

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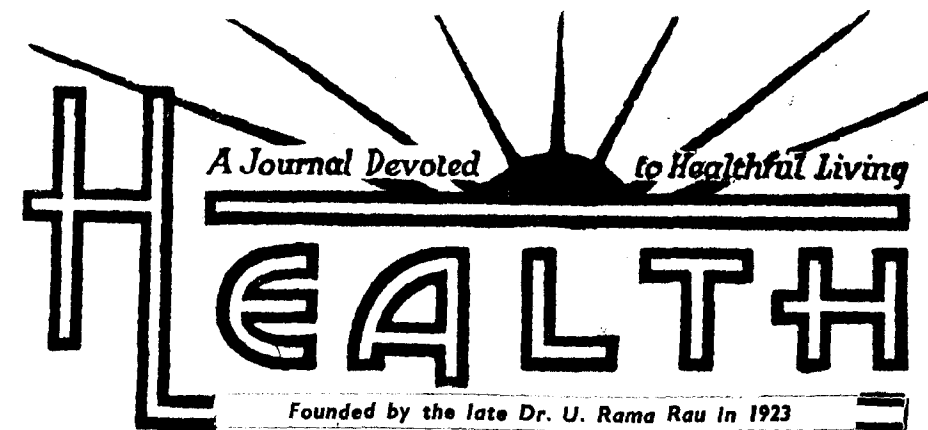
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Published on the 15th of every month

Consulting Editor : U. KRISHNA RAU, M.B., B.S., M.L.A.

Editor : U. VASUDEVA RAU, M.B., B.S.

Annual Subscription : Rs. 2-50 nP. Foreign Sh 5. Post Paid. Single Copy 25 nP.

Editorial and Publishing Office : 323-24, Thambu Chetty St., Madras-1

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ENVIRONMENTAL SANITATION : (Keystone of Progress)

“IMPROVEMENT of sanitation is a fundamental requisite of economic advance,” said Dr. C. MANI, WHO Regional Director, S. E. Asia, while considering the problems of training and utilization of sanitation workers in India, at a conference to promote the sanitation drive in India.

The five-day conference, sponsored by WHO and the Government of India, was attended by WHO Sanitarians working in various health projects in India. It is common knowledge that several causes have been responsible for the unsatisfactory sanitary conditions, which include economic, social, educational and administrative factors. An important factor—and one which *can* be remedied—is the quality and proper use of the staff employed in sanitation work.

In India people are generally fastidious about cleanliness in their personal life and in the household but they are not so particular about keeping their surroundings clean. “The public find little encouragement,” as Dr. MANI said, “from the authorities in improving their environment. Public money spent on social services is often inadequate and the staff employed in these services insufficient or not fully trained and not always well-directed or supervised.”

India has made much progress during her first two Five-Year Plans and is about to launch her third. However, a realistic programme with a proper human approach to meet the pressing need for environmental sanitation is yet to come. Any major development in the field of public health cannot be achieved

ARYAVAIDYASALA,
Kottakal, S. Malabar.

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without an emphasis on the control of the environment in all its aspects.

Recommendations to relieve "the pressing need for improvement of environmental sanitation" throughout India were made at the close of the five-day conference held at Delhi.

Better training for the auxiliary sanitation worker, more security in his job, and better prospects of advancement, backed by opportunities for continued education, all these are envisaged in the recommendations, which begin by clearing away the tangle of designations at present attaching to sanitation workers. Two main denominations are proposed:—First, "Health Inspector"—this being a field worker who has passed a standard health inspector's course, and secondly "Health Assistant"—a field health-worker who is under the direction of a health inspector. This term would thus cover such varied current designations as vaccinators, disinfectors, etc. It has been recommended that fully-fledged training institutes, with adequate facilities for theoretical and practical field-training of health inspectors, should be established in each State.

To promote an uniform and more effective training pro-

gramme throughout the country, on a continuing basis, a Central Council—on the lines of the All-India Nursing Council, should be set up. For health inspectors, the minimum period envisaged for the training course is one calendar year which should include three months' intensive practical training. Nation-wide facilities should, it is urged, be developed so that health inspectors may be able to receive specialized and advanced training. There should also be adequate provision for refresher courses and in service training.

In view of the urgency of improving environmental sanitation in rural areas an additional health inspector should be appointed in every Block exclusively for this work, with senior health inspectors at district or appropriate level.

The services of health inspectors should be provincialized. This would give them necessary protection, tenure of office, better prospects, and chances of promotion, and so we consider that the recommendations made at this important conference should be implemented by the Central and State Governments without undue delay. We wish to stress again the urgent need for improving Rural Welfare and Environmental Sanitation throughout the land.

Health Education

Many chronic ailments of older persons are largely preventable, and not something caused necessarily by aging, observes Dr. Charles L. Wilbar, Jr., Secretary of Health of Pennsylvania. There's much medical knowledge about how to keep well, but it is not being applied. He urges more health education in schools to establish lifelong good habits. Many United States school children apparently are not being taught how to keep well and their health textbooks often are "woefully out of date."—(*Today's Health*, Sep., 1960).

GUARD AGAINST DIARRHCEA

(Meticulous cleanliness, especially of the hands, is one of the most important safeguards)

JOYCE WRIGHT, D.M.,
London

DURING an outbreak of diarrhoea in an infant school the teachers, very sensibly, put notices inside the lavatory doors, which said, "Now wash your hands." The tinies could not make them out, so these were the first words that they were taught to read and write. They knew then that hand cleanliness spells protection against germs.

There are three distinct kinds of infectious diarrhoeal illness to guard your family against. They are:—Sonne dysentery, food-poisoning, and infantile gastro-enteritis.

Sonne dysentery affects more children than adults, and outbreaks often happen in schools. It is caused by intestinal germs. Infected people excrete these Sonne dysentery germs in the stools and may do so even after recovery. Some people become infected with them but do not develop any illness.

Parents may wonder how to stop the infection spreading in the family if someone brings it home. This is not easy, for it is very catching. The intestinal germs leave the body in the stools and enter another person through the mouth. This is not a pleasant thought but know-

ledge is better than ignorance in these matters.

Good sleuthing.—Recently some good detective work was done by a bacteriologist about the way the germs spread. It showed that when a diarrhoeal stool was flushed away the W. C. seat and floor-surrounding it became contaminated with the Sonne germs. Little children handled the seat as they climbed up and down. And little fingers, as all parents know, are quickly popped into little mouths. Potties too became contaminated by infected stools. During an outbreak in a school the Sonne germs were found on the hands of half the number of pupils. From their hands the germs passed to everyday things like toys and pencils, and everybody knows how often they get chewed while thinking. A hand-to-mouth existence truly suits these Sonne germs.

The first safeguard against spread of infection in a home is to have a firm routine of hygiene. Always? Yes, always, because then the family is always one jump ahead of the germs. Taught from an early age, children soon acquire good habits.

Take hand-washing to start with. Hands should be washed directly after using the lavatory, before preparing food, and before eating. A nice clean hand-towel for each person, with frequent changes. And then should someone someday come home with diarrhoea the drill is known already. "Shoulds" can be turned to "musts" and little lapses made to cease.

Unfortunately, Mother and Father will have extra chores if

there's diarrhoea in the home. Frequent disinfection of the water closet seat and handle also the floor are very important, and also of potties, hand-basin, and bath. The chemist will recommend a good disinfectant which is non-irritant to the skin. Remember, as usual, to keep such bottles well out of small arms' reach.

This is a good time to use up those old worn towels. Torn into little individual hand-towels they can be discarded into a bucket and be boiled or disinfected for re-use. Paper towels are hygienic and their expense offset by cutting down on the washing or laundry bills. At a time like this it is safer and simpler to help small people on and off the W. C. and wash their small hands for them at once.

Mother needs to be specially careful for herself. It will not do at all, if the mainstay of the home falls ill. She can so easily become infected from her sick children. More women than men develop Sonne dysentery and this is the likely reason why her best safeguard is washing her hands thoroughly, immediately after any contact with the sick members of the family, or with infected articles, or the W. C., or floors. She will need plenty of nice clean overalls. The nylon ones are quickly washed and dried, and need no ironing at all.

Food-poisoning is another and a different problem. Family outbreaks are not uncommon. In 1958, for instance, 360 were reported in which the germs could actually be traced. Mostly they

were of the type called *Salmonella*, often found in these epidemics.

The authorities investigate every outbreak reported to them, and track down the infected article. Once, a whole seven tons of food had to be examined before the food-poisoning germs could be located.

Meat is by far the commonest source of trouble. Not fresh meat, eaten freshly and well-cooked, but meat re-heated or processed in some way. The busy housewife finds a lot of things ready-prepared to help her cater nowadays. Meat pies, cold meats, and things like that are handy for her husband's lunch-box and for the telly snacks. And meat re-heated is quick for supper if mother goes out to work. Bacteriologists in the food industry are constantly on tiptoe to see these things come safely to her. But foods have travelled far from country fields to reach town tables. They may have passed through many hands and processes, so sometimes, almost inevitably, problems do arise. How are the risks avoided?

Wise shopping.—Take shopping first: Choose clean shops and select brands of well-known reliable makes. To ensure constant fresh food, shop often. Eat food while it is still fresh. Buy cooked meats and pies from shops that keep them in refrigerated counters.

Keep food covered against dust and flies. Make war on insect pests. In the close summer weather or the warm winter kitchen, germs can quickly

multiply in food. And if they should be food-poisoning germs, it's trouble that they're brewing. Remember that taste and smell are not safe guides to unsafe food.

So avoid storage for longer than is strictly necessary, especially of meats and imitation creams and dairy products. There's a saying "When in doubt, do nowt," but when it comes to food it should be "When in doubt, throw out." And, please, do not give dubious food to pets. They can contract food-poisoning too, suffer with it, and pass the infection on to humans.

Instructions on cooking times and maximum storage times are given with some foods. These have been worked out by scientists, so should be carefully followed. If you do have to re-heat meat left-overs, do it really thoroughly. Don't just re-warm to comfortable serving temperature. Heat, high enough and long enough, is death to germs, so don't show mercy.

A nice kitchen, nicely kept, goes a long way towards food safety. Catch Father in one of his "Do-it-yourself" moods and ask him to put smooth surfaces of modern materials on working tops and larder shelves and round the sink unit. The new small paper towels are handy in the new wall-fittings, made specially for the kitchen. You need plenty of running water, preferably hot. A refrigerator is worth saving up for.

Until some years ago infectious diarrhoea and vomiting, or in-

fantile gastro-enteritis, as it is also called, was not an uncommon illness among babies. Fortunately it is less of a problem nowadays. But as some cases do still occur it is wise for new parents to know about this illness and realize that it can be very serious.

Doctors in Great Britain did some concentrated research work on this illness after the last war. They discovered that special types of an intestinal germ, *Bacterium coli*, frequently occurred in the stools of infected babies. Viruses have been found, too.

Breast-fed babies rarely contract infectious diarrhoea and vomiting. It is, in fact, essentially an illness of bottle-fed babies under one year of age. Outbreaks in residential nurseries used to be quite frequent. It was observed that older children, and even adults, would sometimes develop diarrhoea, but in a mild form.

Prevention lies in scrupulous attention to baby's hygiene. This turns largely on thorough cleaning and sterilization of feeding-bottles and teats. Modern detergents are a great boon here. Used with really hot water, and followed by good rinses in running water, they bring the bottles up sparkling clean. This is how they should be, because any milk residue or milk film within the bottle gives germs a chance to grow.

Careful sterilizing.—Sterilization can be either by boiling or by the Milton method. Teats, of course, need the same care in

cleanliness and sterilization. And so do spoons and cups and bowls, with solid feeds being introduced so early nowadays. Neither these feeds nor milk feeds should be stored. They should be freshly made. And, naturally, always remember to wash your hands thoroughly before preparing or giving baby feeds.

Nappies require a thorough wash and boil between each use.

Disposable ones are hygienic. Though they are on the expensive side, they save a lot of time and work and all the trouble of laundering.

These healthy practices, always in operation, are valuable in protecting baby against other infections. Against, for instance, dysentery and food poisoning, and other infections, which older children may bring home.—(*Family Doctor*, June, 1960).

EXERCISE IS ESSENTIAL TO HEALTH

ANYONE who has observed or experienced the rapid wasting of body tissue that occurs as a result of enforced inactivity will readily appreciate that movement is one of the first essentials of physical fitness.

When a muscle cell is contracted, energy is expended, and some of the component parts of the cell are broken down and forced out of the cell, which then absorbs new food material, carbohydrates and oxygen from the surrounding plasma. Muscular action, then, causes constant change in some of the essential elements that keep the muscle cells in working efficiency. These cells increase or decrease in number and size, according to the amount of work they are called upon to perform.

The passage of large quantities of blood through the lungs causes all the muscles of the respiratory tract to act immediately and vigorously when there is a need for oxygen. The con-

traction of the muscle fibres squeezes the lymph vessels and the smaller veins, and drives the blood and lymph onward towards the heart; an increase in the activity in the heart-centre of the brain stimulates the action of the heart and, in turn, quickens and deepens respiration. This acceleration of blood through the system causes dilation of the arteries supplying the muscles that are being exercised, thus increasing the food supply to the muscles and eliminating waste and carbon dioxide via the lungs and urea via the kidneys. The whole digestive tract becomes more active and demands more food.

Heat generation is increased by the rapid combustion that is going on in the muscle tissue. This heat is regulated by the dilation of the superficial arteries and capillaries, causing surface radiation. At the same time, the activity of the sweat glands is stimulated through the sympathetic nervous system,

and the evaporation of the sweat cools the body. Thus, muscular exercise increases the functions of respiration, circulation, nutrition, and excretion.

