

The Oriental
WATCHMAN
& Herald of Health

MAY, 1934



In This Issue

FRANCE FRIGHTENED

THE INDISPENSABLE
ONION

BELIEF IN THE
SUPERNATURAL

THE DIVINE CALL

Let us keep cool!

*The Himalayas
in rugged Sikkim
24,000 feet up*

Photo, G. A. Hamilton



C. A wise man is one who sees it.

C. "The year 1, N. D. (New Deal)" is appearing in American newspapers.

C. Cardinal Newman's definition of a gentleman as "one who never inflicts pain," is hard to beat.

C. The late Thomas Edison in a newspaper interview before his death commiserated the milliners because "the most he gets out of life is Bright's disease and diabetes."

C. Can you visualize four billion dollars worth of gold, the amount now in the United States treasury as a result of the confiscation order of Uncle Sam? In terms of weight it is only a little over 7,000 tons.

C. The Pope is reported to have recently instructed all priests in Germany to cease attacking Protestantism in order to conserve all their strength for fighting paganism. All signs point to a serious conflict soon between the Papacy and the Nazis.

C. The Soviets are building the world's biggest aeroplane. N. Kalin who built the monster 100-passenger plane last year, that crashed on its test flight killing fifteen prominent people, was with difficulty restrained from suicide. This clever construction engineer has been persuaded to try once again, replacing the destroyed plane with another, which he announces will be technically perfect.

C. Raymond Huber, one of France's smartest pleaders, in trouble over the Stavisky affair, jumped into the Seine on his way home from the Palais de Justice, only to be fished out by the police. Dripping wet he jumped in again from the middle of the *Font de Solferino*. He landed in front of a barge whose sailors fished him out with a boat hook. He is now recovering in a hospital.

C. Something new in aviation is reported from Roosevelt Field, New York. While circling high in the air the aviator recently pulled two levers in his aeroplane, when three men and a woman appeared riding calmly towards the earth. A new safety device released the passenger seats from the plane, a 30-foot parachute opened and they floated safely to the ground. They were strapped to the seats, and sat on rubber cushions to soften the shock. For ourselves we would hesitate to let the other fellow pull the release lever.

C. A curious by-product of introducing electricity in the villages throughout the Panjab came to light recently. After dusk a buffalo in Sheikhpura was noticed to be jumping about in a peculiar way with muscles twitching violently. A crowd soon gathered and it was decided that the buffalo had become possessed with an evil spirit. The owner sent for a well known sorcerer, but before his arrival someone discovered that the metal chain with which the buffalo was tied was fastened to an iron bar, which in turn was touching an electric light pole where there was a leak. On release the buffalo returned to normal.

C. Another "witch" story that comes to us this month has a more tragic ending. Ranji Babu Worli, living in a village in the Nasik district, was sentenced to death for the murder of widow Chimli of his village. In his testimony he said that the priest of his village had located her as the "witch" which had cast a spell over his life for years, causing the death one by one of his children, and finally the death of his wife, as also the loss of his property. In sentencing the man to death the judge remarked that in spite of his sincere superstitious belief, there was no real excuse for the crime.

C. People who do not believe in signs should not be allowed to drive motor cars.

C. Whether or not life is worth living is said to depend largely on the liver.

C. "Democracy is the most difficult form of government," said Mr. Baldwin, recently, "because it requires the co-operation of all the people in the country . . . The wheels may now be creaking, but are you sure that the wheels of state are not creaking also in Moscow, Berlin or Vienna?"

C. A miracle of modern surgery is reported from London, where H. H. Watson who has been blind for twenty-five years is gradually recovering his sight through corneas which were grafted on his eyes. The operation was performed by the noted surgeon J. W. Tudor Thomas, at the Royal Ophthalmic Hospital.

C. This year every lorry in France will have to carry a selenium cell, like the cell that caught the star-ray that opened the Chicago Exposition. This cell is to be fitted to the back of the lorry, so that any motorist wishing to pass may signal the driver by turning on his light. The light flashing on the cell rings an electric bell by the side of the driver.

C. Failing to enunciate clearly over the telephone is now said to be the match that set off the explosion in Paris that caused so much bloodshed recently. M. Daladier the Premier, telephoned M. Chiappe the Prefect of Police the Cabinet decision to remove him from his office. The reply which the Premier heard, given in a very angry voice was, "Je serai dans le rue," meaning "I will be leading the mob in the street." M. Chiappe denies saying that, but declares he said, "Je serai a la rue," "I shall be on the street," that is "out of a job." The misunderstandings grew and anger lashed the men to fury until much blood was shed—chiefly because of a misunderstood word!

C. The Annual Report of the Rockefeller Foundation shows an expenditure during 1932 of a sum equivalent to about thirty million rupees, for projects in the fields of medical, social, and natural science, the humanities and public health. In seventeen foreign countries laboratories have been established for fighting various diseases such as yellow fever, malaria, hookworm, tuberculosis, and yaws. Forty-three foreign countries altogether have been benefited. They supported 225 international fellowships in public health. Both India and Ceylon have benefited from this great service. Both father and son, the founders of this great institution, are still living, and have set a splendid example of what great good can be done with accumulated wealth.

C. Prof. Mario Ferragetti, research scientist with the Government of Italy, has developed a new fuel for motor cars which costs less than one tenth that of petrol. It can be used in all types of cars without change of construction. The secret is carefully guarded but it is reported that the gas is generated by passing steam through smouldering charcoal. The apparatus is contained in a trunk at the rear, the gas passing directly to the cylinders after straining. The first long test trip was from Rome to Vienna and back, a distance of 1800 miles, at a cost of only about seven rupees for fuel. Even then they say that was more than it should be as much snow and slush were encountered. Italy has been making superhuman efforts to find some substitute for petrol as she has no oilfields in her territory. It would seem that her efforts are about to be crowned with success.

A BABY PAYS *for* Her Parents' Neglect

By Mildred Dillistin

A LITTLE child lies ill. She is so near to death it seems a wisp of a breeze through the nursery window will waft her away.

Short years ago she was unborn, unknown. Then she arrived here, bringing to the lives of two a little of sacredness and a big share of love. Dear to them as only a dream-faced baby can be. How incomparably more precious to them after three years of enchanting babyhood! Three years measured by the growth of curled pink toes and the increasing straightness of chubby legs. Three years measured by a transition from mute quiescence to eager responsiveness. For many months the home has resounded to the patter of reckless baby feet and the babble of baby jargon.

The patter has ceased. The only baby talk is in fever and delirium. The household holds its breath. It is on its knees imploring the return of its baby. Little Ariel is stricken by that most monstrous of children's diseases—diphtheria.

"How could it have happened?" the parents beseech each other. "How could we who love her so unutterably have failed to protect her from this choking, horrible thing?"

Such care she has had! Care which began long before her birth, and to this day remains the first duty of the entire household. All possible things—save one—they did to keep her in rosy health. The doctor had told them about toxin-antitoxin (and the newer product toxoid). In fact, and because they were such careful parents, he had told it to them in detail:—

For centuries upon centuries diphtheria was the most fatal disease of childhood. It was marked by up-and-down years of viciousness, but almost always killed one half of those stricken. Physicians watched grayish, slimy membranes spread over the pink throats of little children and often into the larynges, choking them to a horrible death, and were powerless to lessen their sufferings one particle. The Italians



called the malady "garotillo,"—the "strangler," and the years were named by its ravages.

Mothers begged of the great Pasteur to save their little ones from their grimmest enemy as he had saved mankind from hydrophobia. Pasteur's investigators and those of the famous German, Koch, set out to track down their microscopic foe. They found him, the red-shaped diphtheria bacillus, and they discovered that it is a poison he excretes which murders children. The deadly stuff had to be separated from the bodies of the bacilli in order to prove this, a feat no other scientist had accomplished before them. One drop of the concentrated poison of toxin will kill twenty-five guinea pigs.

For each brilliant experiment with the diphtheria microbe, these men, as most microbe hunters do, had to pay with a thousand discouraging failures. In the meantime, children die.

But at last, Christmas of 1891, a child ill of diphtheria received in its suffering body the first human dose of antitoxin—and lived! The stupendousness of the serum's life-saving power may be briefly glimpsed in one instance. In New York City alone the reduction in the death rate measured a saving of more than 7,000 lives in one year.

But the scientists decided even antitoxin was not enough, for unless it is administered early in the disease it may not save! They (*Turn to page 37*)

Modern MOTOR ROADS Across CENTRAL ASIA

One of our correspondents in China, Mr. Edwin R. Theile of Shanghai, recently interviewed the great explorer, Dr. Sven Hedin, as he was about to set out on the penetration of Central Asia

Dr. Sven Hedin, the famous explorer, at his tent facing Central Asia

Below: Map showing proposed double highway, being surveyed to connect with present Chinese highways on the one side, and with Soviet highways at three points on the other



A VAST unbroken stretch of highway extending all the way across Europe and Asia from the Atlantic on the west to the Pacific on the east,—this is the dream of Dr. Sven Hedin, famous and intrepid Swedish explorer, as he set it before the writer on the eve of the departure of the Suiyuan-Sinkang Highway Expedition for the regions of Central Asia, in behalf of the Chinese government. Starting from his headquarters at Kueihua, Suiyuan, on November 10, Dr. Hedin is setting out across Mongolia toward Hami and Tihwa in Chinese Turkestan, possibly pushing on toward Chuguchak, Nigyuan, or Kashgar on China's westernmost borders, and returning through Kansu along the old imperial highway, to terminate his journey at Sian, capital of the province of Shensi. It is expected that about eight months will be required for this gigantic undertaking.

The objective of the expedition is to survey a route for a suitable highway which will link the distant province of Sinkiang with the rest of China, and which will complete the last link of a highway providing for modern motor transporta-

tion from the shores of the Yellow Sea, all the way across China's northern domains, into the heart of Asia, on through the regions of the Caspian and the old Mesopotamian valley, into Asia Minor, across the Bosphorus into Europe, and on toward Paris and the ports of the Atlantic coast.

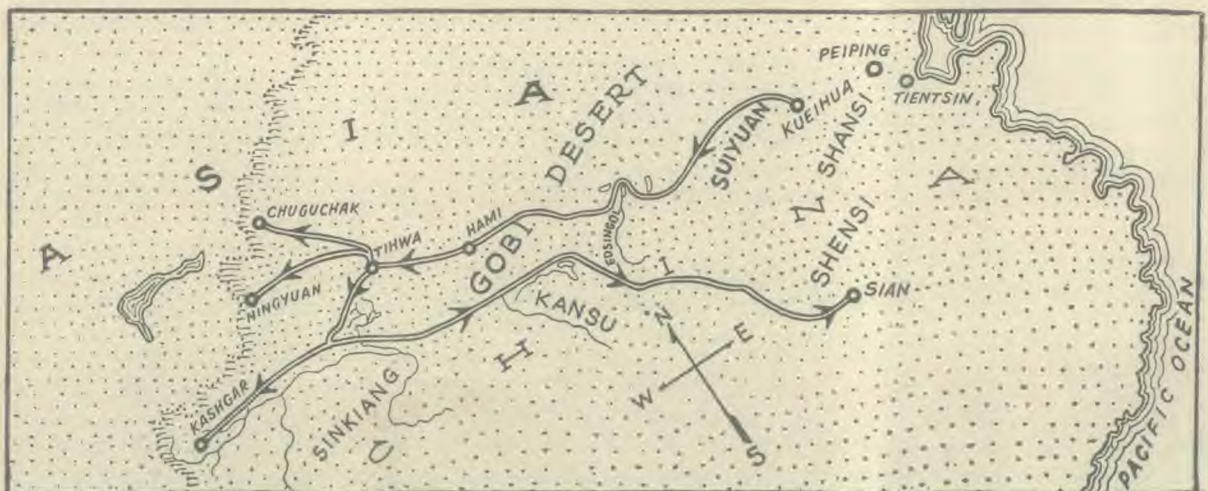
Following the Caravan

Dr. Hedin's eyes sparkled with delight as, at his headquarters at Kueihua, he set before me his vision of such a superhighway of tomorrow, which, he pointed out, will enable one to get into his motor car at Tientsin or Peiping and, traversing the entire breadth of the Asiatic and European continents, take one to the great centres of Europe. From Hami westward such motor transport is already possible, Dr. Hedin declared, the only link still to be provided being in the region which the present expedition is now to explore.

This proposed highway, following the old camel trails into the heart of Asia and the old silk road along which ancient caravans carried their cargoes of silk to Rome two thousand years ago, is part of the great communication system planned by Dr. Sun Yatsen in his scheme for the reconstruction of China.

The expedition is making its journey in a fleet of new model Fords which have been selected for this purpose.

The following telegram from President Roosevelt was received by Dr. Hedin as he was about to leave on his adventuresome journey: "My best wishes for your important new expedition. No one is better fitted to lead it (Turn to page 34)



France

FRIGHTENED

By Jean Vuilleumier

Our Correspondent in France

FRENCH academicians are not, by definition, pessimistic. Living as they do in the realm of literature, addicted to the cult of rhetoric, they are more likely to pass by the sufferings of ordinary humanity, and to overlook the dark sides of political and economic life. Some of them are, however, becoming uneasy at the sounds of distress coming up from the angry streets to their lofty sanctums.

One of them, Paul Bourget, exclaims: "The times we have come to are such that we can bear neither our vices nor the remedies proposed to cure them." Another one, Paul Valery, in a public lecture given in February, 1933, spoke of the "modern man" as having "never indulged in so many amusements as now, and as having never had so many causes for alarm;" he added that this same man "craved brutal excitements, infernal drinks, bestial emotions."

"While the modern world," he went on to say, "is possessed with a prodigious technical capital, it has not known how to build for itself sound political ideals, nor a system of morals, nor adequate civil or penal laws. . . . We are left with a confusion of vast hopes, immense disappointments, and fatal premonitions."

But he did not stop with these generalities: "I am not dealing with suppositions," he continued. "We have seen solemn treaties trodden underfoot; we have seen states, all states, failing to keep their promises, betraying their own signatures, offering their creditors the horror of naught as payment. And now we are confronted by a general crisis of values, a crisis allowing nothing to escape its grip be it in the economic, the moral, or the political order."—*Reported in Conferencia, for Feb. 15, 1933.*

"Economic Confusion"

In a recent number of *Le Monde Nouveau* is an article by deputy Emile Taudiere. In it, the writer studies the causes of the "economic confusion now cursing our world." After referring to the gigantic failure of the builders of Babel four thousand years ago, he makes the following statement: "The proud edifice we have reared higher and higher by a feverish and covetous activity has been struck by lightning. The effort of concerted humanity is broken to pieces and scattered by rivalry."