Greater tension.—Nor is that the full extent of the effect of muscular exercise on the body. The tendency of every muscle is to contract, even during rest. This is due to the elasticity of muscle tissue and to the fact that stimulation is being sent continually to the muscle. There is a greater tension in a healthy muscle when its nerve centre is in a normal state than when the nerve is subjected to any kind of pressure. The strength of the contraction varies according to the potential strength of the muscle. For instance, the pectorals are fan-shaped muscles on the upper and front parts of the chest, which draw the arms forward and inward. The trapezius muscles are triangular in shape, and extend from the base of the skull down the back for about two-thirds of the length of the spine. These muscles draw the head and neck backward. The rhomboideus muscles extend from the spine to the shoulder blades, and draw the shoulder blades back. If the pectoral muscles are developed out of proportion to the trapezius and rhomboideus, the shoulder will be drawn forward.

Muscles can be divided roughly into two types—flexors and extensors. A good illustration of this is provided by the movements of the hand. When the fist is clenched, the flexor muscles are working; the extensor

muscles open the fist. When the flexors are developed more than the extensors, the fingers will remain in a semiflexed position when they are at rest.

To avoid, or remedy, such a condition of muscular imbalance, it is necessary to prescribe more work or corrective work, so as to bring into play the weaker group of muscles.

In order to derive the most benefit from physical exercise, we should develop or exercise the group of muscles that performs the greatest amount of work, e.g., the flexors and extensors of the thigh, the muscles of the back, abdomen and shoulders. These groups exert the most far-reaching effects on the vital organs.

The physiological load.—It has been estimated that a muscle will contract more thoroughly when pulling a certain load than it will when contracting freely. The load may be represented by the weight of the body, in some cases, such as when the patient is resting on the hands and toes, lowering and raising his body to and from the floor, or squatting on his heels, raising his body to the upright position, and lowering it again.

When exercise causes the diaphragm to make large movements, pushing up the lungs or pushing down the liver, stomach, spleen and intestines, it stimulates and increases the functions of all these vital organs. Deep breathing is induced, and more oxygen is brought to the lungs and all the tissues to meet the vital need for it.

Automatic movements that are constant and regular are controlled by the hind-brain or by the upper spinal cord, and they do not use up as much nervous energy as those movements which are directed by will-power through the conscious brain.

When we are born certain centres are already well developed *e.g.*, those concerned with respiration, circulation, sucking, crying, nervous and muscular co-ordination, are all in perfect working order. Varied muscular exercise is, however, necessary for the proper development of the brain so that mental activity may be promoted. Spinal adjustment and corrective muscular exercises brought about such a change in a fifteen-year-old girl's mental activities that when the spine was eventually straightened she had progressed to the top of the class, whereas before that she had been at the bottom. The strengthening of the weak

muscles resulted not only in a better supply of blood to the brain centres but also a more thorough co-ordination and control of the neuromuscular mechanism.

Control comes later.—At birth, a child has perfect grasping movements, but independent control of the fingers comes later, so that playing the piano or violin should not be taught at too early an age. The games that youngsters play provide enough muscular exercise for most of them. When corrective exercises are needed, they may be camouflaged often by being incorporated in special games.

Generally speaking, muscular exercise is good for the entire body. However, in some conditions of illness, specific exercises may be necessary, and in such cases it would be wise to obtain professional advice — (*Health for All*, July 1960).

The Value and Importance of Leisure

Leisure can be most aptly described as a period of intelligent but pleasurable relaxation after a long spell of strenuous work. The idle passes his life in idleness. The manual worker turns from toil to rest. The intellectual worker intersperses his work with leisure, with periods in which his brain is employed but not driven. To such a man leisure is not merely important but essential. During his periods of work he is storing his mind, and storing it so fast and so full that the newly acquired treasures are not properly appraised, sorted, arranged and put to use before others crowd upon them. During leisure there is a chance to catch up. The jumble becomes straight, the blocked channels start to flow again, and the owner comes back to find that, while he was away, the mess he left behind has been arranged for him into a pattern which now seems to have some meaning. Only leisure can rehabilitate the overstressed mechanism of the mind. Drugs bring cessation rather than rest; they put the neutral with the clutch out. Leisure, however, gives it a day in the workshop and allows it a period of overhaul and general turning; and the work is undertaken by a method that is infinitely expert, because it has been developed by the infallible process of research and rejection during the two billion years that have rolled by since man's first simple ancestors lived on an earth that was without form and void.—(Sir Heneage Ogilvie, K.B.E., F.R.C.S., M.D., in "*A Surgeon Looks at Life*."

BOXING FOR BOYS?

NO!

"The noble art is a strange misnomer for this brutal sport!"



J. A. WAYCOTT, M.B., M.R.C.P., D.C.H.

PEOPLE in their thousands go to boxing matches. Millions watch television whenever a fight is on. And they all think of it as a jolly good evening's entertainment.

Some of the advantages of boxing are obvious to everybody. Physical fitness, speed, skill, courage, and control in adversity, all these are admirable qualities. That is why it came as rather a shock to some people when, in June last year, there was widespread comment in the Press on a leading article in the *Lancet*. This roundly condemned boxing from the medical point of view. Practically every paper took it up. Under large headlines, such as *Doctors' fight to end killer sport*.

There was the same widespread Press-interest when *Family Doctor* first published a comment on the subject. As long ago as February of 1952 the Editor's letter began:

"There have been forty-seven professional boxers and at least twenty-two amateurs killed in the ring in the last five years."

"Many more boxers are beaten over the years into varying stages of mental incapacity. A knock-out always does some small damage to the brain. Damage done to the skin or to

the bone will heal. Damage to the brain may be permanent."

What are the rights and wrongs of all this? Are doctors really talking sense when they say that the game is too dangerous and brutal? Was the *Lancet* right in urging "The medical case against boxing is now so strong that, as doctors, we have a clear duty to fight for its total abolition."

Or are the thousands of boxers and millions of fans right when they say it is no worse than many other sports and all this fuss about it is just plain crazy and made only by cranks?

It is true that there are other sports more dangerous than boxing. More players are injured at football and rugger and lacrosse, than boxers are hurt in the ring. It is difficult to be certain about figures, but it seems reasonable to conclude that boxing is about eighth in the order of dangerous sports.

The most important difference between boxing injuries and all others is that they are deliberate. In every other game except boxing, it is a serious breach of the rules for one player intentionally to hurt another.

In boxing it is entirely different. Here it is the sole purpose of both boxers to win the contest. They both know that the best way of doing this is to knock their opponent unconscious by a blow, or a series of blows, to the head. The concussion that results however slight, is a brain injury.

This brain injury is intentionally produced by deliberate blows. As soon as a minor injury has been inflicted on an opponent

ment, say a cut above the eye, it is the boxer's deliberate purpose to play on this and exploit the situation by further blows on top of the injury so as to render his opponent incapable.

Just consider for a moment what the brain is like. In consistency it resembles porridge that has cooled and set. It lies within the bony skull and floats in a fluid bed. It is thus, to a large extent, protected from sudden stresses. It is no part of its function to be knocked about.

The brain itself is composed of millions of tiny nerve cells, each working something like a miniature radio valve. So delicate are these cells that all but the lightest touch upon the surface, even by the surgeon, produces a permanent and irreparable loss.

When a boxer gets knocked out and concussed, what happens inside the brain is not known exactly. But it is likely that the brain cells are shaken so badly that they cannot function properly for a time. In addition, there is some evidence that tiny pin-point hæmorrhages may occur in the substance of the brain. When this happens the brain cells nearby are destroyed for ever.

It happens that we are endowed with a generous reserve of these cells. We can afford to lose a good many without showing any signs of damage. But beyond a certain limit things are different. Everything we have learnt to cherish depends on brain cells.

Our intellect, our judgement, sense of justice and beauty, all depend on brain function. These are the first things to be disturbed as a result of repeated injury.

Then follows loss of steadiness and balance and all kinds of other symptoms. These gradually unfold as the condition known as 'punch-drunkenness,' supervenes. This is not an uncommon condition, though practically confined to second-rate professional boxers.

It is hardly ever seen in amateurs. This is the point. The signs may not come on for several years after a professional boxing career has ended. But once they have started, they are apt to finish up in mental disease and death.

Long before the *punch-drunken state* is recognizable, many boxers go through what is called the "*groggy state*." What happens here is that a boxer takes longer to recover after each bout. Whereas at the start of his career he was fully fit again by the next day, now he may take several days, during which he complains of dizziness and loss of balance, head-aches and moodiness.

What about the risks of head injury for amateur boxers generally? The Amateur Boxing Association figures for London in 1957 included 60 knockouts and 9 cases of loss of memory without unconsciousness. For 1958 the corresponding figures are 28 and 14!

Doctors who deal with head injuries and who have to see the

results of bruised and damaged brains are in no doubt about the folly of injuring the brain on purpose. It is significant that many of those who have been most outspoken in their condemnation of boxing are physicians with international reputations, mainly as neurologists and eye specialists, with vast experience.

We all know how a crowd at a boxing match behaves. Noise and excitement do not really begin to be continuous until one or other of the fighters is really in difficulties. Then the yelling gets going properly and the spectators' enjoyment becomes tremendous. With such cries as "Kill him," they urge the winning man to administer the final blow.

Many people think this is a brutal and beastly side of the game. We all have cruel streaks in our make-up. Boxing stimulates this impulse and in violence and bloodshed takes us back to the caveman days.

Boxing ought to be stopped. This is happening already in other countries, for example, it is illegal in Iceland. But it can't be stopped at once. Nor would this be altogether desirable.

It will take time for a suitable alternative to gain enough ground to be able to replace boxing. I would say a suitable alternative is JUDO.

Judo is a fine sport. Injuries are much less common than in the boxing ring and, unlike boxing, the rules forbid injury. It is far more useful than boxing in the event of having to defend oneself in a rough-house.

Ask any member of the Forces, trained in unarmed combat, which is based on judo, he will tell you the answer. A boxer is disabled by a judo man before he knows where he is. So much for boxing as the noble art of self-defence.

I have watched a lot of boxing. As a school doctor, in the Forces, in boys' clubs. I have seen youngsters receive blows to the head that I should be sorry indeed to see fall upon any child of mine.

That is why I hope my son will not want to take up boxing. And that is why I hope that all parents and those who are in a position to influence young people will realize just what boxing entails, morally and physically, and act as their reason dictates. The noble art is a strange misnomer for this dangerous sport.

Boxing is a dangerous and brutal sport which can cause damage to the brain and eyes. Is it right then to encourage schoolboys and young men to run these undoubted risks?—(*Family Doctor*, London, via *World Digest*).

Too Many Cooks Spoil the Broth

My observation is that whenever one person is found adequate to the discharge of a duty by close application thereto, it is worse executed by two persons, and scarcely done at all if three or more are employed therein.

—(*George Washington*).

ENZYMES:

Our Body's Amazing Chemists

J. D. RATCLIFF,
Chicago

ENZYME is the hottest word in research laboratories today. Mark it well. Enzymes are nature's chemists. All activity of living things depends on them.

From the instant of conception, enzymes play the supreme role in all life processes. But for them the fragile male sperm could never gain entrance to the enormously larger and tougher female egg to complete the act of fertilization. As it is, the sperm is equipped with a minute amount of enzyme to dissolve a tiny crevice in the egg membrane, thereby gaining admittance.

Many top researchers are today convinced that enzymes hold the key to virtually all health problems—from heart disease, to gout, to insanity. One type of dull-wittedness has been traced to lack of an enzyme—supply the deficiency, researchers think, and a cure will be at hand.

Enzymes are large protein molecules—present in all living things from bacteria to whales, to marigolds. In a twinkling they perform chemical transformations that are difficult or impossible to perform in the laboratory. They produce such hormones as insulin—which have defied all efforts at synthesis. It took some of the world's most talented chemists 20 years to

synthesize penicillin. An enzyme in a lowly mold knew-how all along. One of the towering feats of modern chemistry was the production of artificial quinine—which enzymes in the cinchona tree learned how to do, the countless millenia ago.

To digest a piece of steak in the laboratory—to break it down into its component amino-acids—it is necessary to boil the steak for nearly a day in concentrated acid. In the body, enzymes accomplish the same task in a few hours—and at a temperature no higher than 98.6° F. (i.e., body-heat).

In the body, enzymes pluck building materials from a conveyor system, the blood stream. They take amino-acids that originated from cow muscle and use them as building blocks to produce human muscle—quite a different substance. These busy, extra-ordinary, little chemists convert elements from pig fat into the padding that gives the female figure its pleasing contours; and change sugar into glycogen which the liver can store to supply energy needs as they arise.

You can demonstrate to yourself enzymes in action. Chew a piece of bread for a few minutes. You will note that it gradually becomes sweet. An enzyme in saliva has converted the starch into sugar. The body can't utilize starch, but it can absorb certain sugars.

Enzymes are prodigious workers. Pour a little hydrogen peroxide on a small wound, and the peroxide foams up. The free oxygen and an enzyme in the skin make the foam. In a

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ENZYMES—J. D. RATCLIFF

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single second, one molecule of this enzyme can split 80,000 molecules of peroxide! In the intestine, a molecule of another enzyme, *invertase*, can break down a million times its own weight of sugar with no noticeable loss of activity.