Then he asks the question, "What kind of new world will come out from this chaos? Most tragic in this connection is the fact that all



Bridge de la Concorde and Chamber of Deputies, Paris. The storm centre during recent riots

observers have a clear vision of the disaster toward which the world is rushing. . . . In the endeavour to remedy the situation, governments are accumulating legislative measures. International conferences succeed conferences. And all these vain efforts serve only to reveal the painful inability of well-minded men, who are unable to cure the evils of which our world is suffering. . . . Why? Because political reasons are opposed to desirable economic measures. What is the use of talking disarmament in a world in which acute nationalisms watch each other eagerly from behind armies all ready to march?"

Collapse of Disarmament

The most significant and ominous proof of the truthfulness of these statements is the collapse of the Disarmament Conference at Geneva, killed by congenital impotence and beforehand buried under a storm of denunciations. As early as the end of March, a keen observer of world politics, Victor Basch, professor at the Sorbonne, wrote: "Too many verbal pacts, too many illusive promises, too much credit given to signatures placed by certain powers on diplomatic documents. . . . What real assurances of peace have they given us? It is time, and high time, to denounce the vanity—not to say the hypocrisy—of these showy resolutions designed to throw a veil over the firm intentions of certain states to resort to force. Enough wool pulled over the eyes of the nations." "Never, perhaps, since the war, has the European situation been more confused, entangled, and obscure."—*La Volonte, March 24 and 26, 1933.*

On June 6, and again on August 20, a popular daily published in Paris, *L'Intransigeant*, after citing the fact that the principal nations of the world were all increasing their armaments, wrote editorially; "And yet, from time to time, all these states, builders of airships and cruisers, inventors of gases, canon manufacturers, and instructors of troops, send delegates to Geneva there gravely to discuss about disarmament." "The Geneva negotiators (*Turn to page 36*)

The Indispensable ONION

By E. E. Wagner

WHAT a wealth of appetizing piquancy would vanish from our tables if the onion were to come to it no more! As a relish, as a food and as a medicine, the onion is simply invaluable; yet no orator ever loses himself in rhetorical outbursts in honour of onions. The onion is certainly not associated with sentiment, poetry or romance, although many tears have been shed over it."

In a little dissertation on "Onions" from which the above is quoted, the world-renowned Australian author, F. W. Boreham, himself does something to supply the lack that he deplors in applauding the excellencies of the onion. "I am not surprised," he says, "that the Egyptians accorded to the onion divine honours and carved its image on their monuments."

From ancient history we know that the onion has been in use for thousands of years and has had a wider cultivation for culinary purposes than almost any other plant. It can be grown in tropical heat or the coolest temperate climate, which gives it a very wide range of usefulness. When fully matured it can be kept for long periods without spoiling.

The onion seems to have been especially associated with Egypt.

Of the Israelites in the wilderness we are told that they craved the highly seasoned foods to which they had been accustomed in Egypt. They remembered "the leeks, the onions and the garlic," and, as usually results from the habitual use of condiments and strongly flavoured foods, they had lost their taste for simpler food—the manna seemed insipid to them in contrast with the onions.

Unhappily for the Egyptians, we are told, "the onion became so sacred that it was no more possible for them to plant in it a sacrilegious tooth! But the Hebrew captives, unrestrained by such

scruples, greatly appreciated the onions because of their alimentary value." According to Herodotus, large sums of money (nine tons of gold) were spent in the purchase of onions for the slaves engaged in the building of the pyramids.

The craving for onions would seem to be a common concomitant of outdoor life and hard labour. On this Weir Mitchell, who was an enthusiastic camper, says that "there is always a row in camp when the onions give out, and the

new men often wonder at starting, why an old woodsman is so very particular about having plenty of onions, but in the wilderness and in armies onions are at a premium." He tells the story of having on one of his trips discovered a log cabin containing a whole family of sick people whom he treated gratuitously, refusing any pay for his services. But as he was leaving, the head of the household threw into his canoe a string of onions with the remark, "Them's what no man'll refuse."

Dr. Bethune is credited with the saying that "a good part of the value of wood life was in the fact that you crave onions and can eat them." In referring to the relief from dyspeptic troubles that results from camping out of doors, which rarely leaves a man much fault to find with the most

evil-disposed stomach, Weir Mitchell says that the former dyspeptic not only comfortably digests but actually craves onions. As a test for the absence of dyspepsia, he suggests that when a man can wind up a square meal of ordinary camp fare with "a big onion eaten raw with salt, he might be regarded as tolerably competent to compete with the proverbial ostrich."

The Onion Promotes Physical Endurance

Other instances of the sustaining and stimulating power of the onion in those exposed to great physical fatigue are on record. (Turn to page 35)

ONIONS IN VARIED GUISE

Onion On Toast

Take a large Spanish onion and slice it into a well-buttered dish, then put into oven and gently cook until partly done. Now lay some sliced tomatoes and grated cheese on top, season to taste, and return to oven and cook slowly until done. Serve on buttered toast.

Onions With Sauce

Boil 1 lb. of onions until done, then strain and place them in dish. Now boil 1 pint of milk; allow to cool a little, then add 2 ozs. of grated cheese, stirring this in until dissolved. Thicken with a little flour mixed with milk, then pour over onions and serve hot.

Curried Onions

Peel three or four Spanish onions and slightly score them so that they will stand upright in a pan. Add a piece of butter and stew until they are tender. Add one large spoonful of curry powder to the liquid mixed with a little milk, and boil up. Serve with a border of freshly-boiled rice.

Onion Cake.

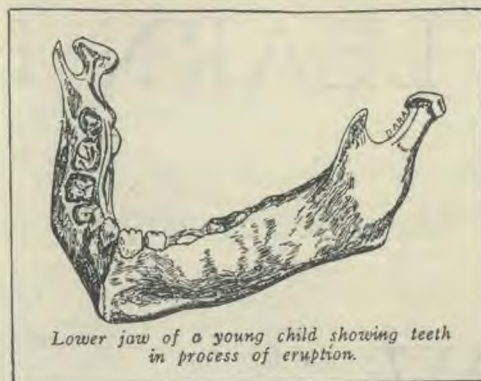
Boil the number of peeled onions required, allowing one for each person. Have a little short paste ready, and cut this into small squares. Put an onion into the centre of each square, and pinch the corners of the squares up. Bake until done, then serve with a little butter and season to taste.

Scalloped Onions.

Slice six large onions and, after placing them in water, boil them until tender. Now lay the slices of onion in a baking-dish, adding brown breadcrumbs, small nuts of butter, and a little seasoning between alternate layers. Let the last layer be of breadcrumbs. Cover with milk, and bake for about half an hour in a medium oven, then serve. —Margery Mackenna in "New Health," London.

How the Teeth Grow

By D. A. R. Aufranc, M.R.C.S., L.R.C.P.,
L.D.S., R.C.S.



Lower jaw of a young child showing teeth in process of eruption.

GOING back to the first traces of life we find the human organism to be developed from a single cell—the result of the union of two highly specialized cells. By multiplication and division of this cell we soon arrive at a stage where the cells are arranged in three distinct layers. From these three layers are developed all the structures of the complete human body. The enamel of the teeth is derived from the outer layer, or *epiblast*, while the dentine and cementum come from the middle layer, or *mesoblast*.

The first indication of the formation of the teeth occurs at a very early period, even before the bones are ossified and is traceable to about the seventh week of foetal life. A special disposition of the soft tissues occurs at the spot where a tooth is destined to develop and to this special grouping of cells the name *tooth germ* is given.

In this tooth germ two special sets of cells in time appear. These are the enamel and the dentine builders respectively. Each dentine and enamel cell furnishes a process, or fibre, continuous with itself, which serves as a matrix for the laying down of lime salts. As the cells deposit these salts, they recede, leaving behind the fully formed dental tissues.

Calcification of the Dental Tissues

In the case of dentine, calcification never reaches the centre of the process supplied by the cell, but this remains as a source of nutriment. Therefore, as we saw last month, dentine consists of a number of tubes cemented together, each tube containing a fibril from one of the dentine cells. This is most important as we shall see later when we study the question of dental decay.

It will thus be seen that the two sets of cells begin operations in close proximity and gradually recede from each other as the tooth is formed. As calcification advances, part of the dentine organ becomes shut in by the process, thus forming the future "pulp" or "nerve" of the tooth. After the tooth is completed, the dentine cells remain on the surface of the pulp but the enamel cells disappear. This is of extreme importance as it means that dentine can still be repaired, but enamel cannot.

The third dental tissue, cementum, is formed in the same manner as bone, which it will be recollected, it closely resembles in structure.

Eruption of the Teeth

When the crown of a tooth is formed, it is still encased in the bone of the jaw. Before it can function, it must travel a certain distance to

reach the mouth, perforating the bone of the jaw and the gum. The process by which this is accomplished is termed eruption.

The eruption of the teeth is far from being the simple process one might suppose. Indeed, being such a natural occurrence, it is doubtful whether many people ever pause to think why or how teeth do erupt. Many theories have been advanced to explain the mechanism of eruption, but none can be said to be thoroughly satisfactory, or to explain the many varied cases which one constantly meets in practice. When a tooth appears above the gum, the crown only is formed and the roots are added gradually during the following three or four years. As a rule, therefore, a tooth is not fully formed until at least three years after its eruption.

Too much emphasis cannot be laid on the fact that the teeth do not erupt into sockets already prepared for them. The sockets are moulded around the teeth. Hence where a tooth chances to get, there will the jaw be moulded around it. Upon the understanding of this fact depends our knowledge of the mechanism of teething and the treatment of irregularities. A slight obstruction, such as a small particle of bone, or even the constant tension of the lips and cheeks, will be quite sufficient to deflect a growing tooth and determine its future position.

The Second Set

In the case of the second, or permanent teeth, before they can replace the first teeth, the roots of the latter must be absorbed. This is accomplished by very large cells which lie in cup-shaped depressions on the roots of the milk teeth, which eventually they eat away. This process is not analogous to death or decay, as the second teeth when dead either remain in situ, or are cast off entire. Indeed, death of the first teeth greatly hinders the absorption of their roots and thus interferes with the eruption of the second set.

The teeth do not erupt all together but are cut in groups, the front teeth first, then the back ones, the jaw meanwhile increasing in length. This is really a wonderful provision of Nature's, for if all the teeth erupted together the back ones only would come into apposition and an open bite would result. (Turn to page 29)

LEARN HOW ^{to} ^{be} WELL

No. 4

The Physiology of Acid Alkaline Balance

By Julius Gilbert White

WE may learn the physiology of acid formation and its effects on body health, by briefly tracing the food we eat as it passes through all the changes from the time it enters the mouth, is digested in the stomach and small intestine, taken up by the blood and carried to every nook and corner to be used; and then note the final changes of metabolism which convert the nutrient through combustion with oxygen into heat and energy, and repairing materials, and leave the by-products of combustion, like smoke and ashes, to be carted away to get them out of the body and keep the life processes going. These by-products are comparable to the poisons left from burning gas or petrol.

The Lungs

After sugar, starch, fat, and protein are processed in the body, one of the residue by-products is carbonic acid gas which the blood carries back to the lungs to be exhaled. This acid gas makes the breath poisonous, and emphasises the necessity for good fresh air at all times, day and night, and also of good deep breathing habits and of good posture that deep breathing may be possible, and of doing nothing to hamper the lungs in their work.

About thirty quarts of this acid gas are exhaled per hour and if not promptly exhaled it will not take long for the person to accumulate enough of it to cause death. This is exactly what does happen to the pneumonia patient,—the lungs fill with fluid, beginning at the lower points, and as they gradually fill with fluid more and more the breathing capacity is less and less and the carbonic acid gas accumulates more and more until the patient dies of his own acid.

It is claimed that one-third of the body's poisons are disposed of through the lungs. This is why the Creator has given us lungs, and these processes of producing and eliminating these poisons are perfectly normal and were intended to be thus and no harm to the body is involved if the gas is promptly exhaled.

The True Foundation of India's Advancement

By Sir David Petrie

"Remember you cannot fool Nature in these matters. No fine speeches, no soft words will prevent her from exacting her toll in suffering and life from those who disobey her laws. And it is on precisely those who have a first claim on your protection—namely the mothers and young children—that the hand of death falls heaviest. Believe me, whatever may be decided in London, the foundations of India's advancement as a nation must ultimately rest on the robust health and physical well-being of her citizens as a body. Those foundations, I regret to have to say it, have hardly begun to be laid at the present time.

"I tell you then that here there is a task awaiting you of first class importance and of more than first class magnitude. Will you not come forward and play your part in it?—*At Annual Meeting of Indian Red Cross, Delhi.*

The Kidneys

The kidneys eliminate still another acid by-product called an *ash* which cannot be exhaled by the lungs. This is conveyed by the blood to the *kidneys* to be eliminated. An amount of blood equal to all the blood in the body goes through the kidneys every seven minutes to be purified.

Test of the urine acidity is a very good index to the acidity of the body, and is a useful test to be made frequently. Normal urine is slightly acid. It *may* be alkaline, but it is more likely to be acid, but it *may* be *very* acid. It may possibly

be twice as acid as the blood. When it is 100 times as acid as the blood it produces a burning sensation. This is a danger signal which must be heeded. It sometimes is found 1,000 times as acid as the blood.

The Perspiration

The perspiration is an excretion and eliminates more or less waste that is also *acid* unless very profuse. The larger part of the perspiration is water the evaporation of which is an important part of the cooling system of the body to let off some of the heat continually produced by combustion.

Each sweat gland is enclosed in a network of blood vessels which discharge into it some of its load of poison waste in a manner similar to the way the kidneys do.

About a *quart* a day of perspiration is thrown out of which we are not sensible. If it is more profuse it may be as much as a quart an hour.

It is very important that the skin be washed often to remove this waste as some of it may be absorbed into the body again.

You now understand that the body is *producing* acid by the processes which convert food into heat, energy, and tissue. Beside this, all body tissue is slowly wasting away and has to be replaced with new food. This waste is acid. Exercise also increases this wastage. Therefore *fatigue* is *partly* an increase of acidity, which means that we may become *rested* by reducing the excess acidity.