Some of the enzymes are oxidants, fuel-burners. They take a minute fragment of food and convert it into a form which then undergoes further chemical reactions to produce one of the most extraordinary substances on earth. The substance: adenosine triphosphate, or ATP for short. In effect, ATP is a minute storage battery which releases stored energy to make muscle fibres contract. Every time your heart beats, every time your eyelids blink, every time you take a breath, it is ATP that provides energy for the action.

Much the same type of thing takes place in the nerves. Enzymes produce an extraordinary stuff called acetylcholine—minute squirts of which make possible transmission of messages across nerve junctions. Once it has done its job, acetylcholine must be instantly destroyed—otherwise the heart would stop. Here again, an enzyme comes to the rescue. Once acetylcholine has done its work, it is destroyed by an enzyme in a few thousands of a second.

Thus, enzymes are destroyers as well as builders. They have the task, for example, of destroying excess hormones; otherwise we would be like cars with accelerators but no brakes. Many

of the hormones are fat-soluble and the kidneys cannot dispose of them. Magical enzymes in the liver convert excess amounts of such hormones into water-soluble substances—which the kidneys can then discard.

Already, many enzymes are being put to work by physicians. Body cells are cemented together by a substance called hyaluronic acid. But there is an enzyme which dissolves this cement—hyaluronidase. It is this same enzyme which helps the male sperm dissolve its way into the female egg. On the theory that at least some cases of sterility trace to a lack of hyaluronidase, the enzyme has been used with some success to promote wanted pregnancies. Purified enzyme derived from microbes is sweeping contaminated wounds clean of debris, permitting rapid healing.....The majority of heart deaths are caused by clots lodging in heart arteries. Preliminary work at New York University and at Washington University, St. Louis, suggests that there is enormous promise in the idea that some enzyme may destroy these lethal plugs, if given promptly.

Workers at the Ortho-Research Foundation isolated another enzyme from human blood. It is proving itself a highly effective dissolver of clots in leg blood vessels—which cause thrombophlebitis.

Today, many researchers are convinced that virtually all disease traces to missing or faulty enzymes. They theorize that there is a specific gene—an

inheritance factor in the chromosome—to govern production of each enzyme in the body. When the gene is missing or defective, so is the enzyme. The victim is then prey to inheritable disease.

With the solid accomplishments already at hand, and with

such heady goals ahead, enzymology represents research's wave of the future. It can shape the world of tomorrow in patterns that dazzle today's imagination. —(Condensed from *Today's Health* for September, 1960, by T. N. S. Raghavachari).

CAN HEART ATTACKS BE PREDICTED?

(Philip Gilbert interviewed James Watt, M.D., Director of the National Heart Institute and of the Central Committee for Medical and Community Programmes of the American Heart Association).

Q. Is any one type of individual most likely to have a heart attack?

A. There are factors which enable us to say certain groups of people are a higher risk than others. That's about as far as we can go at present. When it comes to predictability for an individual, we still don't have enough information.

We know that some types of heart disease occur primarily in the older age groups, and other types in younger age groups. We know that heart disease tends to occur in conjunction with other forms of disease. For example, any disease that damages the blood vessels can lead to an earlier breakdown of the cardiovascular (heart and blood vessels) system. There is a tendency for heart disease to concentrate, to some degree, in families.

Q. Can you identify these high-risk groups any more closely?

A. There are two kinds of factors. One is high blood-pressure, grouped with arteriosclerosis (hardening of the arteries),

People whose blood-pressure is above normal tend to have more coronary attacks.

The second is the question of blood lipids, cholesterol. People whose blood lipids are consistently higher than normal tend to have earlier—and may be more—heart attacks.

Q. What causes cholesterol?

A. It's a normal factor in all human blood, and can be produced by the body. We don't know exactly how cholesterol is involved in disease.

Q. Can certain foods increase the cholesterol level?

A. Dr. Irvine Page (Director of Research for the Cleveland Clinic) tells about an interesting personal experience with cholesterol in the diet. When he began studying cholesterol, his initial reaction was to take it out of his diet. He didn't take into account the fact that the body has the ability to make any amount of cholesterol it needs, and so after losing considerable weight and all of his friends, he

found his cholesterol level back where it was when he started. Apparently his body adjusted to the lack of it in his diet by manufacturing it.

Q. What does the Framingham study involve and what is its goal?

A. This is a planned study of that community's population to measure the extent and development of cardiovascular disease in a cross section of persons aged 30 to 59. It was planned to cover a 20-year period, and has been under way now for about nine years. Its purpose is to give a good background for measuring changes within a population brought about by different diseases of the heart and circulation. In interviewing and examining the subjects, we look for any disease and report the findings to the patient's doctor. Personnel making the study give no treatment.

Q. Has research pinpointed any basic contributing factors to heart disease?

A. Factors which should be considered in arteriosclerosis include heredity, hypertensive (high blood-pressure) diseases, exercise, and the amount of body activity in terms of using up what we eat.

The exercise factor is a complicated one. And then there's the question of stress. How important is the way we live and the stress under which we live? There's the difference between men and women in respect to their apparent susceptibility. And, finally, there is diet. All these factors play some role and I think it's quite clear that they

all have some leading values in this complex equation.

Researches have disclosed that the higher the serum cholesterol level in a person's blood, the greater the chances of heart disease. Also, the higher a person's blood-pressure, the greater the risk of heart disease.

Q. Researches have emphasized high blood-pressure as a contributing factor to heart disease. What causes high blood-pressure?

A. We don't know in general the cause of high blood pressure. In some specific cases we can pin it down, but there is no single cause. Tension is under investigation at the moment, as is the whole question of stress.

Q. Does energy expenditure have anything to do with heart disease?

A. This is an area where research is needed. Incidents often are reported of a person shovelling snow and shortly afterward dying of a heart attack.

The coronary disease was present, I'm sure, before the snow was shovelled. You don't develop coronary disease by shovelling snow. The underlying disease process is present for a long time. Whether the exertion aggravated the disease process, we don't know. Many authorities feel that consistent, regular exercise is one of the best ways to insure *against* a heart attack simply because such exercise will keep the heart—blood vessels and all in better muscular tone.

Epidemiological studies eventually can be fitted together and will give a better over-all picture

examination should immediately be made, because cancer can often be cured when treated early enough. Unfortunately the average person waits too long.

Organic causes of indigestion often lie outside the digestive tract. Here, for instance, is a man in his 50's who, after a large meal, cannot walk 50 yards without getting a cramping pain under the left breast. Sure that it is due to indigestion, he goes to his doctor, who may find that the pain is not due to stomach trouble at all, but to a narrowing of the coronary arteries which supply the heart muscle with blood.

In 50 per cent of indigestion cases, the specialist can discover nothing wrong with the digestive tract. What is wrong is a functional type of indigestion, in which a seriously upset nervous system causes untold misery.

The commonest causes of nervous indigestion are fatigue, worry, hypersensitiveness and insomnia. Functional indigestion is common; nothing can be found to explain the symptoms, and the patient never comes to a bad end.

When nervous invalids learn these important facts they will save themselves an untold amount of suffering and expense. They must learn to believe a good doctor when, after a careful examination, he assures them that there is nothing seriously wrong.

When a worried woman is told that she hasn't a gall-stone, she commonly refuses to believe that her suffering could be without

organic cause. Usually she cannot bear to think of the months of self-discipline against worry that are necessary to achieve peace and health.

I do not wish to imply that the nervous patient is imagining distress. No, it is very real, and probably more trying than the pain of an ulcer. I often think of two persons who came to see me together. The mother, a gentle old lady with a cancer of the stomach, maintained that she was not suffering and that she needed no treatment. But she was concerned about her daughter who for three weeks had been vomiting everything she had eaten. What was the matter? Nothing but fear. She became ill the minute she heard of her mother's trouble. Here, then, was one woman with the worst form of organic disease and no complaint to make, and another with no organic disease, but a painful illness requiring a stay in hospital.

Many people who can understand how acute fear may upset the digestive function fail to understand how chronic anxiety often explains their ill health. Fretting over a sickly child, grieving for a wayward husband or constant worrying about an insolvent business—all may seriously affect digestion.

Financial worry ranks as a chief cause of nervous indigestion. Every day I see patients who need no other medicine than a little more money to free them from miserable situations. How fruitless to prescribe diet or sedatives for them! Unless

they can solve their financial problems, they are often doomed to a life of racking headaches and other violent forms of nervous indigestion.

The weak nerves that cause stomach upsets may be inherited as well as acquired. Often mentally unbalanced, alcoholic or misfit ancestors hand down an instability of the nervous system sufficient to cause most of the handicaps which hound millions of nervous, sickly and unemployable people today.

This miserable inheritance accounts for much of what we doctors call "constitution inadequacy" or an inability to stand up to the strains of life. Such inadequacy is doubly tragic in the shop girl, the school-teacher or the typist who has to keep on working. These patients, facing a lifetime of discomfort and frustration, often desperately beg surgeons to "operate for something." Unfortunately, what they want is impossible—an operation that would make a new personality.

But the situation of these inadequate people is not hopeless. Charles Darwin, for example, was so frail that he could never work more than three hours a day. Any small excitement, such as a visit to friends, sent him to bed with a shivering fit and nervous vomiting. His life demonstrates that by accepting one's handicap, and by working within one's limit of strength, the constitutionally inadequate person can pursue a happy and useful life.

Many sufferers from functional

indigestion can get well if they will bravely face the fact that they cannot do all the things their stronger fellows do. First they must stop looking for a quick way out *via* surgery. Many must settle down to a long course of self-discipline. If for years they have overdrawn on the bank of strength, staying up late and frittering away energies, they must begin to live so quietly that each day they can put back something of what they have borrowed and spent.

Men who have become jittery from overwork can "come back" if they will only get away for a month of complete rest, and then return to work for half days until their old energies return.

Women would often cure themselves of functional indigestion if they could only spend mornings quietly in bed for a few weeks. With rest and relaxation would come lowered irritability and less trouble from jangling nerves.

Often when I tell a patient this, she replies, "Rest! I've done nothing else for months and I'm no better!" Usually she is wrong: she may not have been working *but she wasn't resting*. All day and part of the night her mind was racing painfully from one fear to another: fear that the real disease hasn't yet been found, fear of cancer, or that her husband—a few minutes late for dinner, has had an accident.

Most of the fears that bring on nervous indigestion are silly, and the good patient knows it. At first it is hard to fight them,

but gradually they can be conquered, and health regained. During this period of re-education, patients can profit much from the help of a kindly, sensi-

ble family doctor, but ultimate success depends on the determination with which the individual sets out to remake himself.—(*Reader's Digest*, December 1960).

HONEY—FOOD OF THE GODS

W. A. SHILLIBEER

THE most ardent publicist for sensible Diet Reform that I ever knew always rated honey very high in his list of the good things of life. How right he was!

Honey is Nature's sweetmeat, with a vast variety of natural flavours according to type. It is a wonderful energizer, and a food which even cardiac sufferers can take in place of white sugar (which whips up the heart's action).

To my mind, the fascinating part of this subject is the diversity of countries of origin, and the many different tastes: Greek Hymettus, with its crystal-clear flavour; wild rose; our own famed English heather and clover honey; Jamaican—eloquent of tropical flowers; the unique taste of Australian and the softer bouquet of New Zealand and Tasmanian types. Hungary sends us honey that savours of acacia blossom. Mexico, Guatemala and Ireland all contribute their quota; white clover, from Canada and California, is excellent, while the very distinctive orange blossom honey, from Spain and the U.S.A., makes a pleasant change. Thus, the whole world brings you the fruit of the bee's labour.

Most of these honeys can be had in set or clear variety; comb honey comes chiefly from England, Ireland, New Zealand and Oregon, according to your preference.

I think that it is "good shopping" to purchase different types of honey, and to give them a trial until you hit on the one for which you have a marked liking. There is wisdom in the old saying, "A change is as good as a rest."

I find that honey is a fine, natural energizer. If you have a hard morning's work ahead of you, or need to be very much on the alert, then try a heaped teaspoon of clear honey, either in a drink or "neat": you will soon find yourself "going like a steam-engine."

Many are the uses of honey: well known as an aid in chest and throat troubles is clear honey mixed with pure lemon juice. For the relief of obstinate coughs or bronchitis small cloves of garlic should be peeled and then soaked in honey for at least 24 hours. The resultant highly flavoured syrup is taken on retiring, a teaspoonful being the dose.

An omelette with honey filling makes a very satisfying meal,

and the "bee-food" may be used safely whenever a sweetener is necessary.

A wise procedure would be to cut down on other "fuel foods" such as sugar, jam and treacle when using plenty of honey in the dietary. Here, housewives will probably object on the score of expense, but they will find that Australian or blended types are most reasonable in price, and more than worth while from the health-betterment point of view.

A surprising fact that emerges

from an analysis of honey is the low mineral salts content (chiefly calcium and iron) and small vitamin value ("B" and a trace of "C"); it is truly a carbohydrate and caloric food—a prime energizer.

Nowhere will you find a finer range of this exotic and pleasing product than at your local Food Store; aid will be gladly given in your quest for unusual or piquant-tasting types of honey. Seek them out!—(*Health for All*, June, 1960).

Some Facts About Food and People

AUTHORITATIVE pronouncements on the subject of food and population have recently been made. Preaching in Llandaff Cathedral on September 4th to a congregation which included members of the British Association meeting in Cardiff, the Bishop of Llandaff, Dr. Glyn Simon, after expressing qualified approval of birth control, said that there was no moral justification for western standards of living while two thirds of the world were below subsistence level.—(*The Times*, London, September 5th 1960).

Economic requirements:—Speaking at the Cardiff meeting of the British Association on September 5th on the economic requirements for a greater output of food, Professor W. A. Lewis argued that "the poorer countries of the world can and should produce much more food, but progress at the desirable rate calls for a massive effort in

research, in education and in capital investment, as well as for some changes in landlord-tenant relationships. Governments are coming to realize that massive effort is necessary, but as yet they are not devoting anything like adequate resources to agricultural development."

In *The New Scientist*, London, July 28th, Professor Sir Macfarlane Burnet, OM, FRS, of the Walter and Eliza Hall Institute of Medical Research, Melbourne, refers to "the undoubted dysgenic effect of maintaining a population at a given level by a combination of contraception and advanced medical care." We are confronted with the inescapable prospect of a doubling of the world's population by the end of the century. "To believe that family planning will have gained enough impetus to falsify this expectation is unrealistic."

these therapeutic tools is far too great to restrict their indicated use, although their potential to cause pain and bleeding should always be kept in mind, especially in dealing with peptic ulcer and gastrointestinal bleeding or iron deficiency anaemia of unknown origin — (*Univ. Mich. Med. Bull.*, 26: 66, June 1960).

FACTS AND FICTION

SIR ARTHUR PORRITT, in his Presidential address to the British Medical Association, made a significant statement: "Every discovery of major importance has brought in its train difficulties, dangers, and even disasters of its own. The antibiotics provide a classical example. That they had reduced the mortality in certain diseases a hundredfold is a fact of world-wide significance and importance—but they have increased morbidity through the production of resistant bacterial strains and that they have been responsible for allergic deaths equally cannot be denied."

But when Sir Arthur went on to claim success for other medical discoveries he was, we think inclined to leave out of consideration other factors which are often overlooked. For instance, he said: "And how far-reaching are the effects of modern discoveries is well exemplified by figures recently quoted. In this country, in 1800, one child in every three lived less than a year—a fact that can be corroborated by visiting any ancient church or churchyard." Our own interpretation of this fact would be corroborated by the reading of history and of the literature covering this period, which would show that the social and hygienic conditions under which people lived at that time contributed to the mortality. The change which has taken place has been due, not to medical discoveries but to the removal of the environmental influences which brought about the disastrous effects. This assertion is proved by the fact that even in the world today, wherever social and sanitary conditions are below normal standards, infant mortality rates resemble those applicable to this country in times gone by. While no one wishes to take away from medicine credit which it may legitimately claim, it should not be permitted to bolster up such claims by embracing the results which rightly belong to those who have built up the social and economic standards of living and thus made possible true health and happiness.— (*Health for All*, London, Sep. '60).

Hospital Visitors

Contrary to the view expressed by a reader, cheerful hospital visitors do patients more good than drugs, glum medicos and sour-faced ward sisters. That is why most hospitals have relaxed former prison-like visiting restrictions.

When a patient is really too ill to see anyone, visits are curtailed or barred altogether.—(*Tit-Bits*, 10-12-1960).

In the same paper of August 4th, Professor R. A. McCance, FRS and Dr. E. M. Widdowson of the Department of Experimental Medicine, Cambridge University, write of "the food man *needs*," in contrast to "the food man *thinks* he needs." To feed several thousand millions by western standards would require a revolution in agriculture, but simpler diets can be nutritionally perfect and better communications between producing and consuming areas "would help many to achieve greater dietary satisfaction."

An optimistic note:—In an article in the same paper of August 11th Mr. Colin Clark, Director of Oxford University

Agricultural Economics Research Institute, strikes a note of optimism. He refuses to accept the widely held opinion that two thirds of mankind are undernourished. Writing of the earth's capacity to provide food he expresses the opinion (with which we entirely agree—Ed.: HEALTH) that, however rapidly human numbers increase, "the resources of this planet will give our descendants some centuries' interval before they have to begin to construct for themselves small artificial planets, on or in which they could dwell in space, a task for which their skill and economic resources should by then be fully adequate."—(*I.P.P.F. News*, Nov. 1960).

The Stresses and Strains of Life

Prevention is better than cure, and the best way to prevent stress is not to suffer it. The surest preventive of stress is leisure. Leisure is holiday time, a time that we can spend in any way we like, even in idleness, but the term usually implies a change to more pleasing occupation rather than absence of occupation. Leisure implies life. We talk of a machine being idle, but not a machine at leisure, and therein perhaps lies the key to the meaning and importance of leisure. I have a body and a brain, and they are still in reasonable working order, whilst the motor-cars that started at the same time are on the scrap heap, or at best compete once a year in the Old Crocks' Race to Brighton. I cannot run either the body or the brain to a standstill as I can run my car, and then replace the wrecked parts with new ones. On the other hand, if I use them within the limits of toleration and then allow them to rest and repair themselves, they will last longer, work economically and do any infinitely more complex series of tasks than the most wonderful machine. The essential property of living things is that they find their own fuel and do their own repairs; but as every part is in use and in need of periodic rest and overhaul, every part must be given time off from activity.—(*No Miracle among Friends*, Sir Heneage Ogilvie, F.R.C.S.).

Left Handed

Q. Should efforts be made to stop a child from being left-handed?

A. Children who are left-handed should be permitted to remain left-handed to write, eat, and do as they see fit. No attempt should be made to alter them. Efforts in this direction may result in rather disastrous disturbances in speech, reading habits, visual, motor, and other integrated patterns of the brain. Every child should be permitted to follow his own internal cerebral circuitry, and no attempt should be made to alter what is "natural."

ASPIRIN AND GASTROENTERITIS

ASPIRIN not only is our most widely used pharmacologic agent, but also is a major constituent of diverse compounds sold as a panacea for a multitude of complaints. Besides its specific uses, aspirin is taken for a myriad reasons, the most common of which are generalized aches and pains, headache, the common cold, and the "flu." Emotion, fatigue, and upper respiratory infections are the most prevalent causes of ulcer reactivation, therefore, it is possible that the ubiquitous salicylate is ingested and incriminated after the fact or used for relief of symptoms secondary to bleeding already in progress. The greater incidence of ulcers in arthritics poses the question whether this is a reflection of the primary disease or its therapy.

The historical and statistical evidence correlating aspirin ingestion and overt gastrointestinal bleeding cannot be ignored; however, since this evidence conflicts experimentally and clinically as to its actual occurrence and mechanism, doubt is cast on any conclusion regarding definite cause and effect. The association of such a common pathologic entity and universally used drug could create such an unfortunate consequence due to chance despite the accumulated statistics. Schinder and Baxmeier found noninflammatory hæmorrhage, pigment spots, and hæmorrhagic erosions in 44% of

all ulcer patients. The measurement of fæcal occult bleeding, qualitatively and quantitatively, revealed salicylates as evoking gastrointestinal bleeding, but all agreed that this was not of clinical import in the great majority. Allergy to aspirin is well recognized in its relationship to asthma and respiratory death, but allergy has not yet been documented as a cause of alimentary tract hæmorrhage. However, it is possible that specific individuals may show their own particular idiosyncrasies to aspirin resulting in hæmorrhagic manifestations, some of which may not be clinically apparent. It may be that the salicyl molecule exerts a specific local irritant effect which is capable of causing a small erosion, and this erosion is responsible for occult bleeding; whereas in order for bleeding to occur clinically, decreased mucosal resistance, increased acid pepsin secretion, a coagulation defect, or a capillary defect must be present, singly or in combination.

Subjective and objective reactions to large doses of salicylates are due to the central nervous system effect of the drug; whereas, those reactions seen after small amounts, though in some cases attributable to individual intolerance, are most likely psychologic in origin and not due to local irritation.

Therefore, we can conclude that although aspirin and associated salicylate compounds are incriminated in bleeding with or without peptic ulcer, no definite causal effect has yet been demonstrated. The value of

Tonics and Appetisers

Fiery General: "Allow me to tell you that you're a puppy, sir."

Another General: "How do you dare to say that? Are you aware that I come from a long line of..."

"Silence! When I want your pedigree I'll drop in at the Kennel Club and get it!"—*(Dublin Opinion)*.

The accused had been acquitted.

Accused: "You defended me wonderfully."

Counsel: "Well, come out of the dock."

Accused: "I can't until the plaintiff has gone. I am wearing the stolen trousers."—*(Twentyn, Norway)*.

A secretary's job isn't complicated if she looks like a woman, thinks like a man, and works like a horse.—*(El Mustang, U.S.A.)*.

A Rabbi received this letter of thanks from a bridegroom he married: "Dear Rabbi, I want to thank you for the beautiful way you brought my happiness to a conclusion."—*(Jewish Chronicle, London)*.

A Londoner recently saw his wife off safely in a jet liner at London Airport on a trip to New York.

When he had at last fought his way back home through the traffic, he found a cable reading: "Arrived safely. Love, Mary."—*(Motor Notes, London)*.

The doctor put down his stethoscope and looked at his patient.

"You say you're ill-tempered", he said. "I believe you have read where science discovered that bad temper is caused by a microbe?"

"Not so loud, Doc", returned the patient, "she's sitting in the next room."—*(Capers, Canada)*.

A woman 'phoned the electrician: "My doorbell is out of order", she said. "Will you please send a man to fix it as soon as possible."

The electrician promptly sent his apprentice.

Shortly the young man returned. "The lady is not at home," he reported.

"But she said she would wait in for you," replied the electrician.

"Well, there's no one there—I rang the bell about twenty times."—*(Quick, Munich)*.

"Mother," said Tommy, "is it correct to say 'water the horse' when he is thirsty?"

"Why, certainly, dear."

"Well, then," said Tommy, picking up a saucer, "I'm going to milk the cat."

Two boys were so disorderly in school that their teacher ordered them to remain after hours and write their names 500 times. Some fifteen minutes later one of them burst out in anger and sorrow and between sobs said: "Tain't fair! His name's Nye and mine's Featherstone!"

The teacher, having spent some time telling a new geography class the rudimentary facts about food, natural resources and so forth, said:

"Now, Johnny, can you tell me what sugar is?"

Johnny thought it over, and reported:

"Sugar is the stuff that makes the oatmeal taste bad when you don't put any on."

"Now, class," said the teacher, "can you tell me one of the uses for cowhide?"

"Sure," piped up the customary voice from the back of the room. "It keeps the cow together."

Grandpa—"Who's the most popular boy in your school?"

Jack—"Last term young Jones was. He gave us all the measles."

Mother—"Patrick, you behave yourself now."

Patrick (coaxing)—"I'll be good for a nickel, Ma."

Mother—"Why don't you model yourself after your father? I don't have to give him a nickel to be good."

Patrick—"Aw, he's good for nothing."

Teacher—"Please define the word 'spine.'"

Schoolboy—"Spine is a long limber bone. Your head sets on one end and you sit on the other."

"I hear your sister is sick in bed, Bobby," remarked a neighbour. "Nothing serious, I hope?"

"Not 'specially," answered Bobby. "We were just playin' a game seein' who could lean the furthest out the window, and she won!"

When a patient is really too ill to see anyone, visits are curtailed or barred altogether.—*(Tit-Bits, 10-12-1960)*.

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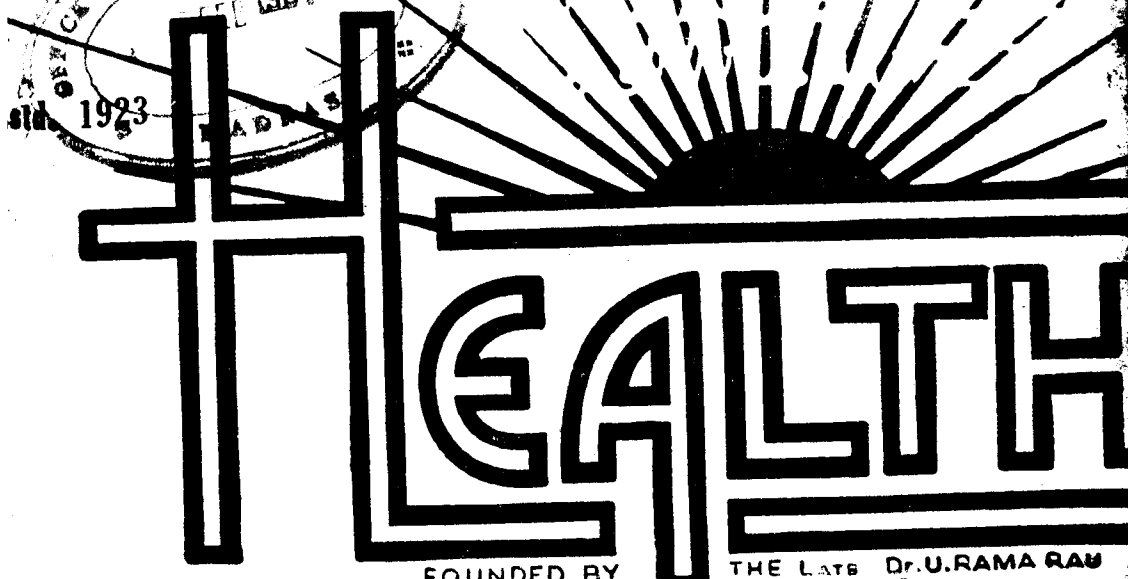
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Printed by U. VASUDEVA RAU at the Antiseptic Press, 10, Thambu Chetty Street,
for the Proprietor & Publisher at 323-24, Thambu Chetty Street, Madras-1.

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FOUNDED BY THE LATE Dr. U. RAMA RAU

A JOURNAL DEVOTED TO HEALTHFUL LIVING

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Editorial & Publishing Office: 323-24, Thambu Chetty St., Madras-1

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conditions of rural populations throughout the world is being studied by the International Labour Organization (I.L.O.).