If we can increase either the alkalinity or the acidity of the body *at will* with foods we can help ourselves either to health or disease, to a state of restedness or weariness, according to our wish. That seems too good to be true, but I have already given the physiology of the way it operates, and I must tell you that *it works*.

Now you are ready for some real nuggets. If weariness is acidity, do you not see that the alkali food will help to rest us while an excess of acid foods will add to our weariness?

You will here recall that all meats are highly acid-forming, which adds to your tired feeling. Put with that another fact,—that all meats carry within them *their own* waste products of *fatigue*, as wastes were accumulating in *them* from their own life processes just as they are accumulating in the *human* body, so that they have to throw them off continually through kidneys, lungs, and perspiration or they would shortly die, and therefore when you eat a piece of meat you are adding the weariness of an animal to your own. I have made this so plain from physiology that *there is no escape*. How foolish it is to do that!

When we study foods in their relation to acid and alkaline values, it is necessary to understand what is meant by acid or alkaline foods. When food has been utilized by the body, if the end ash residue that is left in the body is acid that food is called "acid-forming," but if the ash residue is alkali it is called "base-forming." BOTH are needed, but the BASE forming should predominate on a ratio of four to one.

Please take note that all flesh-foods are high in potential acidity, and that they predominate in this list. If one wishes to reduce the acidity of the body here is a good place to begin. But when you do so, please also take note that cereals and bread-stuffs of all kinds, and eggs, are also acid-forming. Now let us consider the base-forming foods.

When we cut down meats to reduce our acids, we should not put more bread-stuffs or eggs in their place as these are all acid-forming.

If we want to reduce our acids we will have to

change over to the foods which are in the base-forming list,—the *fruits* and *vegetables*.

And we need not fear to do so, for it would be quite a correct and scientific thing to do. Think it through with me right now. Of what does the cow make her meat? Plenty of green stuff, and a small amount of grain. If she got a potato or carrot, or apple, or peanut, she could make them all into meat. She does not require eggs or meat of any kind in order to make meat. Therefore, you can make your own meat and skip the cow. Eat plenty of green stuff,—greens of every kind,—vegetables, fruits, some grains, a few beans and a few nuts, and you have perfect meat. These foods are the true "meat substitutes."

Dr. Sansum describes our feelings if we have developed the excessive acid side of life.

"The more common symptoms of the acid-ash type of acidosis are malaise, lassitude, nausea and later vomiting, loss of appetite, headaches, weakness, sleeplessness, muscle aches, acid mouth, sour stomach, acid urine, acid sweat, 'sour disposition', and, I believe, the blood vessel disease which is responsible for high blood pressure and such complications as partial blindness, heart disease, kidney disease, gangrene and apoplexy."

This helps you to see how serious this matter is, and possibly to learn the cause of some of your own afflictions.

On page 23 of our April issue we gave a Chart showing the very small fluctuation of the alkalinity of the blood that is compatible with life. Chemists fix the point 7 degrees as neutral. Normal blood is 7.35, or but .35 of a degree above neutral. A drop from this normal rate of but .13 of a degree, or from 7.35 to 7.22 means death. Most people die from "acidosis." There is great peril in doing anything to lower the alkalinity of the blood.

On page 32 of our April issue we published a very valuable Food Table, in which the common foods were listed, giving alkaline and acid reaction. This table should be preserved. A few copies of the April issue are still available. Price eight annas, including postage.

Formula for a Normal Daily Diet

By H. C. Menkel, M.D.

WE shall list in terms of definite foods the articles necessary in building a normal diet for each day. These comprehend the various food factors in the proportion which nutritional research has shown to be essential to life, growth, health and reproduction.

The selections are based on normal health requirements, with the recognition that in abnormal health there will need to be modifications accordingly.

The normally healthy person should have the following food articles to supply his daily food requirements dividing them into two or three meals as desired.

These foods should as far as possible not be too greatly altered from their natural state by over-cooking.

One half to one seer of milk;

One kind of fresh ripe uncooked seasonable fruit;

One kind of uncooked fresh green leafy vegetable;

Two water cooked, preferably steamed, green leafy vegetables;

One cooked tuber vegetable. Dal or nuts may be substituted.

One or two slices bread made of unsifted *ata* flour, or two chapatis of the same.

Usual serving of butter with bread.

In addition to the above, select one (and one serving only) of any one of the following complete protein foods according to individual preference or religious custom.

Curd of milk, cheese, eggs, [and for non-vegetarians] fish, fowl, meat.

Drinking water, an average of four glasses daily preferably between meals.

HEALTH

from

SUNSHINE

By A. E. Clark, M.D.

IT has been said, and truly so, that the most precious things in life are those which are free for the asking. And what might these most precious things be?

I have in mind three, to which others can be added: sunlight, air, and water. Who cannot secure these? And what price can purchase them if they are missing?

Long before man realized the value of sunlight, the plants were making use of the sun's rays to build up their structures. It is in only comparatively recent years that science has recognized in sunlight one of man's greatest benefactors. We find that only about twenty-five years ago did the use of sunlight as a curative agent begin to receive attention. Finsen, of Denmark, called the attention of the medical profession to the value of the light rays in the treatment of disease. Rollier in Switzerland advocated the use of the sun's rays in the treatment of disease, especially tuberculosis. From the work of these two men particularly has the importance of sun's rays as a remedial agent become known, and so today in every civilized country natural and artificial sunlight is being made use of in the practice of medicine and surgery.

The beneficial effects of sunlight are derived from two different sources, the heat rays and the light rays. Both of these are contained in the sun's spectrum, but each exerts a different action. We know that the plant kingdom requires warmth in order to grow, and this warmth is derived from the heat rays of the sun. In addition to the heat rays, plants require another form of energy which we term the ultra-violet rays. These rays are not visible to the eye, but are contained within the sun's spectrum, and exert their effect upon both the vegetable and the animal kingdom.

A great amount of experimental work has been done in the prevention of disease in chickens, etc. It has been found that by feeding young growing chicks with an impoverished diet and keeping them shut up in coops, they develop a disease quite similar if not identical with the disease known as rickets, a deficiency disease of babyhood and young childhood. The chicks become weak and unable to stand, fail to gain in weight, and ultimately die if the diet is not changed. But the strange thing is that these same chickens, if allowed to have free access to the sunlight, recover their strength, put on weight, and become as strong and vigorous as their fellows.

What do these experiments mean, and of

what value are they to us? Briefly, they mean that the ultra-violet rays of the sun are disease-preventing rays, and are essential to the life of all growing organisms, of which the human body is one member. Moreover, they mean that babies who rarely get the opportunity to be bathed in direct sunlight, but are allowed to have the sun's rays filtered to them through the windowpanes, are losing the beneficial effects of these rays. We know that growing babies require sunlight. We know that direct sunlight will prevent the development of rickets. We know that rickets can be cured by exposing the baby to the action of the sun's rays.

For growing babies, five minutes' exposure to the sunlight twice daily is an excellent practice. It has been found that daily exposure in this way increases the amount of phosphorus in the blood, and phosphorus is an essential element for growth. The amount of iron in the blood has been found to be increased after exposure to the sun's rays for a time.

Sunlight is death to germs. Few germs can withstand the sun's rays for one hour. Sunlight is also of great benefit in the treatment of tuberculosis. The same invisible ultra-violet rays are responsible for the cure of certain skin diseases, chronic leg ulcers, etc.

In the absence of natural sunlight, artificial sunlight can be utilized in the treatment of rickets and tuberculosis. There are certain types of electric lamps, particularly the quartz lamp, which produces a great quantity of ultra-violet rays. These lamps are extensively employed in the treatment and prevention of rickets and other deficiency diseases. They are also valuable in treating some forms of skin diseases. Such treatment should be under the direction of the doctor.

The Enema— Its Use and Abuse

By Louis A. Hansen

THE enema, or rectal injection, is a home treatment known to many, but often misused.

It should be borne in mind that there is danger of relying too much upon the enema habit. There are other measures of treatment for the relief of constipation which should be tried and which may be effective, and are preferable to a too frequent use of the enema. *Careful bowel training and proper diet are important essentials to be observed.* The hot enema is valuable for the relief of pain in the lower bowel, in diarrhoea, dysentery, for irritation and pain in the rectum, and in case of a large amount of gas in the bowels. The temperature may range from 103 deg. to 110 deg. F. The hot enema should be followed by a small injection of cool water in order to restore the tone of the bowel tissues.

The ordinary enema, given for cleansing purposes, ranges in temperature from 95 deg. to 100 deg. F. Either a hot or a cold enema is more effective for stimulating bowel (*Turn to page 32*)

The World's Greatest Liar

But One Is Mr. Al Cohol

(THE GREATEST IS THE DEVIL)

THE terms "narcotic" and "stimulant" are some times used interchangeably since their effect *appears* to be very similar. There is, however, a vast difference between a stimulant and a narcotic. What the one *does*, the other *appears* to do.

A stimulant is a whip. It spurs to greater activity the function of the body cells. Drugs that slow the rapidly fluttering and weak heart, making it contract more vigorously, are known as heart stimulants. Digitalis is the one usually employed for this purpose.

There are drugs which stimulate brain activity. Among these we may mention caffeine. The depleted brain cells when tired and exhausted and in need of rest and *building up*, may be *whipped up* by the use of caffeine. Habitually to make use of such a drug will cause serious injury to these cells. Caffein, however, is a stimulant and not a narcotic.

A narcotic is not a whip. For a very brief period, it is true, it may be termed stimulation. This is very temporary, and is speedily followed by its narcotic or deadening effect. Alcohol is a near relative to chloroform. The effects of chloroform and alcohol are similar. Chloroform is employed in surgery to produce anæsthesia. Alcohol may serve the same purpose. The man who is dead drunk is just as fit a subject for the surgeon's knife as is the one who is under the influence of chloroform. Both chloroform and alcohol produce in small doses a *partial* unconsciousness of one's actual condition, and in larger doses a *complete* unconsciousness.

The brain cells are the first to be brought under the influence of alcohol. *The apparent* mental brilliancy is due to this narcosis. The glib tongue of the one under the influence of alcohol, and the feeling of special fitness are evidences of partial brain paralysis. The sociability at the beer table finds its explanation here. Alcohol does not *stimulate* brain activity; it mars brain control. Under its influence words are spoken and deeds are committed that afterwards cause regret. It mars the judgment. For this reason railways refuse to employ those who use alcohol in any form. From a financial standpoint railway companies cannot afford to employ as engine drivers men who feel they must have even one glass of beer daily. There is too much at stake to employ a man who depends upon beer for his feeling of fitness. With this feeling of fitness comes



SHALL WE UNLEASH THE TIGER?

a willingness to dare and do, and yet at this stage of intoxication no user would admit that he was intoxicated. The user of alcohol, whether he takes it in the form of whisky or beer, is intoxicated long before he is willing to admit it or gives any evidence of it. His brain wobbles long before his legs wobble. If an engine driver is not safe at the throttle of an engine that runs on two rails, with all the safeties that are provided to safeguard trains, certainly it would be unsafe for him to direct a motor car in congested city traffic.

Intoxication has a finer meaning today than it had a half century ago. Prof. Yondell Hender-

By Daniel H. Kress, M.D.

son, teacher of applied psychology at Yale University, says: "We used to mean by alcoholic intoxication that a man was drunk when he could not walk straight or could not talk distinctly. *Since the introduction of the automobile, however, the definition must be changed to that which appreciably impairs the ability of a man or woman to drive an automobile with safety to himself and the general public.*"

There are degrees of intoxication. One drink of beer intoxicates. It does not intoxicate to the same extent that three or four glasses will, but that *one* drink is taken because it intoxicates, and for no other reason. Take alcohol out of that glass of beer and the demand for it is at an end. It is not beer the beer drinker craves. He craves the alcohol that is served in the beer.

Dr. Haven Emerson, former health commissioner of New York City, now professor of Columbia University, says: "Apply the test as you will to the distance, endurance, or speed of marching men, to athletes in competition, to the muscles of eye or hand, to acuteness of vision, to tenacity of memory, to accuracy of response to signals, to the taking of dictation, to the use of judgment or discrimination in psychological procedure, the result is the same—the use of alcohol even in amounts too small to be recognized by the persons concerned, consistently shows poorer performance."
(Turn to page 32)

The Divine Heart Specialist

By Edwin A. Wright

A BEAUTIFUL six-year-old child, after a fall, was seized with convulsions. Doctors were unable to effect a cure; specialists could not find a cause; ordinary diagnosis failed to reveal any obstruction or clot upon the brain. A great surgeon was called in. He undertook the work like a detective searching for clues. Noting that the contractions always began at exactly the same spot on the child's face, he prepared for an unusual operation.

He made a small opening near the rear of the skull, and then gently touched the brain over a gradually widening area with an electric needle. Each time the needle came in contact with the grey mass of nerve cells, a quick contraction of muscles resulted somewhere on the child's body. When this contraction took place at the exact spot where the fits began, the surgeon examined the interior of the skull near the spot at which the needle touched the brain. He found a bit of scar tissue. When it was removed, the patient made a complete recovery. But for the marvels of present-day surgery, the child would never have become normal again.

Limits of Surgery

Appropriately one might exclaim "What cannot be accomplished by modern surgery!" Yet even though a number of cases of surgery on the heart are on record, no physician has yet accomplished the feat of substituting a healthy heart for a diseased or an injured one.

Nevertheless, a person can have a new heart if he so desires, though not through human instrumentality. The Lord has declared, "A new heart also will I give you, and a new spirit will I put within you: and I will take away the stony heart out of your flesh, and I will give you an heart of flesh." Eze. 36: 26.

All through the Bible the heart is designated as the seat of the spiritual life.

In the sight of the Lord there are four different types of hearts: the hard heart, the divided heart, the broken heart, and the troubled heart.

The picture of the hard heart is well painted by the prophet Zechariah: "They refused to hearken, and pulled away the shoulder, and stopped their ears, that they should not hear. Yea, they made their hearts as an adamant stone, lest they should hear the law, and the words which the Lord of hosts hath sent in His spirit by the former prophets: therefore came a great wrath from the Lord of hosts." Zech. 7: 11, 12. What a fatal malady! It is even worse than the disease of the hardening of the arteries; the very heart itself which supplies the arteries with their life-giving fluid has become "as an adamant stone." Human surgery can do nothing for this hopeless case; the Master Surgeon must be summoned at once. He

"will take away the stony heart," and put in its place "an heart of flesh"—a tender, pliable heart susceptible to His fashioning.