The programme, expected to be spread over a period of years, was proposed by the International Labour Conference in June 1960 and was the subject of a special meeting of the organization's permanent Agricultural Committee in October 1960. In its final shape, it is expected to provide for an increase in the organization's activities in the fields of study and research, the establishment of international standards and the provision of technical assistance in rural areas wherever wanted.

A recent report drawn up by the organization notes "that the application of social welfare legislation for agricultural workers leaves much to be desired owing to the inadequacy of the enforcement machinery. The difficulties inherent in the practical application of laws and regulations dealing with working conditions and social security are possibly greater in agriculture than in any other branch of activity.

"The poverty and illiteracy which still exist in rural areas, the gulfs which separate the different classes, the frequent absence of any organizations of employers or workers and the innate distrust of peasants for anything that is new, are additional problems which must be overcome before protective legislation can prove of real benefit to workers. It also deals with welfare facilities for workers and urges that an attempt be made to remedy existing deficiencies in the fields of nutrition, housing, health, education, leisure and recreation. A final solution will depend on large-scale action on the most comprehensive basis with the particular aims of developing social security systems, compulsory education and vocational training and of improving conditions of work."

Considerable progress can be made in improving the lot of India's rural population, if only the Centre and State Governments and the public welfare organizations avail themselves in time of the proffered technical and other assistance from the I.L.O.

[WE HAVE GREAT PLEASURE IN THANKING OUR NUMEROUS READERS FOR THEIR HEARTY CO-OPERATION AND WE WISH THEM ALL A VERY VERY HAPPY AND PROSPEROUS NEW YEAR.]

Concentration

"Realize that you have sixteen waking hours, three or four of which at least should be devoted to making a silent conquest of your mental machinery. Concentration, by which is grown gradually the power to wrestle successfully with any subject, is the secret of successful study. No mind however dull can escape the brightness that comes from steady application. There is an old saying, 'Youth enjoyeth not, for haste'; but worse than this, the failure to cultivate the power of peaceful concentration is the greatest single cause of mental breakdown.—(Sir. Wm. Osler)

THE STEROIDS AND THEIR USES

DONALD G. COOLEY,
Chicago

[Steroids, life-saving drugs have been with us for a long time. In the last few years important discoveries have helped doctors to bring new hope to arthritics and those suffering from serious burns, allergies, eye-infections, asthma, and other ills].

PEOPLE who believe that cortisone-like drugs are only good for arthritis may be surprised to know that dexamethasone is a new and potent member of the cortisone family. Doctors have a large number of these potent drugs to choose from. Collectively, they are known as corticoids, since they act like natural hormones secreted by the cortex, or the rind of our adrenal glands.

Wisely administered, corticoids have great and some times life-saving effect in variety of diseases other than arthritis, like severe asthma and other allergies, serious burns, eye-infections, ulcerative colitis, stubborn skin ailments, and a variety of other conditions quite unrelated to each other. The drugs are not only useful to rheumatic and elderly patients, but the benefits extend to the very, very young.

For instance, there's nephrosis, a cruel kidney disease which typically strikes at youngsters between 18 months and four and a half years of age. The pathetic

little victim swells with fluids—puffy eyes, enlarged ankles and distended abdomen. The distorted little body may return to normal in a few weeks or in a couple of years, if death doesn't overtake him in the meantime.

Antibiotics will combat infections to which nephrotic children are very susceptible. And, most importantly, cortisone-like drugs are very effective in controlling nephrosis.

Natural cortisones are as old as the human race. But as drugs they are only a dozen years old, and some of the most potent forms, such as dexamethasone, have been in use for only a year or so. A chemical compound is not a drug until it has been isolated, identified, purified; until its actions in animals and human beings have been exactly determined; until the medical profession is informed of its uses, limitations and dangers—and until the pharmaceutical industry finds ways of making the drug in quantity in forms that can be delivered within minutes to the patient's bedside.

Sometimes, a new drug appears to explode into the medical firmament as suddenly as a shooting star. The first therapeutic dose of cortisone was given by Dr. Philip Hench, on September 21, 1948, to a woman crippled with arthritis who was a patient at the Mayo Clinic. In April 1949, Hench reported the incredible actions of the new drug to a startled medical world—swollen, inflamed, pain-wracked arthritic joints subsided into comfort and crippled patients were able to move their limbs again. This opened new fields

of investigation which led to better medical knowledge of inflammatory diseases.

Our sex and adrenal glands produce powerful hormones which have what chemists call a *steroid nucleus*—a complex “framework” of four rings of carbon atoms with hydrogen and oxygen atoms. Atoms or groups of atoms, attached, added to, or removed from this intricate molecular lattice-work at various points create a bewildering variety of steroid compounds:—*e.g.*, male and female hormones, vitamin D, cortisones, digitalis, cholesterol, and others.

Many steroids are not hormones, but some of the most important ones are. The wrinkled covering or cortex of the human adrenal gland weighs about a quarter of an ounce. We have two adrenal glands one on each kidney. These astounding midget factories make steroids which have long been known to be absolutely essential to life. Somehow, our adrenal glands mobilize our bodies against all sorts of stresses, and in the 1930's a number of investigators turned to the cortex as a likely source of a hypothetical “stress hormone.”

In 1935, Edward Kendall and Tadeus Reichstein isolated tiny amounts of a compound from adrenal glands. Kendall called it Compound E. It was a chemical compound waiting to become a wonder-drug. It had however, a long wait.

In the spring of 1948, improved methods produced a trickle of a few grams of Compound E. A

supply was sent to Doctor Hench of the Mayo Clinic who tried it on arthritic patients. Those first doses were probably the most expensive medicines in history. Through the years, Merck had poured some \$21 million into corticoid research, not to mention the millions spent by other researchers and companies. But it was worth every cent of it to suffering patients. Almost overnight, Compound E became world-famous under its new name ‘*Cortisone*.’ Cortisone, invented eons before by nature, had at long last become a drug.

Once the drug-makers made cortisone available, physicians could try it cautiously in many diseases other than arthritis. The major virtues of cortisone and its descendants became clarified—remarkable anti-inflammatory and anti-allergic activity.

Serious skin conditions such as pemphigus, and milder ones such as “infantile eczema” proved wonderfully responsive to corticoid drugs. Treatment has been “practically revolutionized” by local applications of drugs of the cortisone family which “have been so eminently successful that no other older ‘standby’ medicaments can approach their over-all effectiveness.”

Inflammatory eye diseases, many of which formerly led to blindness, yielded to the remarkable healing powers of the new steroids. Intractable asthma and other serious allergic emergencies responded to the powerful new agents. In serious

burns and other stresses, corticoids offered a life-saving way of finding precious time for a wrecked body to mobilize its forces of recovery. These and other vital uses were unknown when cortisone was newly born. There was much to learn, and knowledge came from the nation's doctors who tested cortisone in the crucible of human illness.

Researchers in pharmaceutical laboratories plunged into a hotly competitive race with a two-fold objective:—(1) to find better cortisones and (2) to find cheaper ways of making them.

Chemists of the Upjohn Company, a large pharmaceutical firm, perfected a microbiological method that gave a new start to cortisone-making. Upjohn's manufacturing and distributing techniques were so efficient that the price of cortisone dropped precipitately. This was fine for patients who needed cortisone, but rough on competitors!

Hydrocortisone, a slight modification of the cortisone molecule, was synthesized by Merck, in 1951. In some respects it was a better and more potent steroid than cortisone and, like cortisone, was a natural hormone produced by the adrenal cortex. Eternally dissatisfied chemists in pharmaceutical laboratories kept breaking down steroid molecules, playing put-and-take with invisible atoms, and created scores of most “unnatural” man-made compounds. They were however, dismally inferior to nature's own, until Squibbs succeeded in inserting a fluorine atom into the steroid nucleus.

The resulting compound was much more potent than cortisone, but some of the side-effects were proportionately intensified.

Many authorities, including Kendall, were reluctantly convinced that nothing tremendously better than nature's own adrenal steroids would ever be discovered.

New compounds, introduced by Schering as prednisone and prednisolone, quickly gained wide medical use—and, by showing that “unnatural,” man-made steroids can be vastly superior to some of nature's own, stimulated competitive research to new intensities. Merck's original “monopoly” of cortisone lasted only a few weeks; ever since, one “better cortisone” after another has continued to make sales leadership for individual products a temporary phenomenon. Upjohn introduced methyl-prednisolone; Lederle and Squibb, triamcinolone; last year, dexamethasone—more potent than prednisone, as the latter is more potent than cortisone—was introduced by Merck and Schering. Today, at least 29 companies furnish various steroid products to the physician.

But what is this costly research? It's something utterly new in man's long history—a wedding of technology and professional scientific, medical, and educational skills that is industrially unique. The industry's new beginnings date from World War II when several American firms played major parts in transforming Sir Alexander Fleming's 12-year-old discovery

of a chemical curiosity, called penicillin, into millions of doses of a life-saving drug.

Cortisone, at first was only good for rheumatoid arthritis. The fact that corticoids are of striking value in a wider variety of diseases than any other single class of drugs was a later discovery, contributed by the careful observations of physicians the world over. The drugs are as important in the control of rheumatoid arthritis as they were from the beginning. For many sufferers, corticoids mean the difference between disability and the ability to lead a reasonably active life and do useful work.

The Arthritis and Rheumatism Foundation however, after a lengthy and controlled study, concluded that misrepresentation of arthritis-products and treatments is "*a booming racket*" which "annually takes a toll of over 30 million dollars from six million sufferers from arthritis!

Simple aspirin is a respected and inexpensive pain reliever. But "glorified aspirins"—products in which the only active ingredient is aspirin, but which are misrepresented as containing something remarkable—are foisted

off on credulous arthritics at several dollars a bottle.

After 30 years' study of adrenal hormones, nobody yet knows how the corticoids work! If precise mechanisms can be learned, as researchers hope, tremendously valuable new drugs may come out of the present general steroid research which was enormously stimulated by the corticoid break-through.

Some steroids are known to have tissue-building action, and might delay breakdowns of ageing. Some appear to protect against atherosclerosis and coronary disease. Many have direct effects on certain aspects of fertility. Some are obscurely related to mental functions. Some are antagonistic to breast or prostate cancer. Collectively, few classes of biological compounds are more vital for good health, or presently more mysterious, than the versatile steroids.

Today there is no cure for rheumatoid arthritis. Tomorrow we may have one—and for other baffling ailments—if competitive self-financed pharmaceutical research continues to go the way it is going.—(*Today's Health*, June 1960).

Don't get Struck by Lightning

Many people believe that a person who is dry and well insulated from the ground will survive a lightning flash better than one who is wet.

False, says Noel Wilkinson in *Better Health*. The man who is soaked through with rain will allow the flash to make instant contact with the earth via his body. He will certainly be burnt as lightning passes through him, but that is better than the usually fatal damage to the brain and other organs caused when the charge accumulates on the dry surface of the body.

Two simple precautions when caught out of doors in a storm:—(1) avoid sheltering under isolated trees, which are often struck, and (2) use metal objects such as cigarette lighters and cases as little as possible.

SCIENCE IS ALL OF A PIECE

CONDENSED BY
T. N. S. RAGHAVACHARI
Madras-14.

IN the thousands of years that medicine has existed, its accumulation of knowledge and skills has been augmented through the ingenuity not just of its practitioners but of men and women from many other walks of life.

Of course it would be silly to assert that doctors of medicine—every one of them and all the time—have maintained open minds and have been willing to suppose that "laymen," as they call all of the people who lack their particular type of training, are capable of worthwhile contributions to the art of preventing or treating disease. On the contrary, a new medical idea from whatever source has always encountered resistance, sometimes bordering upon hostility, for physicians are proud of their accomplishments, and they prefer to utilize techniques and remedies that have long proved their worth. Patients, incidentally, have reason to be thankful that doctors take that attitude.

Inadvertent suggestions have come from non-medical people:— It is nonetheless true that medical men, time after time, have accepted and used devices and suggestions that originated with individuals outside their own group. Sometimes laymen's ways of doing things merely

suggested a technique to doctors who were hunting for answers to seemingly unsolvable problems. In about 1800, Dr. Leopold Auenbrugger, a young Austrian physician, chanced to notice an innkeeper rapping on a beer keg to discover how nearly full it was, and thus was led to originate the "tapping system" for detecting lung congestion.

Similarly, Dr. Theophile Lænnec, in 1816, was inspired to invent a basic diagnostic instrument as he watched two Parsian children at play. He had been at a loss for a means of listening to the chest sounds of an especially well-upholstered young woman, one of his heart patients, without her misinterpreting his motives, but as he watched the youngsters tapping coded messages to each other as they knelt at either end of a long wooden beam, he suddenly realized that a sound-conductor superior to air would enable him to listen to the human heart at a convenient and, in this instance, safe distance. In consequence he fashioned a stethoscope, a device which many authorities have ranked as the single most important medical invention.

As everyone knows, country people from time to time have discovered what seemed to be medicinal qualities in the plants that grew wild in their fields. In many cases their reliance on such remedies was mere superstition, but in others they had found something really worthwhile, and doctors of medicine proceeded to make use of their materials. Dr. William Withering had learned to use foxglove

in the treatment of dropsy from the farm families of his native Shropshire, and he treated heart disease patients with it during and after the Revolutionary War, in America. All of us now know the active ingredient in the flower of the foxglove plant by the name digitalis.

Smallpox was one of the plagues that swept Europe again and again during the Middle Ages and the Renaissance. At the very end of the latter period, in 1660, if fire hadn't destroyed most of the City of London, and the smallpox germs along with it, most of the population would have died of the disease. Almost a century later, in 1768, Dr. Edward Jenner was told by a milkmaid that she couldn't catch smallpox because she had already had cowpox a very minor affliction that was common among cows and the people who tended them. Jenner reasoned that if she were right, the thing to do was to see to it that everyone in Europe caught cowpox, and thus vaccination began. Subsequent research has revealed that his idea wasn't original—that vaccination had been performed previously on a small scale in India and China—but for his rediscovery, medicine is indebted to a milkmaid who knew precisely what she was talking about.

As is no more than reasonable, scientists in parallel lines of endeavour have been responsible for numerous and fully developed advances in medicine. Foremost in this regard have been the physiologists, the

chemists, the biochemists and the physicists.

Science, is all of a piece, and the originator of each bit of basic scientific knowledge must be ranked as a contributor to the science of medicine. Thus, the role must include Black, who discovered carbon dioxide in 1757; Cavendish, hydrogen, 1766; Rutherford, nitrogen, 1772; and Priestley and Scheele, oxygen, 1771. Other chemists were responsible for developments out of which medicines were later made. For example, an English chemist named Perkin conducted experiments the immediate product of which was a wash-proof and fade-resistant purple dye, but from his work the entire spectrum of coal tar chemistry grew, and not the least of the end products was aspirin.

Louis Pasteur (1822-1895) is the chemist to whom medicine is most deeply indebted.

Biochemistry is a relatively new profession very closely linked to medicine, and its members in the employ of pharmaceutical manufacturers, universities, hospitals and research foundations have been responsible, either by themselves or in collaboration with doctors of medicine, for the introduction of the antibiotics that our generation calls "the wonder-drugs." Of these men and women, probably the most famous is Sir Alexander Fleming, the discoverer of penicillin.

Physicists have been almost as helpful to medicine as have the chemists and biochemists.

Konrad Roentgen obviously was indebted to a host of fore-runners in the development of electricity, but his discovery of X-ray photography was nevertheless an accomplishment for which doctors and patients everywhere will be eternally grateful.

Besides these, there are of course the cultists and "healers" whose techniques the public has been urged to think as efficacious as those of doctors medicine. Physicians, though not over-

anxious to employ radical innovations in the treatment of patients, stand ready to examine and test suggestions from any source. But, as Sections 2 and 3 of their principles of medical ethics require, they insist (1) that such ideas must be susceptible of scientific proof, and (2) that their proponents expound them fully and agree to have them explored so that, if they prove valuable, they can be used for the benefit of patients everywhere.—(*J. St. Med. Assoc.*).

Royal Jelly is Mere Glamour

Why does the queen bee live to the ripe and plump old age of five while her poor nectar winners must content themselves with, at most, a short and, one supposes, sweet life span of six months?

According to some, it is because of all the Royal Jelly the queen eats throughout her larvæhood. Result: the jelly is hailed as the "elixir of life," a rejuvenator and fertility improver. Unfortunately there is no evidence in support of this!

Royal Jelly—a white and sticky substance secreted by the worker honey bee from his salivary glands—contains about 70 per cent water plus protein and carbohydrate, certain mineral elements, and about 3 per cent of "unknowns." This undetermined fraction has been acclaimed as the "vital fraction," but again there is no evidence!

A writer in the *Journal of Pharmacy and Pharmacology* concludes "it seems, likely that its value is psychological and due only to the novelty and glamour of the treatment."—(*We are of the same opinion.*—ED. HEALTH).

What Causes Dreams?

In general, there are two types of dreams. One is caused by influences to which the dreamer has been exposed, usually during the preceding day, although on occasion considerably earlier influences may suddenly produce a dream. The other type is what may be called spur-of-the-moment dreaming. In this, virtually anything may be responsible, such as some strange noise that is not enough to waken one but is noted by the subconscious mind. With incredible rapidity, the mind constructs a situation to fit the noise or other disturbing influence. It is amazing what intricate details may be "thought up" in this way even by persons who are not ordinarily very imaginative.—(*Today's Health*, June 1960).

We should always keep a corner of our minds open and free, that we may make room for the opinions of our friends.—(Joseph Joubert).

When the Heart Stops

(A new and simple technique designed for emergency use)

PAUL W. KEARNEY

ONE day in May 1960, Bertie Bish, 67, of Baltimore, crumpled in agony across his bed. His wife found him there. With a scream she ran to the telephone and phoned to the fire department. "Please send an ambulance," she said. "My husband...." Bertie Bish's heart was acting up again.

The ambulance, with crewmen Hubert Cheek and Marvin Burkendine aboard, arrived several minutes later, siren moaning. By this time Bish was unconscious. His heart stopped beating. His face took on the bluish tinge of imminent death.

In any place but Baltimore, lay ambulancemen like Cheek and Burkendine would have been helpless to do anything except rush him to the hospital. Had a doctor been present he might have tried to restart the heart with a few hard blows of his fist on Bish's chest. Possibly forcing pure oxygen into the lungs might have started the heart pumping again. But the chances would have been slight.

The doctor might have performed a dramatic emergency operation:—cut open Bish's chest and reached in to massage the heart with his hand (a procedure known to doctors as "rhythmic manual compression of the heart"). Such operations are performed almost every week.

But even in skilled hands in a fully-equipped hospital this is a measure fraught with risk. Most certainly it is not for firemen, policemen, or first-aiders.

But Bish was lucky. Only four days earlier the two Baltimore ambulancemen had been taught a new technique which promises to revolutionize the emergency treatment of cardiac arrest—a technique almost as simple in its way as in the first-aiders' recently-approved and widely-publicized mouth-to-mouth breathing for starting respiration. Developed at Johns Hopkins Hospital, it is called "closed-chest heart massage." *It requires no surgery, no equipment. It is applicable not only in a heart-attack but in cardiac arrest from drowning, choking, electrical shock, chemical asphyxiation, shock from drug sensitization, or any other accident which causes the heart to come to a standstill. It can be used, reported its developers in the Journal of the American Medical Association, by anyone, anywhere. All that is needed are two hands.*

Technique.—To work on Bertie Bish, ambulancemen Cheek and Burkendine quickly stretched him flat on his back on the floor. Cheek knelt at Bish's side and tilted Bish's chin up and back, pointing it toward the ceiling, to keep his tongue from obstructing his windpipe. He then placed the heel of his right hand on the unconscious man's breastbone, in the centre of the chest, over the heart. He put his left hand on top of his right. With a quick firm thrust he pushed down with both hands,

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hard enough to depress Bish's chest one inch. This would squeeze some of the blood out of the heart into the big arteries. Then Cheek lifted his hands, to let Bish's chest expand and let some of the blood from the big veins flow into the heart. He did this 70 times a minute:—press...release...press...release.

Meanwhile, the second ambulanceman knelt at Bish's head and began mouth-to-mouth breathing, to force oxygen into Bish's lungs. This part of the technique must be foregone, of course, if the rescuer is working alone, the chest pressure provides some ventilation of the lungs anyway. But respiratory aid does tremendously increase the victim's chances of surviving with his brain undamaged from a lack of oxygen.

Cheek and Burkendine worked on Bish for only a minute before his pulse began a faint beat. After five minutes he had begun to breathe without assistance. In the ambulance they gave him oxygen and Cheek continued the closed-chest massage right into the emergency room at the hospital, where doctors took over. Today Bertie Bish walks around Baltimore marvelling at his experience—the first case of cardiac arrest on record to be snatched from death by trained first-aiders using the closed-chest massage.

This life-saving technique was developed by W. B. Kouwenhoven, Ph.D., a Johns Hopkins Electrical Engineer, with the help of others on the staff of the Johns Hopkins University School

of Medicine. The doctors experimented with it on dogs for two years before attempting it on humans. Then one day a 35-year-old woman's heart stopped while she was undergoing surgery. The surgeon massaged her heart without opening her chest. After two minutes her pulse returned, and the surgeon went on with the operation.

On other occasions: the heart of a 12-year-old boy suddenly stopped while he was being given anaesthesia. A 45-year-old man's heart stopped and he fell to the hospital floor while he was removing his clothing for an examination. An 80-year-old woman's heart stopped while she was undergoing surgery for cancer. In each case the doctors revived the patients with closed-chest massage. They brought back to life 14 of the first 20 cases they tried it on. By mid-August they had used the technique successfully on 44 out of 56 more emergencies—a remarkable record when compared with the results of cutting open the chest to massage the heart directly, which even in hospitals has proved only about 40% effective.

As Johns Hopkins doctors are quick to point out, the figures aren't quite as optimistic as they seem. This is because, whatever the technique used, some resuscitated heart-arrest patients die, perhaps hours or days later, of the very thing that caused the original arrest. Yet the results still have been so impressive that last May, Dr. Alfred Blalock, Chief of Surgery at the hospital, had the technique

taught to the Baltimore fire department's ambulance service supervised by Capt. Martin C. McMahon. Within three months, the ambulancemen revived six cases of heart standstill which had occurred on the street or in the victim's homes. Among them was one of their own firemen, a battalion-check, whose heart stopped after he was overcome by smoke while fighting a blaze. Now Captain McMahon is demonstrating the closed-chest massage technique to other ambulance and rescue squads.

To the men he is training, Captain McMahon stresses *eight points* :—

1. Check for pulse—the easiest place to detect it is not in the wrist but in the throat, on either side of the windpipe near the collar-bone. If no pulse is apparent, start working on chest massage at once. Don't waste seconds going for equipment or help. For the great peril of any heart or breathing arrest is anoxia—lack of a sufficient supply of oxygen carried in the blood, to feed the brain. The brain is the most sensitive tissue of the body, and the results of oxygen-starvation become irreversible within a few minutes—usually about three, after respiration or circulation is cut off. Hence a victim who survives belated treatment faces the possibility of extensive brain-damage.

2. Lay the patient face up on a solid support, such as the floor or pavement, a bed or couch is too flexible.

3. Tilt the head back until the chin is practically pointing at the ceiling. If the head sags forward the patient may be asphyxiated while you work.

4. Kneel so you can use your weight in applying pressure. Place the heels of your right hand on the breast-bone, with fingers spread and raised so that pressure is only on the breast-bone, not on the ribs.

5. Place your left hand on top of the right and press vertically downward, firmly enough to depress the breast-bone one to one-and-a-quarter inches. (With a child, use only one hand and relatively light pressure). The chest of an adult, resistant when he is conscious, will be surprisingly flexible when he is unconscious.

6. Release the pressure immediately, lifting the hands slightly, then repeat in a cadence of 60 to 80 thrusts per minute, approximately the normal heart action.

7. The patient should be taken to the hospital as soon as possible. Even if apparently normal heart-beat and respiration have resumed, professional care will be needed.

8. Continue the closed chest massage until you get professional medical aid, or fight into the emergency room of the hospital. Continue too, if possible, the mouth-to-mouth breathing until someone arrives with a tank of oxygen to take over. If you are on your own and the victim shows no response, continue the massage until rigor mortis sets in.

Even trained and experienced medical men find it increasingly hard to say when a person is really dead beyond recall. Many of the old signs—like dilated eye pupils which won't contract under a bright light—are no longer considered valid. Thirteen years ago, an eminent Cleveland surgeon set a heart to beating after 75 minutes of open-chest manipulation. Johns Hopkins doctors recently revived another cardiac-arrest victim after 105 minutes of closed-chest massage *plus* administration of oxygen. Sometimes, as the great physiologist Yandell Henderson of Yale once said: "The engine is merely stalled and needs to be cranked."

Closed-chest massage, in proper hands, may prove to be a

highly useful crank to get the standstill heart moving again.

For further information.—Literature and a motion picture on closed-chest massage are being prepared for use all over the nation. Inquiries should be directed to Capt. Martin C.

McMahon, Baltimore City Fire Dept., Gay and Lexington, Baltimore 2, Maryland.—(*Today's Health*, November 1960).

[Readers of *HEALTH* may cut out the portion containing the eight points, paste it on a cardboard and hang it on the wall for ready reference.—Ed.]

U.S. PRESIDENT-ELECT JOHN F. KENNEDY

A six-foot, 164-pounder who looks as trim and taut as the jib on his sailboat, Kennedy was asked recently how he kept in such good shape (he hasn't added more than a pound or two since he played freshman and junior varsity football, at Harvard nearly 24 years ago). "Easy", he replied with a half-joking smile, "I'm sweating out the primaries."

The physical demands of presidential primary campaigns bouncing from state to state, town to town—have, indeed, called for a high order of conditioning for this ordeal. Some days, Kennedy already was out shaking hands at 5:30 a.m. then racing through a split-second schedule.

Being on the move has been the principal form of exercise in recent months. Strenuous exercise is foreclosed by a back injury suffered when his PT boat was in combat with a Japanese destroyer in the Pacific during World War II. (The injury required surgery in 1945 and again in 1954). But he takes frequent walks with his wife. Summers, he golfs (in the low 80's), swims, sails at Cape Cod. He keeps a golf club in his office. When he feels

the need to "unwind," he swings it casually.

Normally, his day starts at seven a.m. He is really in business by 8:30 with breakfast meetings at his Georgetown home on legislative and political matters, then off to the Capitol. As a member of two of the most vital committees in the Senate—foreign relations and labour—he spends the better part of his mornings at hearings, dashes to the Senate chamber for the beginning of the day's session, then goes to his office to keep appointments for about an hour.

At 1-15 p.m., he has lunch in his office—food prepared at home and brought to him warm, tasty and as he likes it. That way he kills three birds with one stone: (1) he doesn't have to dash to a restaurant; (2) he gets home-cooking, and (3) he can hold business conferences while lunching.