"Wherefore then do ye harden your hearts, as the Egyptians and Pharaoh hardened their hearts?" 1 Sam. 6: 6. The Egyptians were not the only ones to harden their hearts, for we read that "all the house of Israel are impudent and hard-hearted," Ezek. 3: 7. The Apostle Paul admonishes us, "Today if ye will hear His voice, harden not your hearts." Heb. 3: 15. When Jesus was here on earth, He was kind, tender, and sympathetic to all. We must put away all hard-heartedness, and develop these same traits of character if we would please Him. Christ's remedy for the hard hearts is His giving of the "heart of flesh."

The Divided Heart

The second kind of heart is the divided heart. Even though this may be somewhat better than the hard heart, it is, nevertheless, displeasing to God. The words of the prophet Elijah, though written long years ago, are still very applicable today: "How long halt ye between two opinions? if the Lord be God, follow Him; but if Baal, then follow him." 1 Kings 18: 21. The people were in a state of indecision; Elijah did not want them to have a divided heart; he wanted them to serve either God or Baal with their whole heart.

In Ps. 12: 2, the sweet singer of Israel describes the divided, or double, heart: "They speak vanity everyone with his neighbour: with flattering lips and with a double heart do they speak." The men of the tribe of Zebulun "were not of double heart." 1 Chron. 12: 33. The Lord has promised, "I will give them an heart to know Me, that I am the Lord: and they shall be My people, and I will be their God; for they shall return unto Me with their whole heart." Jer. 24: 7. Then it is impossible to be a part of God's people without serving Him with the whole heart. "No man can serve two masters: for either he will hate the one, and love the other; or else he will hold to the one, and despise the other." Matt. 6: 24. Christ's remedy for this condition is to "seek Him with the whole heart." Ps. 119: 2. Again, in Col. 3: 22, it is expressed as "singleness of heart." The promise is: "Ye shall seek Me, and find Me, when ye shall search for Me with all your heart." Jer. 29: 13.

The Broken Heart

The third heart disease is that of the broken heart. The Lord is pleased to see the broken and contrite heart, devoid of self. Only then can He come into the heart to dwell. The prophet Isaiah paints a picture of the condition of the sinner: "Why should ye be stricken any more? ye will revolt more and more: the whole head is sick, and

the whole heart faint. From the sole of the foot even unto the head there is no soundness in it; but wounds, and bruises, and putrefying sores: they have not been closed, neither bound up, neither mollified with ointment." Isa. 1:5, 6. Such is the condition of the sinful, carnal heart. The broken heart needs to be "bound up," and "mollified with ointment." A part of Christ's work is to "heal the broken-hearted." Luke 4:18. How compassionate are these words! "He healeth the broken in heart, and bindeth up their wounds." Ps. 147:3. Christ's remedy for this type of heart is told in these words: "The Lord is nigh unto them that are of a broken heart; and saveth such as be of a contrite spirit." Ps. 34:18.

If we really try, can we not get rid of our sins? One spiritual writer of note has said: "It is impossible for us, of ourselves, to escape from the pit of sin in which we are sunken. Our hearts are evil, and we cannot change them." Jeremiah has said, "Can the Ethiopian change his skin, or the leopard his spots? then may ye also do good, that are accustomed to do evil." Jer. 13:23.

Is there a need of conversion? Christ said: "Except ye be converted, and become as little children, ye shall not enter into the kingdom of heaven." Matt. 18:3.

It is sometimes said in human surgery, "The case is too far gone; it is useless to attempt to do anything." But in spiritual surgery there is no case so desperate but that there is hope if we will come to the Great Physician. This picture, though painted in the old time, is still true: "Though your sins be as scarlet, they shall be as white as snow; though they be red like crimson; they shall be as wool."

The Troubled Heart

The fourth and last type of heart is that of the troubled one. David said, "Lord . . . Thou didst hide Thy face, and I was troubled." Ps. 30:7. Again he cried, "I am troubled; I am bowed down greatly; I go mourning all the day long." Ps. 38:6. Jesus says to the repentant heart today, "Peace be unto you," even as He said to His disciples long years ago. Listen to the Saviour's comforting words that He offers as a remedy for the troubled heart: "Peace I leave with you, My peace I give unto you." "Let not your heart be troubled: ye believe in God, believe also in Me. In My father's house are many mansions: if it were not so, I would have told you. I go to prepare a place for you. And if I go and prepare a place for you, I will come again, and receive you unto Myself, that where I am, there ye may be also." John 14:27, 1-3.

To summarise: the remedy for the hard heart is to receive the "heart of flesh" from our Saviour; for the divided heart, to return unto Him with the whole heart; for the broken heart, the assurance is, "He healeth the broken in heart, and bindeth up their wounds;" and for the troubled heart, "Peace I leave with you, My peace I give unto you." Let us go to this great physician, this spiritual surgeon, that by Him our hearts may be healed.

I Believe in JESUS

1. Because He changed my life

FOR many months I had been longing to know for myself the reality of divine things. I felt I could not be satisfied with a formal attendance at church and a mere profession of Christianity. I was often disturbed by the thought that possibly the Bible was not true. I was fearful on the other hand that if Christianity were true, then I was unworthy of acceptance by a Being so high and great as the Creator of the world, the Lord of heaven.

I don't really know what I hoped for, but one day I was reading in the sixth chapter of John and found the promise, "All that the Father giveth Me shall come to Me; and him that cometh to Me I will in no wise cast out."

Then I saw that Jesus spoke of Himself as the living bread which would give life to those who ate of it. My mind fastened on that wonderful declaration: "He that heareth My word, and believeth on Him that sent Me, hath everlasting life, and shall not come into condemnation; but is passed from death unto life."

I believed that word, and the Lord manifested Himself to me in a wonderful way. Every fear, doubt, and anxiety vanished as when one comes out of a tunnel and sees a beautiful sunlit landscape all around him.

2. Because the Bible revealed Him

Long before His birth, it was revealed that just such a Saviour and Life-giver should appear.

Genesis 3:15 made known that one of Eve's descendants should break the power of Satan over men.

It was revealed to Abraham that "God would provide a Lamb" as a sacrifice for the world.

Jacob saw, in the dream of a ladder from earth to heaven, that God would provide a Mediator who should bring man into union with heaven again.

Isaiah the prophet was shown One who would be "wounded for our transgressions" and bruised for our iniquities. He saw that this One should be born of a virgin, and that He should be born in Bethlehem. The prophecy of Daniel, in the vision of the seventy weeks (490 years), showed the time when He should appear.

Yes, all the prophecies of a coming Saviour were fulfilled in Jesus of Nazereth.

3. Because the prophecies He uttered have come true

He foretold that Jerusalem should be surrounded with armies—and it came to pass. He foretold the destruction of the temple—and the temple disappeared. He predicted wars, and famines, and pestilences; He (*Turn to page 23*)

THE MARCH OF TIME

TA MANCHU TIKUO

IT takes a mentally alert person to keep up with the changes in our changeful age. It was only the other day that the world thought it knew the name of that great province of China across the Great Wall, between Korea and Mongolia, famous in recent years for the millions who had immigrated from China, and as the home of the soya bean, which is rapidly spreading to all the world. It was just plain Manchuria. Then the Japanese entered the field and expelled young Marshal Chang Hueh-liang, and it became Manchukuo. Now Mr. Henry Pu-Yi, one time baby emperor at Peking, which has become Peiping, has been elevated to a throne as Emperor Kang Teh, and his empire is henceforth to be Ta Manchu Tikuo pronounced "Tah Man-joe Dei-kwoh," meaning Great Manchu Empire.

ACTIONARY Vs. REACTIONARY

THESE are the days for new things, new names and new policies, days of rapid change. It is a rather sorry time for conservatives of the old school, whatever may be their sphere in life. The generation that has now come on the stage of action is elbowing out the old crowd with its motto "*laissez-faire*"—"let nature take her course, everything must work out all right." Men have awakened to the fact that this "let it alone" policy has landed the world in a terrible mess.

In several different countries we have samples of different ways of changing the old order. One striking example of this "actionary" determination is found in the vigorous programme under the direction of President Roosevelt in America. Whether we agree with his policies or not, we cannot ignore them, and after all, his tremendous efforts are of great interest to the whole world. His first year in office has definitely challenged the "reactionaries," who, he claims, have well nigh ruined the country by their "holding back and obstructionist policy" in a new and changing age.

Young Men in the Saddle

One of the great things that President Roosevelt did was to summon to Washington a host of comparatively young men. He wanted action, and believed that only young men could carry out his "actionary" programme. Roosevelt's young men are in striking contrast with the politicians who are in the saddle in Britain at the present time, a number of whom are over seventy years of age.

One of the most striking developments is the multitude of measures introduced to meet the complex situation and to reach every phase of the national life that needs help and guidance. The agencies brought into existence in Washington are so numerous that they are designated by initials, with periods left out, by executive order. The British can hardly complain for they really started it with their DORA and their WAAC, during the war. The listing of these agencies requires every letter in the English alphabet from A to Z as initial letter excepting K, M, and Q. AAA, the "Agricultural Adjustment Administration" heads the list, to which group is assigned the solution of the problem of the farmer, the price of whose products had fallen more than that of any other group. It is the age-old problem of trying to give the producer who takes the most of the risk, and does the most of the work a better deal. As we run down the list USES brings up the rear, which means "United States Employment Service," organizing a national system of employment offices, to which anyone in need of employment is to apply (it has been suggested by some that the dole system is developing a generation that does not want to work), and if it is humanly possible to find work it will be found.

Between these two there come forty others, each one covering some specialized service, such as the BOB, "Bureau of the Budget," whose unpleasant duty is to be the "watchdog of the treasury" and who must see that none of the many millions is misspent; the CAB, "Customers Advisory Board," which is to watch the interest of the fellow on the other end of the string from the producer, the consumer, who also feels that he has had a raw deal in the way society has been constituted

hitherto; the FDIC or "Federal Deposit Insurance Corporation," which guarantees every bank deposit under \$2500; the HOLC, "Home Owners Loan Corporation," designed to keep the owners of homes up to \$14,000 from losing their homes through the foreclosure of mortgages; the NLB, "National Labour Board," one of the greatest plans ever devised to deal with strikes and labour troubles, itself holding out for a forty-hour week, has had to work overtime to try to keep up with the troubles that have come its way; the PWA or "Public Works Administration" assigned billions in cash and told to get busy in all parts of the country setting people to work on all sorts of construction work, slum clearance, roads, bridges, etc.; and most important of all, the NRA, "National Recovery Administration," whose multitude of "codes" reach into every industry that employs men, whether many or few, and "lays down the law" to employers as to hours and wages, and gives the workers the right to organize for their own protection; child labour was abolished at a stroke, and the sweatshop system ended. The "Blue Eagle" has become the sign under whose wings every thing to be done is to be carried forward. Any industry not displaying the Blue Eagle is to be boycotted with the most powerful boycott of history. The dynamic General Hugh S. Johnson, who handled the selective draft that put five million men into military service during the Great War, and marshalled behind them the industrial forces of the entire nation, is the man selected to put the programme across.

Can Democracy Find the Way?

We have mentioned but nine of President Roosevelt's forty-two administrative units, through which he intends to get immediate action. We think the word "actionary" a very apt one, expressing the heart of the great effort. It is after all similar to what Mussolini has tried to do in Italy, and Hitler in Germany. Ominous rumblings in France threaten to overthrow the old regime there; there are minor rumblings even in England, pointing in the same direction. The old, staid way must be abandoned and give way to the new way of action. The world is surely on the move somewhere. The greatest fears are felt in some quarters concerning Roosevelt's financial policy. But nothing too serious has happened yet—the main fear seems to be a rather vague one about what he is about to do. That must be left to the future.

Another interesting angle for journalists is that President Roosevelt believes in publicity. His press conferences are frequent. No President has ever before made use of the wireless as he does, often broadcasting his plans and policies over a nation-wide hook-up. He has written a second book with the title "On Our Way." At any rate the United States claims to be setting an example of the way in which a nation can remain true to the principles of democracy in a great crisis, in a world where some nations have repudiated democracy and have turned back to the autocracies of the Dark Ages. These are truly interesting days for the student of political economy.

YOUNGEST WAR LORD RETURNS TO FAR EAST

MARSHAL Chang Hueh-liang, China's youngest Marshal, the former military Governor of Manchuria, has been living quietly for about six months in one of London's smartest suburbs. The British journalists have honoured his request, "no publicity please," and there have been very few notices of his comings and goings. A polite request to the British Government through his own legation was granted, allowing him to visit Sandhurst, Aldershot, and other military training centres at will. He was expected to spend another six months in America, but recently returned posthaste to China. Some read a sinister meaning into his hurried return. Whether he will be friendly to Japan, as was his famous father, Marshal Chang Tsolin, in the early part of his career, or side with China proper, into whose national army his sixteen divisions have been absorbed, or even remain neutral, no one knows. His sudden return seems to mean something important.



Photos: Courtesy of H. E. Ormerod, Cement Marketing Co. of India

A Thousand Square Miles of India's Most Fertile Land in Bihar Threatened with Permanent Barrenness

A Government communique announced great areas under inert sand containing 70 per cent silica, thrown up by water geysers at the time of the earthquake. One man is said to have been swallowed up in a great fissure, only to be ejected by the flow of water later

WHERE THE BIHAR EARTHQUAKE WAS UNIQUE

THE Bihar earthquake is proving unique in a number of ways. We give herewith some photographs showing some of the great fissures in the earth which opened ejecting great geysers of water, inundating the country side. After the water subsided entire sections were found to be covered with inert sand, in many places to a considerable depth. Mr. H. N. Dutta of Motihari, reports another unique phenomenon in the *Times of India*. He tells of the springing up of ten wells in the Champaran District, each of which is a perfect circle, one being 150 ft. in diameter. All are of unknown depth, all soundings up to the present having failed to find bottom. The water from some of these wells spouted six to eight feet high. It is reported that the water has medicinal properties.

Earthquake shocks still persist in the area, some of them of considerable intensity. Model huts, houses, and even villages are being constructed, and the villagers are said to be copying them. One great fear at present is the uncertainty as to what will happen during the coming monsoon. The entire Gangetic plain, even as far as Delhi, is very flat, rising but a few feet above sea level. Extensive preparations are being made in providing boats and rafts, and in the training of rescue crews. One very interesting development is the amity and co-operation existing between all the different relief Committees. Indian and foreign, national and Government, Hindu, Moslem and Christian—all are working together in perfect harmony for the relief of those who are in such terrible distress.

27 BILLION TELEPHONE CALLS IN U.S.A.

TELEPHONE statisticians have completed a survey of the use of telephone and telegraph facilities throughout the world. The survey covers the year 1931, the latest period for which comparable figures are available. The study shows that, next to the United States, the country where the greatest number of telephone conversations take place is Japan. Canada holds third place, Germany fourth, Great Britain and Northern Ireland tie for fifth. The figures give 27,500,000,000 telephone conversations during 1931 for the United States, 3,326,133,000 for Japan, 2,565,641,000 for Canada, 2,376,000,000 for Germany, and 1,590,000,000 for Great Britain and Northern Ireland. Next come France and Switzer-

land with 847,206,900, and 842,000,000 telephone conversations respectively. They are followed by Poland, Spain, Denmark, Austria and the Netherlands.—*Scientific American*.

FORD AT THE WORLD'S FAIR

THE Chicago Century of Progress Exhibition opens again the first of May. There was such an extraordinary attendance last year that the Fair has been improved and expanded. One of the new features is the "Ford Exposition," a magnificent building in the heart of the fair grounds, which will portray the contributions that the industries, arts, and sciences have made to the motor-car industry. It will be 860 ft. long, and will be located on an eleven-acre plot fronting Lake Michigan.

AN ALL-WAVE DE LUXE RADIO RECEIVER

THE *Scientific American* is responsible for saying that the new Scott all-wave superheterodyne radio receiving set has the latest and most up-to-date features found in any receiving set, insuring the best possible reception under all conditions. This set will receive all transmissions, short or long wave-length, distant or near, without the necessity of making any troublesome changes. It is guaranteed for five years. The wave length bands are selected by means of a switch located on the front panel, the turning of which throws into the circuit the required set of coils. The user does not have to change plug-in coils as all the inductances are within the chassis and are controlled by the switch. The set covers wave bands from 15 to 550 metres with one knob operating onedial. No trimmer condensers or other balancing devices are used. The audio amplifier is designed to give practically undistorted or lineal output at any amplification. An automatic volume control, which functions in about 1/20 of a second, preserves the sound level regardless of variations in the strength of received signals. A specially designed low-pass filter circuit in the audio amplifier makes possible a great reduction in static interference, a highly desirable feature in distance reception.



A great earthquake fissure, with ejected sand, Bihar

Photo: H. E. Ormerod

THE DIVINE CALL

By A. S. Maxwell

FROM the earliest times it has been God's desire to have upon this earth a holy people—a people after His own heart, living in harmony with His laws and revealing to all mankind the exceeding riches of His grace.

In the beginning, when He created the world "to be inhabited" (Isa. 45:18) it was His purpose that every member of the human family should in loving obedience and unbroken fellowship enjoy every good gift that an infinite God could bestow. The entrance of sin thwarted that purpose. It became necessary for the security of the universe that this rebellion be permitted to work itself out. Thus only could be demonstrated to all God's infinite creation the folly and futility of sin and the justice of its ultimate destruction.

To this end the life of the race, forfeited almost at its beginning, was allowed to continue; and immediately the forces of good and evil ranged themselves for the long controversy to be waged around its destiny. The war that had broken out in heaven was transferred to earth, with succeeding generations of men the prize of the contending powers (See Rev. 12:7-9).

Through the ages that have elapsed since then evil has seemed to have the best of the battle. As the first family multiplied, instead of growing in grace and divine favour, it steadily degenerated until, so wicked did the world become, that God intervened and removed all but eight persons in the cataclysm of the flood.

Then the struggle began again. Noah's descendants soon became little better than those who had been overwhelmed in the deluge. Sin dragged the new nations down into all manner of abominations. Idolatry spread until almost all knowledge of the true God was lost. Vice and violence, bloodshed and oppression, ruled afresh; and the sad story of degeneracy has stained the pages of history to this day. The centuries of the past are littered with the wreckage of untold millions of ruined and wasted lives.

His Ideal for Israel

Yet through all the years there have been noble men and women who have loyally maintained their allegiance to the God of heaven, consistently keeping His commandments, faithfully fighting His battles against the hosts of evil. From generation to generation the torch of truth has been handed on and never has its light been suffered to go out.

Abraham was one such champion of righteousness, and God, delighting in him, proposed to make of him a great nation that should likewise witness for Him before the world. As Abraham's seed multiplied He led them, in His wisdom, into Egypt; then from Egypt through the wilderness to Sinai; and finally, after many vicissitudes, over Jordan to the promised land.

Through His servant Moses He made very plain to this people what He wanted them to be. At the beginning of their history He said to them:

"Thou art an holy people unto the Lord thy God, the Lord thy God hath chosen thee to be a special people unto Himself, above all people that are upon the face of the earth. The Lord did not set His love upon you, nor choose you, because ye were more in number than any people; for ye were the fewest of all people; but because the Lord loved you. . . . Thou shalt therefore keep the commandments, and the statutes, and the judgments, which I command thee this day, to do them." Deut. 7:6-11.

A marvellous opportunity opened out before this God-led people. For His special purpose He placed their capital city "in the centre of the nations, with the lands of the world around her." Ezek. 5:5 (Moffatt). If their witness for truth and righteousness should prove unblemished, nothing would be too good nor too great for Him to bestow upon them. Loyalty to God would mean their exaltation above all nations upon the face of the earth.

Their Dismal Failure

Alas, only failure followed. Once more sin spoiled God's gracious purposes. Among all this people there was never more than a small remnant that maintained, irreproachably, their allegiance to Him. Occasionally, under some godly king, there were sudden bursts of spiritual fervour on the part of the nation as a whole, but gradually declension became more and more rapid until, in the time of Isaiah, they deserved this awful censure:

"Ah sinful nation, a people laden with iniquity, a seed of evil-doers, children that are corrupters: they have forsaken the Lord, they have provoked the Holy One of Israel unto anger, they are gone away backward. . . . The whole head is sick, and the whole heart faint. From the sole of the foot even unto the head there is no soundness in it; but wounds, and bruises, and putrefying sores. Isa. 1:4-6.

Though God must have been sorely disappointed, His love for the people He had chosen was still unexhausted. With amazing long-suffering He said to them: "Come now, and let us reason together: . . . though your sins be as scarlet, they shall be as white as snow; though they be red like crimson, they shall be as wool. If ye be willing and obedient, ye shall eat the good of the land." Isa. 1:18, 19.

Later, through his prophet, He went still further, renewing His original offer to lift them up above all nations, despite all their miserable failures, if only they would turn again to Him and keep His commandments.

"If thou turn away thy foot from the Sabbath, from doing thy pleasure on My holy day; and

call the Sabbath a delight, the holy of the Lord, honourable; and shalt honour Him, not doing thine own ways, nor finding thine own pleasure, nor speaking thine own words: then shalt thou delight thyself in the Lord; and I will cause thee to ride upon the high places of the earth, and feed thee with the heritage of Jacob thy father: for the mouth of the Lord hath spoken it." Isa. 58: 13, 14.

Renewed Invitations and Final Rejection

Again, however, the gracious offer was scorned or neglected, and though renewed again and again by later prophets, the glorious opportunity so long held out was never seized. "And the Lord God of their fathers sent to them by His messengers, rising up betimes, and sending; because He had compassion on His people, and on His dwelling place; but they mocked the messengers of God, and despised His words, and misused His prophets, until the wrath of the Lord arose against His people, till there was no remedy." 2 Chron. 36: 15, 16

"Last of all He sent unto them His Son, saying, They will reverence My Son." Matt. 21:37. In a final, supreme effort to save His chosen people from utter ruin, to give them one last opportunity to fulfil His sublime purpose for them He came and dwelt among them in the Person of Jesus Christ. Had they accepted Him as their Lord and Master, had they as a nation repented of their sins and surrendered their lives to Him, the whole course of history would have been changed. The Jews, with Jesus at their head, would have become the mightiest spiritual force in the world. Innumerable blessings would have fallen upon their nation and through them upon all mankind. But it was not to be.

Though they professed to be looking for their Messiah, they did not recognize in Jesus the fulfilment of their hopes. Because His teachings did not harmonize with their ideas of kingship they thought He must be some impostor. So to crown their folly and ingratitude they crucified Him.

It was the last drop in the cup of their iniquity. Their national privilege of God's special witnesses was forfeited for ever. The sound of the hammer on the nails that pierced the hands and feet of the Saviour was the death-knell of the Jewish race as God's favoured people.

ance of the Sabbath being in existence so far back as the seventh century B.C., and the documents from which the accounts of the creation and the institution of the day of rest have been translated dating, in the opinion of the most eminent authorities, from about 2000 B.C., we are brought back to the days of Noah, who died, according to the common computation, in 1922 B.C. Thus we are carried back by the records and traditions of some of the oldest nations to the time of the Deluge."

The languages of other nations also prove the identity of the seventh day of ancient times with that of our present seventh (*Turn to page 19*)

The Seventh-day Sabbath in Ancient Nations

THE Edenic origin and universal obligation of the Sabbath is shown in the ancient languages and records of other nations separate from the Jews, and who did not, nor would not, on account of prejudice, receive it from the Jews. In fact, it is proved by nations which for unknown centuries have ceased its observance and have been worshippers of idols. They still retain the term "Sabbath," or its equivalent, as the name of the seventh day.

China, for instance, a nation which has been separated from others for untold generations, and whose records are very ancient, has, in what is called the "Book of Diagrams," a remarkable passage, which one eminent scholar translates thus:

"On the seventh day the passages are closed." A pupil of the celebrated Dr. Morrison says, in respect of the expression in the same book, "The ancient kings ordered that on that day (the seventh) the gate of the great road should be shut, and traders not permitted to pass, nor the princes to go and examine the states. It is plainly to be seen that in the times of the ancient kings, on the day of the Sabbath, all classes kept at rest and observed it."

The Assyrian tablets which have been unearthed in the past few years furnish some remarkable testimony. For instance, in the fifth tablet, from the library of King Asshur-bani-pal, we have a brief account of creation, in which are the following words:

"On the seventh day He appointed a holy day, And to cease from all business He commanded."

Now the date of this tablet is about 700 B.C., but Mr. George Smith, of whose eminence as an Assyriologist it would be impertinent to speak, says: "The present copies of the Chaldean account of creation were written during the reign of Asshur-bani-pal, 673-626 B.C. But they appear to be copies of much earlier accounts of creation; works the date of the composition of which was probably near 2000 B.C. (more than five hundred years before Moses). The legends, however, existed earlier than this, and were in form of oral teaching."—Trans. Soc. Bib. Archæol., vol. 4, p. 363.

"In 1869," says Mr. Smith in his "Assyrian Discoveries" (page 12), "I discovered among other things a curious religious calendar of the Assyrians, in which every month is divided into four weeks, and the seventh days, or Sabbaths, are marked out as days on which no work should be undertaken"

Mr. Boscawen found the very name Sabbath, under the Accadian form "Sabbattu," meaning "a day of rest for the heart." Says Mr. H. Fox Talbot: "The fifth tablet is very important, because it clearly affirms, in my opinion, that the origin of the Sabbath was coeval with creation. For let it be noted that, these traces of the observ-

(Continued foot of preceding column)

EDITORIAL



Belief in the Supernatural

MEN have tried in vain to eliminate the supernatural from nature. This may seem a strange statement to some. For they have learned by rote from text books, that reiterate until it is believed true, the teaching that nature operates according to certain inexorable mechanical laws. "There is" they say "no room for the supernatural." By erudite mockery they try to displace the faith of the "simple souls" who still believe in God, and Providence, in the soul of man, and in a future life from which all the ills and evils of this present life are to be absent. Superior disdain is the only mental attitude known to the modernist. Mencken in the preface to his latest book, "Treatise on the Gods" says that he goes through life laughing at everything in heaven and in earth, particularly in heaven.

But there lies deep seated in the heart of mankind a conviction that man is more than matter. In his inner being there is a principle planted by a wise Creator which causes man to reach out after a higher experience than the mere physical experiences which he holds in common with the animal creation below him. The religions of mankind testify to the prevalence of this conviction. Man is by nature religious. The ultra-educated man of today may with a sneer characterize all this reaching out after God as "silly superstition," but the fact remains that this hunger for God, and for holiness, and for something higher than the material, is deep-seated in the very constitution of the race. It alone is responsible for all that is best in human history. It refuses to be laughed out of court.

Those who know the healing touch of this high ideal calling them individually to a higher experience than the mere satiation of their physical natures, and whose spirits have had real communion with the "Father of the spirits of all flesh," refuse to either discount or abandon their belief in the supernatural. They recognize their bodies as beautiful structures, built by a personal God, who has endowed them with a spiritual nature, separating them in that measure from the entire animal creation. In this beautiful structure, they find, as their education proceeds along rational lines, that there are upper chambers of mind and heart as well as the basement of the physical nature. They learn with great satisfaction the joy of living in these upper chambers, rather than in the basement. Because their experiences in the upper chambers are so precious and so real, the mockery of the basement dwellers,

whose knowledge reaches no further than the physical, leaves them unmoved.

This is particularly true of those of every race and nation who have opened the doors of these upper chambers, and have invited the Lord Jesus to come in and abide with them. All the ribald laughter of the basement dwellers, and their pitiable air of superior wisdom, can never rob such of the actual daily experience of "supping with their heavenly Guest." They have heeded the invitation that every heart must hear sometime during lifetime. "Behold I stand at the [heart's] door and knock. If any man hear My voice and open the door, I will come in to him and sup with him, and he with Me." Such happy souls are among the "twice born." They have entered the "kingdom of heaven" through the door of the "birth from above" and live in an atmosphere of cheerful certainty wholly unknown to the basement dwellers, however learned or intellectual they may be. They believe in the supernatural not from theory or through abstract philosophy, but from actual experience.