After lunch, there are more committee meetings, staff sessions, mail-answering, Senate business. It frequently is eight o'clock before he heads for home—if there isn't a banquet and a speech to interfere. Kennedy, too, is a meat-and-potatoes eater (steaks and lamb chops), but he watches his diet carefully, avoiding exotic foods and rich desserts. He's a big milk drinker; relaxes occasionally with a cigar, but has never smoked cigarettes.—(*Today's Health*, June '60).

What's Public About Health?

TODAY'S world is not geared to those who still retain a love of privacy. The picture window, the Vistadome train, the open-floor plan office, the ubiquitous television lens, the man-on-the-street interview, the bedroom telephone—these are all a part of the public era. Today, it seems that almost everything is a matter of public concern, from public schools to public welfare, from public roads to public health.

What, in short, is public about health?

Although we have never been asked that question in exactly that way, it is not merely rhetorical. On occasion, a practising physician has been known to ask something like it. Oh, he may be willing to concede that the presence of dangerous communicable diseases require some public control but beyond that he is usually reluctant to go. We do not mean to imply that most, or even a great many physicians hold to this opinion. But it would be foolish to deny that there are some who do, and often they are most articulate about it.

This is unfortunate because it can deprive people of a quality of health-care that is possible but is not too often realized—the quality of health care which can result from the close working together of physician specialists in public health and private physicians.

For, the fact is that a boil and a backache, vomiting, and a cervical smear are matters of public health concern. The fact is that whatever distinctions there may have been between private medicine and public health are now largely academic. For both are involved in the prevention, diagnosis, and treatment of disease and the promotion of health. The woman with a boil must be treated by her physician certainly. But what about the responsibility to the public to see to it that staphylococcal infections do not endanger all persons, especially mothers and infants, who are in our hospitals? Control of such infections is not a problem with which the private physician alone can effectively deal. It requires organized community action. It is a public health matter.

A backache? It might, of course, be simply muscular pain. On the other hand, it might be an early symptom of heart disease. The private physician must diagnose, treat, and even try to prevent heart disease. But what about the necessity for organized action to help get people in for a periodic health appraisal so that an early diagnosis can be made? What about the need to help the victim of a cardiovascular accident regain the use of his arms and legs and even his mind, so that he may become a useful human being again rather than a vegetable? What about the necessity of assuring good nursing homes that really care about their patients and help them to recover instead of merely storing

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WHAT'S PUBLIC ABOUT HEALTH?

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them until they die? These are all the problems associated with heart as well as other chronic diseases. Without organized public action and support the private physician is helpless to solve them. They are *public health* matters.

Vomiting? It might mean any number of things. But what if it is a result of exposure to toxic levels of any one of a number of substances in an automobile repair shop or an industrial plant? Is this a problem that can be handled by the traditional doctor-patient relationship? Or is it not instead a problem to be dealt with by public health officials in cooperation with plant management so that the conditions which resulted in the exposure are corrected and the health of the workers protected?

And finally, a *cervical smear*. This definitely is a matter of physician-patient relationship. But it is also very much a public health problem. Cervical cancer is practically 100 per cent curable when found in time. As one of its functions then, the public health agency develops and promotes programmes designed to detect cervical cancer early. They can do so only in close cooperation with local physician groups. It is in this way—and only in this way—that public health and private

medicine together can save many lives which otherwise would be and are being lost.

The examples are only a few of many which could be cited but they serve to emphasize the fact that there are many health programmes which demand concerted public action for their solutions. That action finds its focus in public health agencies. This is not to say that it is solely of concern to "public health officials," for it emphatically is not. Every parent, every child—yes, and every physician, whether he recognizes it or not—is actively engaged in public health. For public health is literally everyone's business and everyone's responsibility.

A picture window has no appeal for us unless it overlooks our private back yard. We relish our privacy and will defend our right to and need for it, as loudly and as long as the next man. We are more than anxious to leave to each person the contemplation of his own navel, or ingrown toe-nail for that matter. But, when the health of the people is affected—as it often is—by conditions or events with which no individual family can cope, then it is a public responsibility.

That's what's public about health.—(Editorial *JMSMS*, May 1960).

Good Looking People Tend to be the Happiest

Indiana University investigators studied a representative cross section of men and women, found that those who were rated as good-looking or attractive tended to be the happiest and best adjusted emotionally. This was found to be particularly true in the case of women.—[This is, we believe, universally true for all lands.—*Ed. Health.*]

NERVOUS BREAKDOWN?

ROBERT O'BRIEN

One thing is certain—it's a devastating time of crisis. It's also certain that a breakdown can be "cured." Better still, it can be prevented.

JUST what is a nervous breakdown? Since nerve tissue never mechanically snaps, or "breaks down," does the term have any validity? Several doctors I talked to, dismissed it as "vague." Other authorities defend it. The main reason for the term's usefulness, doctors are coming to understand, is that all nervous breakdowns have certain elements in common.

The core of the nervous breakdown is *anxiety*, a condition of heightened tension accompanied by an overpowering feeling of apprehension without apparent reason. We all have anxieties. Their causes are usually forgotten. But the duplication of an once-frightening circumstance may call these nameless fears from the depths of our unconscious mind to fill us with baffling dread and terror. I once knew a newspaperman who broke down on the death of his mother. Psychotherapy uncovered a long-buried terror that he'd felt as a child whenever his parents had left him alone in the house. When his mother died and "left him behind" once more, it had all swept back with crushing force.

Another common element in all breakdowns is the failure of

defence mechanisms. Early in life most of us learn ways of protecting ourselves against situations that cause anxiety. The most common defence mechanism is *rationalization*. A man rationalizes his heavy drinking by telling himself that he's just being sociable, for example. Another technique is "*displacement*." Here the upsetting emotions we feel towards one person are concealed by working them off on another. For instance, a salesman hates his boss but can't admit it, so he quarrels with his wife. Other methods of warding off anxiety include *denial*, a blind refusal to admit that problems exist; and *repression*, an unconscious but purposeful "*forgetting*."

Sometimes defence mechanisms perform more or less effectively for a lifetime. But frequently, when tensions and fears pile up overwhelmingly, the defence mechanisms fail and the underlying anxiety bursts through. It is then that the person "breaks down" into helplessness. In our stressful society, this is happening with disturbing frequency.

All breakdowns have a common denominator: the man can't go to work (or the housewife can't keep house). But they are rarely the sudden, dramatic crack-ups that they often seem to be. "If anything is typical," one doctor told me, "it is that a nervous breakdown is the end result of a gradual decline taking place over weeks, or even months. It is a progressive inability to cope with anxiety. And the warning symptoms are clearly visible, all along the way."

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All breakdowns are caused by *stress*—often *physical* and *social* as well as *mental*. There is a limit to human tolerance of stress, and every man has his breaking point. If mild physical strain (such as lack of sleep) is added to a severe neurosis—or if very heavy overwork and family trouble are added to a minor mental stress—an individual may break down. *How* he breaks will in large part be determined by his underlying psychological weaknesses.

How can we tell when we are heading for trouble? The first sign is generally a prolonged feeling of being vaguely unwell or "below par." At the same time, we may experience annoying physical ailments: tenseness, restlessness, persistent fatigue, insomnia. We may develop more crippling symptoms: severe headaches, palpitation of the heart, dizziness, gastro-intestinal disorders, muscular pains. Perhaps these symptoms give us an excuse to avoid stressful situations—a noisy party, a difficult conference, an appointment with someone we do not like.

What are the chances of avoiding a breakdown? Excellent, authorities agree, particularly if the disturbance is recognized

and resolved in its early stages. In most instances, changes in behaviour occur quite early in the development of an emotional illness. The altered behaviour pattern usually affects the individual on the job. If the patient obtains immediate treatment, he can usually straighten out his problems without prolonged time off from work."

Once a breakdown occurs, recovery depends on the complexity and depth of the disturbance, the patient's desire to get well and the adequacy of treatment.

Most breakdowns can be "cured." So if we recognize in ourselves symptoms that are making us, or others, unhappy, we should seek immediate help. A good place to start is the family doctor or priest. In the early stages of emotional trouble, a candid talk with a sympathetic listener may be all we need.

"Every problem of frustration which is faced and dealt with realistically adds to the strength of the personality. Every failure from which a lesson has been learnt provides both an experience and an asset which increases our capacity to meet new problems."—(*The Rotarian*).

Crucial Food Habits

The food habits people develop in their 40's and 50's can be critically important in preventing "nutritional deterioration" in old age. Elderly people need a well-balanced diet for good health but fewer calories; they must resist pressures to make poor choices of foods, because of loveliness, economic pressure, or rush of work.—(*Today's Health*).

"A bride wears white," said the speaker, "as a symbol of happiness, for her wedding day is the most joyful day in her life."
"And why do men wear black?" someone asked.

(That man, in his conceit, has attempted to make himself the lord of Nature than the child—that is)

The Greatest Folly of MODERN MEDICINE

DONALD F. NORFOLK, D.O., M.R.O.

HEALTH is a matter of harmony—a balance between man, his various parts, and his environment. It is a state which cannot be achieved artificially. When this harmony exists there is a natural healing force, a *vis medicatrix Naturae*, which acts constantly to maintain the health and functional well-being of the individual. This is a fact which has been appreciated by all the truly great physicians who realize that, by themselves, they possess no healing powers. Whether he is aware of it or not, the surgeon, when he removes an appendix, does not cure the patient; he merely removes an organ and then relies upon Nature to heal the wound that he has made. Similarly, the physician who treats a boil by the injection of penicillin does not heal the lesion; he merely suppresses the rate of growth of the bacteria and then relies on the natural healing forces of the body to repair the damaged tissues. Many doctors, however, feel that they themselves have wrought the cure by their own intervention (and brains!) Therefore, being armed with this assurance, they feel justified in taking more upon themselves.

A person is exhausted and

requires rest. Nonsense, they say, he only requires a few benzedrine tablets to pep him up. Someone is suffering from indigestion because he has been eating the wrong kind of food in the wrong way. Excellent; a regular dose of antacids is sure to do the trick. Constipated? Take laxatives. Suffer from headaches? Take aspirins. For every symptom of unnatural living there is a man-made remedy; but it is not a cure—it is only a palliative.

Hippocrates, the "Father of Medicine", is said to have "arrived at the top of physic by the laying of the foundation of his art upon the *vis medicatrix Naturae*." This was the basis of his skill—a deep understanding and a complete faith in the healing powers of Nature. Professor Hans Selye, the doctor who, in the words of Sir Heneage Ogilvie, has made "probably the greatest contribution to scientific medicine in the present century", is another physician who shares the same faith. After years of studying the mechanism by which the body reacts to disease, to injury, and to mental stress, Dr. Selye came to the conclusion that "we could enormously lengthen the average human life span by living in better harmony with natural laws." Similarly, Dr. Kersley, a famous British rheumatologist, says, "Fitness is largely dependent on such factors as peace of mind, interest, sufficient and balanced diet, sufficient rest, healthy living conditions, proper graduated exercise and exposure of the body to the fresh air."

These are men whose knowledge has not outstripped their

wisdom-men who are very much in a minority in a world dazed by the baubles of scientific research. Such men seek to explore the mysteries of Nature so that they may be better able to obey her laws. Others, however, feel that scientific progress can be maintained only if Nature is completely tamed by man. The extent to which they will go to achieve this aim seems limitless.

Recently, scientists have demonstrated a procedure which may enable man to determine the sex of his offspring. Taking a sample of the semen of buck rabbits and passing an electric current through it, it has been found that the sperms carrying the male sex chromosomes tend to gather at the negative pole of the battery. If a sample of these sperms is taken and injected into a doe rabbit, the chances of obtaining a litter of males is greatly increased. It is possible that the same technique could be applied to a specimen of human semen—in fact it may already have been done. But is it desirable that we should

be able to choose the sex of our offspring? An editorial in a leading medical journal, commenting on this recently, said, "On the whole this looks like being one of those decisions better left to Nature but unlikely to be."

That is the danger. We have the knowledge and the power to disrupt the natural order of things, but we have not the wisdom to see that if we exercise these powers we lose *vis medicatrix Naturae* which exists only when man is in harmony with himself and his environment.

That is the greatest folly of modern medicine—that man, in his conceit, has attempted to make himself the lord of Nature rather than its child. We have still to learn the lesson that Nature can be commanded only by being obeyed. That is as true to-day as it was in the days of primitive man, and it will not change, no matter what fresh power may be placed in the hands of future generations.—(Health For All, November 1960).

"Please—not in Front of the Children!"

The parents who bottle up their differences until the children have gone out to play, or gone to bed, or who nurse their grievances silently all through their children's childhood, may not be so wise or self-sacrificing as they think.

This "not in front of the children" idea is well-ingrained in the average family, but the new-thinking of modern psychiatry disagrees. Many homes have small doses of parental disharmony from time to time, and children get "inoculated" with the idea that such things happen in marriage.

"If parents can quarrel and make up in front of the children, their marriage will stand a better chance, and the children will grow up to realize that one quarrel does not make a divorce."—(World Digest).

1. They never taste who always drink; they always talk who never think.
2. True love is like ghosts, of which everybody talks and few have seen.

—(N.Y.S. Med. Jour.).

BABIES

(A common ailment among them)

By a PEDIATRICIAN

THE baby who vomits is such a common problem. The other day a mother brought to me her three months' old infant. A cheery little soul he was, all smiles and activity as I talked to him. His abundant energy and his plump little body—these, with other signs, left no impression on one's mind of an "ill" baby. What was wrong? He had been vomiting.

"Do you jiggle him on your knee?" I asked the mother.