In a current magazine, an educated gentleman who is evidently a basement dweller, in resenting such explanations as the one we have presented to our readers concerning the meaning of such natural phenomena as earthquakes, says: "Pseudo-scientists apparently educated, and holding responsible positions, are filling the papers with novel theories which are curious mixtures of mysticism and ill-digested scientific knowledge." We are not surprised at this reaction on the part of men who live only in the basement, and who view nature and nature's laws from that narrow horizon only. But again we ask, is their perspective the only perspective? Are they so "learned" after all, that they have the right to exclude all other beliefs but their own?

We boldly challenge this modernistic doctrine of physical causality. Man is more than mere "lumps of carbon and water." Dr. Fosdick of New York has expressed this Modernistic doctrine thus:

"In this universe the Milky Way is a tiny fragment. Within this fragment the solar system is an infinitesimal speck, of this speck our planet is only a microscopic dot. On this dot tiny lumps of impure carbon and water, called men, crawl about in a helpless maze for a few years, then dissolve into the carbon of which they are made."—*"Adventurous Religion," p. 84.*

According to this view, as another has said, "man and the whole universe are the accidental collocation of physical atoms; the spirit in man is just as much a chemico-mechanical product as

phosphorescence on the sea, and just as transient—we are but the casual results of heredity and environment, our lives as determined, and as mechanically controlled as a locomotive by its steam pressure and its directing rails. The machine age has produced a machine theory of life."

To those who think deeply, the ultimate end of such a theory of life is hopeless, pessimistic despair. But our "superior" scientific reasoners who believe in a mechanistic universe are not to be left in their smug complacency. In March and April we quoted from Sir James Jeans, a spokesman for the physicists, that the "sound, scientific reasons" so positively asserted were but a smoke-screen to cover their own ignorance of the "inner working of nature." Professor Bridgman of Harvard University, under the heading, "The New Vision of Science," in *Harper's Magazine*, March 1929, aptly describes how modern physics has destroyed this doctrine of physical causation, still so dear to the hearts of our geological scientists in India as they explain natural phenomena. He says:

"The revolution that now confronts us arises from the recent discovery of new facts, the only interpretation of which is that our conviction that nature is understandable and subject to law arose from the narrowness of our horizons, and that if we sufficiently extend our range we shall find that nature is intrinsically and in its elements neither understandable nor subject to law. . . ."

"The same situation confronts the physicist everywhere; wherever he penetrates to the atomic or electronic level in his analysis, he finds things acting in a way for which he never can assign a cause, and for which the concept of cause has no meaning. . . . This means nothing more or less than the law of cause and effect must be given up."

Thus the honest physicist confesses that he is a lost soul, lonely and helpless in a universe from which he has excluded God. He finds that deeper knowledge compels him to jettison much that scientists have written through weary years describing how by the law of evolution this universe was made. These weighty tomes are rapidly becoming discredited guesses. Prof. Bridgman continues:

"The physicist thus finds himself in a world from which the bottom has dropped clean out; as he penetrates deeper and deeper, it eludes him and fades away by the highly un-sportsmanlike device of just becoming meaningless. . . . What is more, the mere existence of this bound means that he must give up his most cherished convictions and faith. The world is not a world of reason, understandable by the intellect of many; but as we penetrate ever deeper, the very, law of cause and effect, which we had thought to be a formula to which we could force God Himself to subscribe, ceases to have meaning. The world is not intrinsically reasonable or understandable."

Poor, lost soul! We feel sorry for him, but his is a sample of the end to which every man will eventually arrive, who tries to bow God out of His universe, and who refuses to recognize what we call "natural law" as simply the ways of His working, "He who is God over all, blessed forever."

Unfortunately geology above all other "sciences" is still locked up by a *a priori* reasoning and illogical, if learned, guesses. No Jeans or Einstein has yet arisen to expose the fallacy of its cocksure pronouncements. Anyone who dares to believe that God works through nature, either in the creation of, or in the sustaining of His universe,

although "educated" are still "pseudo-scientists . . . with novel theories which are curious mixtures of mysticism and ill-digested modern scientific knowledge."

"Novel theories" is an expression that looks strange in the mouth of a man whose "theories" so elaborately expounded are really less than a century old, and which deeper knowledge may relegate within a decade to the scrap heap of discarded theories. We prefer the "old paths" which have stood the test of experience, and which will eventually triumph in the "new heavens and the new earth wherein dwelleth righteousness."

In a future issue we will discuss the intervention of the "supernatural" as manifested in a revelation to mankind, a revelation which transcends human knowledge. In this issue Mr. A. S. Maxwell of London, in "The Divine Call" page 16 discusses one phase of this subject.

The Seventh-day Sabbath in Ancient Nations

(Concluded from page 17)

day, or Saturday. The Rev. Wm. M. Jones, D.D., of London, England, a noted antiquarian, prepared, by great research, much expense, and indefatigable labour, "A Chart of the Week, Showing the Unchanged Order of the Days and the True Position of the Sabbath, as Proved by the Combined Testimony of Ancient and Modern Languages." This chart was finished in 1886. It gives in nine columns (1) the name of the language, when spoken, read, or otherwise used, (2) the name of the week, the cluster, or cycle, or seven days, (3-9) the names of each of the days in the original language, the transliteration and the translation into English in *one hundred and sixty* ancient and modern languages and dialects; and *one hundred and eight* of these languages know the seventh day by the name "Sabbath," or its equivalent, while the entire number bear testimony to the *identity and order* of the days of the ancient and modern week. The testimony in European languages was compiled by the noted linguist, Prince Louis Lucien Bonaparte.

We know of no more striking testimony than the above, and yet it is just what the lover of God's word should expect. Here are nations remote from each other, nations always subject to change, nations tenacious of even unimportant customs which have not changed except as necessity compelled for thousands of years, nations ancient and modern, Japhetic, Semitic, Hamitic, and yet their testimony is equally positive that the *order of the days of the week* is the same now as from the beginning of nations; that the seventh-day Sabbath came from God, and was once recognized by the earlier nations as such, and that it is now recognized by the majority of the great nations by name. What does it mean?—It means that the undersigned records and traditions of even non-Christian nations (thanks to the labours of a learned and faithful servant of God) confirm the word of God.



Entrance Gate, The Stanboroughs

The Gateway To Health

WE will make our first visit to different members of this chain of health institutions that belts the world to "The Stanboroughs," Watford, Herts, England. Standing in its own private park of more than one hundred acres, in the midst of Hertfordshire's choicest country side, only eighteen miles from London, close to the Watford By-Pass, on the Watford—St. Albans main road, the Stanboroughs hospitable gates open wide inviting us to enter and learn the true way to buoyant health. The scenery and the surroundings are most attractive. In the foreground stands the fine old estate of Munden Park; slightly to the left is Bricket Wood, and the Colne Valley—in short the very finest environment that old England can offer to those who wish to draw near to the heart of Nature for the soothing of tired nerves and for restoration to health.

Our first impression of this fine old estate and its sylvan surroundings dispels the picture that may have been in our minds that The Stanboroughs would be like the usual hospitals, just walls and wards and operating rooms, permeated by medicinal odours, and filled with those whose health is shattered. This restful place is nothing like that but rather a real "university of health"

The Pleasant Drawing Room



STANBOROUGH

HYDRO and

Watford,

A CHAIN OF HEALTH-BUILDING INSTITUTIONS

FROM time to time we will take our readers on brief visits to some of the great "universities of health" affiliated with the world-wide health movement represented by the *ORIENTAL WATCHMAN* AND *HERALD OF HEALTH*. This chain of health institutions and health magazines which now belts the world is rendering a most unique health service, not alone to the afflicted and the suffering, but also teaching how to be well and how to keep well. From its rise more than seventy years ago this health movement, advocating the rational treatment of disease and a simple mode of biologic living, coined a new word "sanitarium" (note the spelling). More than one hundred such institutions are now found scattered among the nations of earth. These health-building institutions are not privately owned, neither are they run for private profit, or for the benefit of shareholders. Whatever profit accrues is used in improving the service for the benefit of the patient.

where those who have been subject to business and social demands beyond their strength may find rest and recuperation. Those also who have lost their health will doubtless find in the midst of such surroundings the best way to regain it.

The Grounds

The restful, soothing hand of Nature touches us as soon as we enter the grounds. The Stanboroughs are adorned with a variety of beautiful trees, interspersed with evergreen shrubs, well-kept lawns, and flower beds. In the rear stretching back for a considerable distance are extensive gardens and orchards from which a rich variety of fresh vegetables and fruits are furnished in season. Well-kept pathways wind in and out among the fruit trees and flower beds; also spacious lawns with numerous handsomely planted trees—Wellington pines, cedars of Lebanon, copper beeches, and stately elms and oaks; while at a distance within the bounds of the private park are acres of dense woods, providing



THE STANBOROUGHS HEALTH HOME

Watford, England



Main Building, The Stanboroughs

INSTITUTIONS THAT BELT THE WORLD

and suffering humanity. An extension service is carried far and their four walls by about a dozen health journals, one of which is THE ORIENTAL WATCHMAN AND HERALD OF HEALTH. Our journals do not advocate mere theories or fads and fancies but present in a simple way the fruits of actual experiences worked out in this system of health-building institutions the world around. That our efforts to spread this health knowledge as far as possible are being appreciated is evidenced by the increase in our circulation, and the many testimonials of approbation constantly coming to us. We also give further attention to this health service in the form of popular lectures wherever there is a desire to hear. We are confident it will be of considerable interest to our readers to visit with us this month one of these famous "universities of health," located at Watford, Herts, England.

a pleasant retreat where one can listen to the songs of the birds, and enjoy the beauty of the wild flowers—all beckon us gladly, inviting jangling nerves and weary bodies to draw near to the heart of Nature for soothing and for healing.

The Main Building

We now arrive at the main building, four storeys in height. It is centrally heated throughout, provided with every convenience known to the modern world. The ground floor contains Foyer, Dining Room, Library, Writing and Recreation Rooms. On this floor are some private bedrooms each with private bath; also the Treatment Rooms, X-Ray Department and Laboratory. The spacious Drawing Room and Solarium are on the first floor.

As we enter the Foyer we sustain our first surprise. Instead of the hustling about of doctors and nurses and the smell of anaesthetics and medicines usual to a hospital and which have a specially unpleasant signifi-

cance to prospective surgical patients, we find a registration desk accompanied by all the appurtenances usually found in a first class hotel. In so far as anything we can see, excepting perhaps glimpses of the bright, cheery faces of nurses in uniform, we are simply registering in a first-class hotel—only we do note a quiet restfulness in the atmosphere, which indicates that after all this place must be different from either the ordinary hospital or hotel.

These first pleasant surprises are increased as we are shown to our room. It is tastefully and substantially furnished, well-lighted, well-heated, and well ventilated. We find simple arrangements by which we can communicate at any time with the office or with the attendants in the various departments. No effort has been spared to make these rooms pleasant, comfortable and hygienic. Beautiful views of the surrounding countryside spread like a panorama from the spacious windows. Electric lifts are at our service for taking us up and down between the first three floors.

Our favourable impressions deepen as we look about us. The pleasant Drawing Room with its easy chairs is most inviting, the spacious verandah on the ground and first floors, facing east and south, make it possible to enjoy the sunshine from sunrise to sunset, while the attractive Solarium furnishes facilities for sun baths, which are now recognized as one of the very helpful means to complete restoration of health.

It is essential that an institution which has

The Annexe, Where Prices Are Lower





Phototherapy—the new science of treating disease by light

for its object the recovery of health for its patrons should possess an environment which lifts the patient out of himself, where those who are nervous, weary, and worn with aches and pains, may find such restful surroundings, skilful nursing, and scientific treatment as shall most effectively co-operate with Nature in restoring to health. We are convinced that we have now found such a place.

The Staff

Our attention now turns to the staff. We find that the physicians on the staff are all fully qualified according to the law, with special training and qualifications for the methods of treatment in vogue here. There is also a friendly, sympathetic atmosphere surrounding the well-trained nurses that gives us confidence in them—an atmosphere far removed from the purely professional attitude sometimes encountered. This cheerful environment for which The Stanboroughs are noted is largely due to the fact that the nurses endeavour to put into practise the principles of Christian service enunciated by the Master.

Methods of Treatment

The methods employed here for treating disease command our respect. To begin with there is nothing superficial about our preliminary examination. Believing that a complete and accurate diagnosis is the foundation for success in the restoration to full health, these physicians leave no stone unturned to find out just what is the matter with us, and just what is the present status of the various organs of our system. If necessary this preliminary examination is followed up with thorough clinical and laboratory tests which will make the diagnosis as perfect as is humanly possible. The fees for all this service, even the most complicated, are listed in their printed schedule and are remarkably reasonable. It is a relief to know beforehand just what it is going to cost and not be faced with an unknown quantity that may be beyond our means.

After the proper diagnosis has been made, we find that first emphasis is properly placed on diet. Scientific dietary is most important in assisting Nature in her work of restoration. So the doctor calls first the trained dietitian, who will guide the patient to the correct dietary. Special study is given each case, for no two are alike, and there is personal supervision, providing just such foods as are suited to the individual condition. This is one of the most important helps in promoting rapid recovery.

Another pleasant surprise is that the main dependence or recovery here is not placed on drug medication. We are confronted with an array of methods of treatment whose effect depends on their power to assist Nature herself in throwing off disease and in restoring all the bodily functions to normal, healthful activity.

Hydrotherapy, or the use of water as a remedial agency, we learn is one of the most effectual agencies known to stimulate the vital activities necessary for the curative processes. It is a remedy that adapts itself to every pathological condition, and, simple as it appears, when applied scientifically, it proves remarkably efficacious. Unlike drug medication, which leaves its residue of poisonous material in the body, thus hindering normal activity, hydrotherapy obtains marvellous results by encouraging the natural processes through circulatory and nerve reaction. All kinds of hot and cold baths are administered; sitz bath, salt bath, alkline bath, hot and cold packs, salt glow, hot and cold douches, Scotch douche, massage douche, combined spray and shower, electric bath and Schnee bath. A special foam bath for the treatment of rheumatism

and nervous disorders has been installed and has proved effectual in treating these disorders. Special treatment is also provided for treating intestinal stasis and auto-intoxication.

Great strides have been made in recent years in "phototherapy;" the new science of treating



The Foam Bath—for nervous disorders. One of the many baths used in this famous Hydro



disease by light therapeutics. Every kind of mercury vapour quartz lights, of ultra-violet rays, and infra-red rays are administered in the physiotherapy department with splendid results, especially for neurasthenia, anæmia, low blood pressure and other similar conditions.