"No," she replied; "but his daddy likes to play with him when he comes home in the evening, and to throw him up in the air." On ordinary planning, this would come soon after baby's six o'clock evening feed.

Now I ask you; how would you feel if, straight after a hearty meal, somebody put you on a switchback or a roundabout, and gave you a strenuous tossing? Do you think I was right in sending a message to Daddy to be less vigorous in his playing with baby?

I am always happy when I see parents obviously derive great pleasure from their little one. God bless them! That is how it should be. But with that, let me add a few words of caution.

In the first place, baby is not a plaything, to be tossed in the air, or for every aunt to kiss, and for every relative to have a turn at cuddling. He is a help-

less, fragile little mite, needing warmth, protection, peace, and nourishment, so that he may grow quietly to the stage of being able to fend for himself. Don't cheat him of any of these things, just because you like the feel and thought of hugging him.

Incidentally, if you happen to be a smoker, it is more than likely that he will shudder or turn up his nose at your tobacco-flavoured breath. If it isn't big sister's latest Paris perfume, it's either the odour of father's steak and onions, or grandpa's Navy-Cut, even if there's nobody in the family with gums putrid with pyorrhœa. Please, please, I beg of you give the baby a chance, and limit the kisses to an occasional dainty one on the back of his head.

But now to discuss further the vomiting baby. Having eliminated such irritations as I have indicated above, let us look at other matters.

When a baby has been fed, he should be quietly "changed," for the intake of food may well stimulate evacuation of bladder and bowels; so make him comfortable. Then tuck him cosily in his crib, and leave him to rest, while he digests his latest meal. He may "throw back" a little, possibly along with some wind; so attend to his bib.

This "bringing up his wind" is worthy of special notice. I does not need either peppermint or gripe water, but just a little common sense and patience. Having fed baby, mother should sit quietly enjoying brief rest herself, with infant on her lap, and one

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round him, while he sits with his back comfortably against her chest; that is, facing the same way as she herself.

In baby's stomach swallowed air will naturally make its way above the surface of the fluid. Then a little later, when the normal contractions of the infant's stomach commence, the air will come up in a comforting little belch, without disturbing the fluid contents of the stomach; we do not recommend laying the baby over mother's shoulder as its stomach is apt to be compressed; and if he does vomit, it will be down mother's back, where she cannot see what is going on.

We must review baby's feeding also. Too much food perhaps; or may be you are in too much of a hurry to get him on to solids; or your general choice is injudicious; all very common causes of trouble. You will be wise to take baby, if he is vomiting, to your doctor, or the local Welfare Clinic, and get advice. For it can be a serious matter. Baby must take and retain adequate water and food, if he is to flourish and grow well, the water being the more

urgently necessary.

Vomiting may be part of the general upset that goes with illness, be it the onset of measles; or ear, nose and throat infection; a cold, and so on. Quite often under such circumstances the little one's appetite fails; but if he does take his feed, his digestive organs may be in no state to deal with it, and so he vomits it back. These too, are matters on which it is well to consult a doctor without delay.

There are occasionally problems related to the structure of the stomach, or to emergencies in the bowels, which give rise to vomiting. Emphatically, even more in such cases is prompt medical advice an absolute necessity.

So do not regard baby's vomiting light-heartedly. There may be trivial causes; there may be gravely serious causes. Make sure if it is in the former class; for then you can soon set matters right; but if, despite simple common sense adjustments, the trouble persists—lose no time in securing your doctor's advice.—(*Good Health*, May-June 1960).

"Do Me a Favour"

You must have noticed how, while all our friends are always ready to give advice—at all times, whether we want it or not—when it comes to their doing something to help us carry out the advice, they always shy off. They don't want to be involved. Advice is easy. It costs them nothing. Participation costs them much more. It makes them a party to what's a foot and could bring upon them the backwash of all the hostility, and the consequences whatever they may be—a row, a fight, or a law suit.

We should accept the fact that however close a friendship may be, our friends would prefer to stand on the side lines and talk. Very, very few are ready for a fight and eager to plunge into it. This should be taken into account before we take the first step and involve ourselves. In the end you will have to act on your own.—(*Tit bits*, London, 29-10-'60).

HIGH BLOOD-PRESSURE:

How Dangerous Is It?

IRVINE H. PAGE, M.D.,
Director of Research,
Cleveland Clinic Foundation

Q. What does a physician mean when he speaks of high blood-pressure?

A. He means that the blood-pressure is elevated above a relatively arbitrary normal value. Normal blood pressure is roughly 120 over 80. These figures represent in millimetres the height of a column of mercury in a sphygmomanometer, an instrument for measuring blood-pressure in the arteries.

The larger figure is the systolic pressure—the maximum pressure in the arteries with each heart-beat. The smaller figure is the diastolic pressure—the minimum pressure between beats, when the heart muscles are relaxed and supposed to be getting their vital rest.

Blood-pressure fluctuates greatly, and that's as it should-be. There are no sharp limits; if your reading is 138 over 95 at one time, this doesn't necessarily mean you have high blood pressure. However, if it is consistently 160 or more over 90 or 100, and this goes on day in and day out, year in and year out, the chances are pretty good that you're developing hypertension.

Hypertension is much more than just an elevation in blood-pressure. The really important thing about high blood-pressure is the damage it causes to the

blood vessels. So I think of it as a disease in which elevated blood-pressure is only part of the whole picture. Hypertension is merely the name given by medical people to elevated blood-pressure. The public calls it high blood-pressure.

Essential hypertension is a group of symptoms and signs in which elevated blood-pressure and progressive damage to the blood vessels characterize the disease. It is a very real danger to people's health. However, it varies tremendously in its manifestations. For instance, many people will have high blood pressure—particularly women after the menopause—and they will carry it extremely well. They may go many, many years with minimum or no difficulty.

Q. Is there a relationship between the terrible stresses and strains of modern-day living and the incidence of high blood-pressure?

A. By and large, there is; probably not a very close relationship. We see high blood-pressure in people who have not been subjected to any unusual stresses of life.

Stress, of course, is a very difficult thing to evaluate. What is stress to one person is not stress to another. So it is awfully hard to assume, for instance, that our generation is under more stress than any other generation. Look back and you'll realize that every generation has had tremendous stresses. But all the same stress is not a desirable thing to have.

Q. Is a highly nervous, overactive person more susceptible to high blood-pressure than a calm, easy-going individual?

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HIGH BLOOD PRESSURE—I. H. PAGE

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A. Probably not; for many highly nervous, overactive persons don't have any hypertension. This idea about such people being susceptible—more so than other individuals—to high blood-pressure is a very easy trap to fall into.

In many patients, the hypertension is coming from the kidneys and not from their nervous systems. This is an important, newly-discovered facet of the disease. We now realize that many of these people who are masqueraded as so-called essential hypertensives have lesions in their kidneys, in the blood vessels going to the kidneys. Such an ailment is surgically correctible.

Q. Does a person's weight affect high blood-pressure?

A. Yes, it can affect it in two ways. An obese person has a larger, thicker arm, and when the blood-pressure cuff is put on it, the cuff has to compress more tissue in order to compress the blood vessel. This gives falsely high values.

Secondly, obese people probably are inclined to have a little higher blood-pressure on the average than people who are long and lean. On the other hand, it would be quite wrong to say that because you are obese you will eventually have hypertension.

Q. Does diet have any effect on high blood-pressure?

A. Diet has some effect. In the first place, excessive caloric intake makes a person obese. The other factor, which may

have some importance when carried to extreme levels, is salt ingestion.

This doesn't mean that a person who takes an average amount of salt is developing high blood-pressure because of the amount of salt he consumes. However, there is growing evidence that in some countries, where salt is used to great excess, the incidence of strokes and high blood-pressure seems to be higher than in populations consuming less salt. An example would be Japan, where salt is widely used as a food preservative because they have no refrigeration in some parts of the country.

Q. What causes high blood-pressure?

A. This is a very big question because there are so many different types of hypertension. There are four general categories of causes of high blood pressure. They range all the way from kidney disease to a group belonging to the endocrine system, such as tumours of the adrenal gland. Then there is a group called cardiovascular—obstruction of the aorta, for instance. This can be corrected by removing the obstruction surgically. Lastly, there are the neurogenic types of blood-pressure. These seem to be associated with diseases of the nervous system.

Each of these four categories can be divided again into different types. I'd say, however, that generally the kidney is responsible for more hypertension than any other single system.

Q. Is the kidney both the provocative and protective organ so far as hypertension is concerned?

A. The kidney is the provocative organ in the sense that we believe it secretes an enzyme which acts on a constituent in the blood to produce a third substance, which we call angiotensin. We think angiotensin is the cause of high blood-pressure of kidney origin, or at least part of the mechanism which causes this condition. Injected into humans, it is the most active known substance in raising blood-pressure.

As a protective organ, the kidney has a means of destroying this blood-pressure-raising principle. That is why we say the kidney can both produce and destroy the causes of high blood-pressure.

Q. What effect does high blood-pressure have on the heart and circulatory system?

A. High blood-pressure puts an added strain on the entire circulation. The heart and blood vessels are built to withstand a certain pressure. If you double the pressure, the heart must work twice as hard to pump the same amount of blood around to the tissues. This causes the heart to become larger and more muscular. It puts further strain on blood vessels by pumping more blood at greater force through them. The blood vessels degenerate more rapidly as a result of this increased pressure.

"Plato pities the young man who started at such a pace that he never reached the goal. One of the saddest of life's tragedies is the wreckage of the career of the young collegian by hurry, hustle, bustle and tension."—(Sir Wm. Osler quoted by *Texas State Journal of Medicine*, August, 1960).

The enlargement of the heart makes it a more efficient pump. Unfortunately, this efficiency doesn't last. The heart, as time goes on, cannot withstand the strain, and begins to fail. There is another development. The elevated blood-pressure affects the vessels of the body and may result in a stroke in the brain or deterioration of the kidneys and failure of them. So you can have three causes of death from hypertension: stroke, failure of the heart, and failure of the kidneys.

Q. Aren't there drugs today which will relieve or cure high blood-pressure?

A. Recently developed drugs are effective in the majority of hypertensive cases. This doesn't mean that this is the only type of treatment. It does mean that the drugs we now have, are very effective. It's fair to say while they often do not get at the cause, they do reduce blood-pressure and are helpful to that extent. This is one of the most exciting fields in medical research, and we have received much more than our money's worth out of it. It is not as glamorous as research in some other diseases, but the numbers of victims involved make it of surpassing economic and humanitarian importance. These endeavours represent one of the great unsung victories of the medical sciences—(*Today's Health*, June 1960).

Tonics and Appetisers

The judge listening to a divorce case said to the wife:

"I think you might as well give your husband a divorce."

"But," said the lady, "I have lived with him for 20 years and now you want me to make him happy?"—(*J.A.M.A.*).

A young man was telling his girl:

"I do not have a lot of money like Aly Khan. I do not have many homes like Aly Khan. I cannot give you diamonds like Aly Khan. But I love you."

"I love you too," was the answer, "but tell me more about this Aly Khan."

An American tourist was looking down into an old Greek volcano. Finally, he said, "It looks like hell."

"Oh, you Americans," said the guide, "you have been everywhere."—(*J.A.M.A.*).

A friend told us this tale.

"Jack and I have been friends for 10 years. There is nothing I would not do for him and there is nothing he would not do for me. That is the way it has been for 10 years: We don't do a thing for each other."—(*J.A.M.A.*).

Quotes of the Week

Love is just a lot of damn foolishness.

Love is the morning after.

Love is the noon on a clear day. —(*D.D.*).

Mrs. Newlywed—"Oh, George, do order a rat-trap to be sent home today."

Mr. Newlywed—"But you bought one last week."

Mrs. Newlywed—"Yes, dear, but there's a rat in that."

Husband—"You accuse me of reckless extravagance. When did I ever make a useless purchase?"

Wife—"Why, there's that fire extinguisher you bought a year ago. We've never used it once."

The young man sneaked up behind her, covered her eyes with her hands, and announced:

"I'm going to kiss you if you can't tell who this is in three guesses."

"George Washington, Thomas Jefferson, Abraham Lincoln," she guessed.

Firt Stude—"Let's cut philosophy."

Second Stude—"Can't, I need the class."

Lung Specialist—"A man who sings the top of the voice for an hour a day was troubled by chest complaints in his old age."

Pre-Med—"He probably won't even be troubled by old age."

Prof—"What do you find the hardest thing to deal with?"

Stude—"An old pack of cards."

Professor—"What is nitrate of sodium?"

Stude—"Half the day rate, I suppose."

"Are they very strict at your college?"

"Strict? You remember Jonesey? Well, he died in class, and they propped him up until the lecture ended."

Chem Prof—"Come, come, give me the answer, please!"

Stude—"I can't say it, but it's on the tip of my tongue."

Another Stude—"Gracious! Don't swallow it—it's arsenic!"

"Do you permit your wife to have her own way?"

"No, sir. She has it without my permission."

Mary—"Did you ever catch your husband flirting?"

Mabel—"Yes; that's the very way I did catch him."

Canvasser—"I wonder if I can see your mother, my boy. Is she engaged?"

Tiny Tot—"Engaged! She's married!"

His Reverence—"What are the sins of omission?"

Little Cicely—"Please, sir, they're the sins we ought to have committed, and haven't."

Father (reproving his son and heir for greediness)—"Jimmie, you're a pig. Do you know what a pig is?"

Jimmie—"Yes, Papa. A pig is a hog's little boy."

"Wille, I'd like to go through one whole day without once scolding or punishing you."

"Well, Mother, you have my consent."