The Treatment Rooms are provided with the latest products of the electro-medical scientific world. High frequency, galvanism, faradism, and sinusoidal currents have a wide range of application and are in daily use. The X-ray department is equipped with the most up-to-date apparatus. Fluoroscope X-rays of the heart and lungs, and intestinal tract is included in every physical examination without extra charge.

All kinds of cases are accepted excepting mental cases and contagious diseases. The Laboratory is equipped with every facility for examination and diagnosis. A fully equipped surgical unit is devoted to patients requiring surgery. Every facility for the after care of surgical patients is provided. Large, light, airy rooms with a general homelike atmosphere, contribute much that is desired by those patients who dread the general hospital surroundings, thus providing a maximum amount of comfort during convalescence. A well equipped maternity department is also conducted, under qualified supervision. Physicians not on the staff may bring their patients to The Stanboroughs.

Our visit to The Stanboroughs has been most interesting. We have learned that the way to health is not through some mysterious maze of secret methods, nor is it hidden in some mystic concoction in a medicine bottle, but is found in strict adherence to the laws of biologic living ordained by a wise Creator for the governing of this delicate mechanism, the human body. Life's happiness is marred for those whose physical condition is not at its best. One should not wait until he is an invalid to seek rest and recuperation. Lowered vitality is the first warning signal. One should take stock of the physical condition and seek to return to par physically before the well nigh irretrievable collapse comes.

We learn that while The Stanboroughs are equipped and intended for patients requiring treatment, they are always glad to welcome guests (should accommodation be available) who may be attracted by the restful surroundings, wholesome diet, and cheerful environment. Social evenings, concerts, cinemetograph, lantern lectures and wireless programmes are a regular weekly feature of life at The Stanboroughs.

One feature that will appeal to many of our Indian readers is that the diet prescribed at this institution is the natural diet advocated in the pages of the *ORIENTAL WATCHMAN AND HERALD OF HEALTH*. Some have called it the "lacto-vegetarian" diet. All are welcome irrespective of race, or religion. We believe that the unique services offered by The Stanboroughs, will be more and more made use of by people from India as they become better known. See the advertisement on page 40.

A World-Wide Service

This institution is but one of more than a hundred rendering similar service around the world. The Skodsborg Badesanitarium is described on page 39. There are similar institutions in Germany and Switzerland, in North America, and in South America, in Australia and in China. In Simla last year the first unit of the Simla Sanitarium was opened, so that we in India may have the benefit of these same treatments without taking a long journey overseas. We have not written this article as a form of advertising, but in order to give a concrete example of the carrying out in practice of the principles advocated in our pages. These principles work marvellously. We feel certain that this description will prove of interest to our readers.

E.

I Believe In Jesus

(Concluded from page 13)

predicted persecution upon His followers. He told of the coming of false prophets and false christs. And it all came to pass.

He foretold the progress of His church—in spite of all obstacles in the way—and behold what a world-wide influence that church has had!

4. Because He is a living power in the lives of others today

I have travelled in many different countries and have noticed that when Jesus Christ is enshrined in the hearts of men there comes national, family, and individual blessing. Men and women who believe in Him cannot be bribed or threatened or forced into wrongdoing.

His power has curbed impatience and evil temper, has urged men on to higher physical, mental, and spiritual attainment.

And all this you will see yourself as you believe in the Lord Jesus. You will find that He can fill you with His own spirit so that your life will glow with a great loving purpose to bless mankind. You will find that He can bring swift help in times of financial difficulty. Prayer in His name will drive away evil spirits. His power will bring deliverance in time of danger. He will bless you in this life and open the way to immortality in the next. Yes! Jesus will do all this for you.

CHEAP SOURCE OF VITAMIN C

JUICE from the lowly turnip is now recommended as a good substitute for orange or tomato juice, says Dr. E. W. McHenry, of the University of Toronto School of Hygiene, in a report to the Canadian Medical Association Journal. Dr. McHenry says that in Toronto one cent will buy 100 vitamin C units from turnip juice, whereas the number of vitamin C units from lemon juice is 180, and from orange juice 220, and from tomato juice 170. Two pounds of ordinary turnips give 15 ounces of juice, which is said to be sweet and not unpalatable. Salt improves the flavour, but for infants the pure juice is advised. The juice may be easily made at home by grating a section of turnip and expressing the juice from the minced material in a linen or other cloth. — *Science Service*.

HEALTH SERVICE

BRAN AN EFFICIENT AND HARMLESS LAXATIVE

H. E. MAGEE, a nutrition expert of Teachers College, Columbia University, has been making a study of bran and has proved—

1. Bran is "definitely laxative to rats and humans."

2. Leached bran was found to be equally as laxative, but the ash was without effect.

3. "Prolonged ingestion of bran had no effect upon the histology of the intestine." That is, there was no evidence of abrasion, irritation, or other injury of the mucous lining of the intestine caused by long use of bran.

4. It was noted that when vitamin B was deficient in the diet, more bran was required to produce a laxative effect. This confirms the observations of McCarrison, who found that vitamin B produces a laxative effect by energizing the intestine. A yeast extract prepared in England called Marmite is highly recommended and is unusually rich in vitamin B. This yeast extract is now available in this country. We recommend it to our readers.

THE SOURCE OF THE RED BLOOD CORPUSCLES

THE blood constitutes about one-fourteenth of the body weight; that is, a man weighing one hundred and forty pounds has ten pounds of blood, containing about twenty-five million red blood cells, all of which die and are reproduced every thirty days or less, at the rate of about ten million cells per second.

The seat of this tremendous activity was sought in vain for many years, but in recent times the discovery has been made that the red marrow of the bones is the tissue which disposes of the dead red corpuscles and creates new ones to take their place. The red marrow is said to constitute about five per cent of the body weight.

The liver produces something essential to enable the cells to manufacture hemoglobin, the red colouring matter of the red blood cells, and to reproduce the cells at the rapid rate required to maintain the full complement of cells. When the liver fails to produce this substance in sufficient amount, the condition known as pernicious anæmia develops.

An extract prepared from the liver of a calf may take the place of the lacking element and thus cause the disappearance of many of the symptoms of the disease, although it does nothing for the removal of the original cause, which remains yet to be discovered.

The liver, spleen, and some other organs are concerned in the disposal and production of red cells, but this function is still incompletely understood.—*Dr. J. H. Kellogg.*

BRITISH ARMY TESTS CONDEMN TOBACCO

MAJOR T. F. KENNEDY, O. B. E., of the Royal Army Medical Corps, published in the *Journal of the Great Britain Royal Army Medical Corps* (1931), an account of tests made in the British Army for the purpose of determining the effect of smoking upon physical endurance.

The tests showed unmistakably the highly detrimental influence of nicotine in lessening the ability of man to endure severe muscular effort. The results of the tests agree with all other tests of this sort that have been made, both in Europe and America. We quote as follows:

"The figures given below are the result of observations stretching over nearly seven years, during which period approximately two thousand men have been tested. They are based on the result of the three-mile cross-country run held at the conclusion of each physical training Assistant-Instructors Long Course at Aldershot.

"The men are categorized into heavy smokers (twenty cigarettes, or equivalent, taken per day), moderate (anything under twenty cigarettes per day), and non-smokers.

"Number of men observed 1,973, in twenty tests.

Class of Smoker	Heavy	Moderate	Non-smoker	Total
Total in each class	167	1,461	345	1,973
In first 10 places	10	125	65	200
Percentage of each class in first 10 places	6.0	8.6	18.8	
In last 10 places	19	167	14	200
Percentage of each class in last 10 places	11.4	11.4	4.0	

"The figures show that the percentage of non-smokers getting placed in the first ten is three times that of the heavy smokers and, on the other hand, the percentage of non-smokers in the last ten places is approximately one-third of that of the heavy smokers.

"One criticism offered to these figures was that the N.C.O.'s at this school, being keen on physical culture, might be rather faddy about smoking, and thus give results which might not be true of a general army population. Observations were therefore carried out on one of the infantry brigades at Aldershot, the men being categorized in exactly the same manner as at the School of Physical Training. The results were the same.

"Observations are being carried out on the same lines on sprinters; the numbers observed are still too few for any reliable deductions to be made, but a point of interest that strikes one in the figures already available is that heavy smokers do not seem to suffer the same disadvantage as they do in the endurance test."



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knows the value of
QUAKER OATS



QUAKER OATS is just the food for developing the strong, healthy bodies and sinewy muscles so necessary for active participation in sport of any kind. It is a marvelously balanced food, nourishing bone, muscle, blood and nerves. It supplies vital energy and fosters general good health. Athletes, trainers, doctors, dietitians, all agree that Quaker Oats should be part of the daily diet of everyone. Whether you indulge in sports or not, you should eat Quaker Oats every day to keep feeling fit and healthy. Its flavour is delicious too.



LOOK FOR THE QUAKER FIGURE FOR GENUINE

Quaker Oats

Untouched by Human Hands

D-33

TESTED RECIPES FOR HEALTHFUL DISHES

Fruit Ices, Ice Cream, Sherbets

"Youth perpetual dwells in fountains,
Not in flasks, and casks, and cellars."

LEMON ICE

$\frac{1}{2}$ cup lemon or lime juice 1 cup water
Scant $\frac{1}{2}$ cup sugar

Boil the water and the sugar together for a few minutes, remove from the fire, add the lemon or lime juice, cool, strain, and freeze. In the freezer use about 3 parts of crushed ice to 1 part of salt, as too much salt makes a coarse-grained ice. The beaten white of an egg may be added after the ice is partly frozen, if desired, and then the freezing continued until the mixture is firm.

GRAPEFRUIT ICE

$\frac{2}{3}$ cup grapefruit juice 1 cup water
About $\frac{1}{2}$ cup sugar

Prepare and freeze the same as lemon ice.

STRAWBERRY ICE

1 box ripe strawberries Juice of 1 lemon or lime
Juice of 1 orange 1 cup sugar
1 cup water

Wash and stem the strawberries, and crush in a bowl with the sugar. Let stand one hour; then add the fruit juices and the water, and mix well. Strain and freeze the same as for lemon ice.

STRAWBERRY SHERBET

Prepare the fruit and the juices the same as for strawberry ice, and put directly into the freezer without straining. Freeze until partly stiff; then add the white of an egg, or a beaten whole egg, and continue to freeze until firm.

ORANGE ICE

1 cup orange juice 1 cup sugar
1 egg 2 cups water
2 tablespoons lemon or lime juice

Beat the egg slightly, add the rest of the ingredients, and freeze.

APRICOT ICE

1 cup stewed apricot pulp $\frac{1}{2}$ cup water
3 tablespoons lemon or lime juice Sugar to taste

Stew the apricots with enough sugar to sweeten. When cool, mash through a fine colander, add lemon or lime juice and water, and freeze. A little additional sugar may be required.

APRICOT SHERBET

Double the proportions in the above recipe, and when partly frozen, add the white of an egg, or a beaten whole egg, and continue to freeze until firm. When in season, use fresh apricots, pared, mashed fine, and sweetened to taste, in the place of the cooked fruit.

PEACH SHERBET

To 2 cups of peach pulp (preferably fresh) add the juice of 2 oranges and 1 lemon or lime, 1 scant

cup sugar, $\frac{1}{2}$ cup water, and one egg white or a beaten whole egg. Mix, and freeze the same as for apricot sherbet.

GRAPE SHERBET

2 cups grape juice $\frac{1}{3}$ cup sugar or honey
3 tablespoons lemon or lime juice 1 cup cream

Blend the juices and the sugar or honey, and turn into the freezer. When partly frozen, add the cream, and continue freezing until firm. 1 slightly beaten egg may be used in the place of the cream, when cream is unobtainable.

ICE CREAM No. 1

1 cup cream 1 cup milk
 $\frac{1}{4}$ teaspoon vanilla flavour

Use a minimum of sugar or honey for sweetening, and freeze the same as for sherbet.

ICE CREAM No. 2

2 cups hot milk 1 egg
1 tablespoon flour A sprinkle of salt
 $\frac{1}{3}$ cup sugar or honey 2 cups thin cream
1 teaspoon vanilla flavour

Mix the sugar and the flour together, add a sprinkle of salt and the egg slightly beaten, and blend well. Add the hot milk gradually, stirring as it is being added, and continue to stir over the fire until the egg is cooked, but do not boil. Remove from the fire, and let cool. Add the cold cream and the flavouring, strain, and freeze.—*"The Science of Food and Cookery," Anderson.*

MANGO FOOL

Stew green mangos, when done, strain and add one-third as much sugar as mango pulp. Bring to a boil and cook five minutes. When cold add cold, fresh, whole milk enough to make the drink about as thick as beaten up thick sour milk. Stir all the time you are adding the milk so as to form the fine curds. Serve cold.

Stewed apricots or peaches can be used as a drink with milk made the same as Mango Fool.—*"Healthful Diet in India," Menkel.*

PINEAPPLE PUNCH

Pare and chop finely one medium pineapple, add one sliced lemon or lime and about 2 quarts of hot (not boiling) water. Add the juice of three lemons or limes and sweeten with honey. Serve when cold.

A WONDERFUL THIRST QUENCHER

2 lemons, or limes 2 ounces brown sugar
4 ounces barley 1 quart boiling water

Wash the barley, then put it in a saucepan and just cover with cold water. Put the barley in a large jug. Rub off the yellow part of the lemon rind on to the sugar and add this to the barley. Pour over a quart of boiling water, stir to dissolve the sugar and leave till cold. Stir in the juice of the lemons, strain into glass jugs and use.

DURING ILLNESS AND CONVALESCENCE

THE accumulated experience of over half a century shows Horlick's to be an ideal diet during illness and convalescence.

Horlick's is made from fresh full-cream cow's milk combined with the nutritive extracts of wheat and malted barley. It contains no starch, and a certain proportion of its protein is available for direct assimilation. Its ease of digestion and assimilation, and its ready utilization in the body have been proved by actual physiological experiments.



Horlick's is pleasing to the palate, appetizing, refreshing and sustaining. It is easily prepared, and is especially useful where frequent, small, light, easily digested meals are indicated. Ordinarily, Horlick's requires mixing with water only; it is, however, an excellent medium for the addition of milk, cream, eggs or similar articles to the dietary.



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I WANT TO KNOW

A First Physiology for Children

By Oscar Reiss and Dorothy Walter Baruch

(Courtesy of Hygeia)

VII What Happens When You Move

JEAN and John and Jerry went out to the circus one day. They saw a strong man there. They stood and watched him lift a cow right up off the ground as easily as if the cow had been a dog.

People all around were exclaiming. "Isn't he strong though? . . . "What muscles!" . . . "Just see his muscles, will you?"

His muscles bulged. They stood out in knotty humps at his shoulders, on his arms and in his legs.

"Feel how hard the strong man's muscles are. Any one can come and feel them—hard as iron—hard as steel," called a man from the platform.



Jerry and John had to feel them.

"Hard as iron, hard as steel, hard, strong muscles," repeated the man on the platform.

When John was taking his bath that evening, he stood in front of the mirror.

He clenched his fists and lifted his arms, as he had seen the strong man do. And then he gave a grunt of disappointment. "Aw," he exclaimed, "I guess I haven't any muscles."

But that was foolish, because we all have muscles. It is true that not many persons have them as well developed and as hard as the strong man's, but we have them none the less.

The muscles are the parts of us that help us most when we move.

If you stand on one foot and stretch your leg up and then straighten and bend it, you may know that it is the muscles under the skin that pull the bones in your legs apart and together, apart and together for the muscles are attached to the bones, and they pull and stretch as the need is, to make us move.

Muscles can stretch and contract somewhat

as an elastic band does when you pull it and then let it snap back.

When you throw a ball, there are many muscles in your shoulder, back, chest, arm and hand all working to make the motion.

When you close your eyes and open them, there are delicate little muscles working to move your eyelids.

When you dig in the garden, pull up the window shade or comb your hair, there are muscles working. No matter how you move, as soon as you move there will be muscles working.

You can feel many of the muscles of your body, even though they are not lumpy and hard like the strong man's you can feel the flesh that stretches all over you under your skin. What you call flesh is really muscle. You can feel it along your arms and shoulders, across your chest

and stomach and back, across your lips and cheeks and neck, and most of all in your buttocks and legs where there are great, strong muscles that you use continuously in moving about.

You can make your muscles, which stretch all along under your skin, work for you at will. When you want to throw a ball, you make your muscles work to do it. When you want to raise the window shade or shut your eyes, again you make your muscles work. Because you can make them work at will in this way, these muscles are called voluntary muscles.

There are other muscles inside of you, however, that you can neither feel nor make work as you will. The heart, the stomach, the intestines and various other internal organs are made of such muscles. When the heart beats, the heart muscles move. When the stomach churns the food, the stomach muscles move. They work, not when we will them to, but whenever it is necessary for them to do so. For that reason they are called involuntary muscles.

The voluntary muscles, under the surface of our skin, can be developed and made stronger by exercising and using them. Swinging, running, skating, riding, swimming, walking, throwing, pushing and pulling—these and many other





forms of exercise strengthen our muscles.

When John heard this, he immediately made up his mind to develop his muscles right away, so that they would be bunchy and hard like those of the strong man.

"I'm going to exercise every single minute today," John decided.

So he started. First he walked around the block, and then he ran. He walked, and he ran, and he walked and ran, until he was bored with walking and running. Then he went to his swing. He swung and swung and swung until he was bored with swinging. Then he commenced turning somersaults and doing handstands but in the middle of the third handstand, he flopped right over. His muscles would not work!

"Goodness," he exclaimed, "here I've been exercising and exercising to make my muscles work better, and then they don't even work as well!"

He did not understand at all what was the matter until he found out that what really had happened was that he had grown so tired that his muscles could not work well. All he needed to make them work properly again was to rest, and after that not to exercise quite so long and hard at a stretch.

Being tired always keeps our muscles from working as well as they would otherwise work. If we stay up too late at night, we shall probably find that because we are tired we cannot do things as well. Or if we do something that is very unusual, like going up in an aeroplane, we shall probably find that the excitement tires us; and for a while, until we are again rested, we shall not do things as well.

Being hungry, too, keeps our muscles from working properly. Eating too little or eating the wrong kind of food weakens them. Failing to get rid of the undigested part of the food we eat also keeps our muscles from doing their work as they should. That is one reason why having bowel movement each day is so important.

John found out all these facts about muscles, and he also found out that strong men do not become strong in one day, in two days or in five weeks. Men become strong only through eating properly, resting properly and exercising sufficiently day after day, week after week, month after month, and year after year, the whole time that they are growing up.

How the Teeth Grow

(Continued from page 7)

The dates of the eruption of the milk teeth vary considerably, and we shall consider these in detail in a subsequent article, but as a general rule all the first teeth should be cut by the end of the second year. If teeth erupt very early or very late, it may be generally considered an unfavourable sign. Early erupted teeth are found in syphilitic children, in which occasionally they are cut before birth, and in tuberculous children. Late eruption indicates general feebleness, rickets, unfavourable hygienic surroundings, and sometimes mental weakness.

Taking all the above facts into consideration, it will be appreciated, to some extent at least, what an important part these building cells play in determining the future texture of our teeth. But like all labourers, they are largely dependent on material, and the quality of their products, naturally, is influenced by the building matter at their disposal.

(Next Month: "Building Healthy Teeth.")

THIS MIGHTY HOUR!

THE MESSAGE OF THESE
STIRRING TIMES

By

ARTHUR S. MAXWELL

European Correspondent
of the

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whose published works have enjoyed a
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Have you ever asked, Will war come again? Can the League keep the peace? Will disarmament plans succeed? What is developing in the East? Is world revolution near? Are earthquakes increasing? Why the twentieth century is a golden age of knowledge? Why crime abounds? Is Evolution fact or fiction? Will Rome rule again? Is the "end of the world" near?—If so you will find your answer in "THIS MIGHTY HOUR."

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Chronic Constipation: *Ques.*—"I am a great sufferer from constipation and as far as I can trace my complaint it is from my boyhood times. This I understand, and that recently it is due to partaking of solid food almost immediately after typhoid attack."

Ans.—Constipation is not in itself a disease but represents the result of certain existing causes. Your having eaten solid food after an attack of typhoid is not a sufficient cause. It is more likely that your present diet is of a constipating nature and needs correction.

If you have colitis or piles, or underfunctioning of the thyroid or adrenal glands, any of these may be a sufficient cause to produce constipation.



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The DOCTOR SAYS

This medical service by competent physicians is free to our subscribers.
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I would suggest that you go for one month on a diet consisting exclusively of milk (about one seer), fresh raw fruit and green leafy vegetables (both raw and cooked).

Limiting yourself to a diet of this kind for one month and eating plenty of the prescribed food should produce normal evacuations if your trouble is due to dietary causes.

Intestinal Gas; Colitis: *Ques.*—1. "What is the cause of intestinal gas? 2. Can colitis be cured?"

Ans.—1. "Intestinal gas may have any one of several different sources. It may be the result of fermentation taking place in the intestine, yeast or germs causing decomposition of sugar and other elements of the food, producing odourless carbon dioxide, malodorous sulphureted hydrogen and other offensive gases. Gases formed in the colon are generally of this sort. Gas accumulations in the stomach are sometimes the result of fermentation, but a more common cause of gaseous accumulations in the stomach is the swallowing of air. More or less air is usually swallowed in eating or drinking. Not infrequently the habit of swallowing air in large quantities is acquired. By executing the movement of inspiration while holding the glottis tightly closed, air is drawn into the stomach. A good means of overcoming the inclination to swallow air is to take several deep breaths in succession, holding the mouth widely open.

2. Yes, colitis is curable. When not advanced to the final stage of perforation or the development of malignant disease, colitis is practically always curable. The proper remedies are (a) suppression of intestinal putrefactions by change of the intestinal flora; (b) keeping the intestine clean by the use of laxative foods and cleansing enemas; (c) the application of heat as a vital stimulant, externally and internally—externally by means of fomentations, light applications and diathermy, and internally by means of hot irrigations, 105° to 112°.

Powdered Milk: *Ques.*—"Is powdered milk nourishing?"

Ans.—Yes, indeed, powdered milk is nourishing. Whole dried milk contains all the nutrients of milk, only the water being removed. Where good fresh or Pasteurized milk cannot easily be obtained, the powdered milk is especially valuable.

Meat Diet: *Ques.*—"Some people here urge the use of meat for making blood. Is it necessary?"

Ans.—The use of meat to increase one's blood is not logical. The protein of meat does not have any more effect on making blood than any other protein. The ordinary use of flesh foods tends rather to deplete the quality of blood, as flesh is an inferior food. To increase one's blood the fruits and vegetables are best. Spinach, egg yolk, asparagus, celery, and string beans, tomatoes, legumes, entire wheat, prunes, lettuce, carrots, onions, bananas, oranges, beet root, are especially rich in iron.

Overweight: *Ques.*—"I am overweight and still gaining. Has the thyroid gland anything to do with it?"

Ans.—Do not eat bread, potatoes, butter, cream, pies, or sugars of any kind. Take plenty of fresh fruits and bulky vegetables, with nothing between meals. Use skim milk, if any. Make an effort to get outdoor exercise every day. A sluggish thyroid would tend to make one put on weight, but the usual trouble is overeating. Have a doctor examine you, and determine if your thyroid is at fault.

he **SAID**

"Sorry, dear, I don't feel hungry."

but he **THOUGHT**

"Why can't we ever have fish that isn't soggy and greasy?"



ANY good cook could have told him. It's perfectly easy to make sure of crisp, appetising fish, cutlets, rissoles etc. by taking care of one point: the frying *must* be done at a really high temperature (about 450° is best) so that the food is browned and crisped *at once*, before any greasiness can get in.

Animal fats—ghee, butter, lard and dripping—burn before they get hot enough. Cocogem, a pure vegetable oil specially refined for cooking, is just right when a faint blue smoke begins to rise. At that point drop in whatever you are frying—and no chef could produce more delicious results. Cocogem is perfectly tasteless and does not

transmit other flavours, so it can be used again and again with great economy.

A fine shortening, too

A few minutes in the ice-box—and Cocogem is a perfect shortening: being tasteless, it can be generously used without giving a greasy flavour. And it not only helps to make sauces, mayonnaise, pillaus etc. extra delicious: the Vitamin D it contains increases their food value, too.

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The Enema—Its Use and Abuse

(Concluded from page 10)

action than is one of neutral temperature, but where a large amount of water is to be injected, the warm enema is used. The addition of two and one quarter teaspoonfuls of common salt to two pints of water will help to prevent griping. The addition of soapsuds makes an enema more effective for cleansing purposes. Use only pure soap. Frothy soapsuds contains air which should not be injected into the bowel. If soap is used, follow with an enema of plain water.

To facilitate the flow of water to the highest point possible in the bowel, let the patient assume the knee-chest position; that is, on the knees, with the chest nearly level with the knees. Another favourable position is lying on the left side with the knees well drawn up. The fountain syringe or enema can should be hung from two or three feet higher than the patient. If it is hung too high the flow of water will be too strong. The first tube length of water will be cool, and as there may be air in the tube, this should be run off before inserting the rectal tube.

Allow the water to flow gradually. It may be well to compress the rubber tube slightly. The desire to relieve the bowel because of the peristaltic pains caused by the injection of the water may be overcome by pinching the rubber tube and thus stopping the flow. In a moment or so the desire to evacuate will pass away, and more water can be injected. Thus a considerable quantity of water may be given to persons who consider themselves unable to retain more than a very small amount. The tube should be withdrawn carefully. If the water is to be retained for a time, the pressure of a towel against the anus will be helpful.

An important point that should be remembered is that the warm water in the bowel dissolves the retained mass of matter, and when in solution, especially if warm, the poisons are readily absorbed. Therefore a thorough cleansing of the bowel should be secured, otherwise the after-effects of an enema may be unpleasant, causing headache and other disagreeable symptoms. Repeated injections may be necessary in order to secure a thorough cleansing. Follow the warm enema with a small, cool enema at a temperature of 60 deg. or 75 deg. F.

The cool enema is valuable for reducing fever, and when given for this purpose, the water should be retained as long as possible, the temperature ranging from 70 deg. to 80 deg. F. If any colder, it will be more difficult to retain it because of the stimulating effect of the cold.

The World's Greatest Liar But One

(Continued from page 11)

The time was when alcohol was regarded by some as a heart stimulant. There is not a reputable physician today who would admit that alcohol stimulates heart action. Alcohol paralyzes and weakens heart action whether taken in large or in small doses.

Alcohol has in the past been relied upon by travellers to keep them warm when exposed to cold. This was found to be a mere delusion. It does not warm the body. While it produces a feeling of warmth, we now know that it actually lowers body temperature. The vasoconstrictor nerve centres constrict the capillaries when exposed to cold and prevent the blood being brought too freely to the skin to be chilled. Alcohol by paralyzing these centres causes capillary dilatation; it brings a large amount of blood to the surface and increases heat dissipation. Thus it lowers body temperature. Many a man has frozen to death in the past by depending upon alcohol under the supposition that it was really keeping him warm.

In sickness, alcohol produces a feeling of well-being. The patient who is suffering feels more comfortable under its influence. If nervous, he feels less so. It makes the sick man, as it does the one exposed to severe cold, unconscious of his actual condition. Alcohol pulls down nature's signals of danger. It makes the cold man feel warm, the sick man feel well, and the weak man feel strong for the same reason that it makes the poor man feel rich. It is a make-believe. "Who-soever is deceived thereby is not wise."

Alcohol is an enemy of spirituality and spiritual growth. The brain is the only medium through which divine truths can be received. It is the only avenue through which Heaven is able to communicate with man. Alcohol affects first

the most delicate and highly developed part of the brain. Even if taken in small amounts, it makes it more difficult to discern between right and wrong. The voice of conscience is dulled.

Wine led the sons of Aaron to offer strange fire before the Lord. (Leviticus 10:1-11.) These men were not dead drunk. They were able to officiate in the sacred office of the priesthood. They, no doubt, used wine in what would be termed moderation, but it made them unable to discern between the sacred and the common; between clean and the unclean. For this reason the priests were commanded for all time, "Do not drink wine nor strong drink" of any kind.

There is possibly today no greater enemy of the gospel of Christ than alcohol. The two are antagonistic. The beer saloon and Christ's church have always been opposites. They cannot dwell side by side. Alcohol has done more to neutralize the influence of the church and the gospel of Christ than has any other one agency. Taken from any and every standpoint, "wine is a mocker" and a deceiver.

Save Your Ears

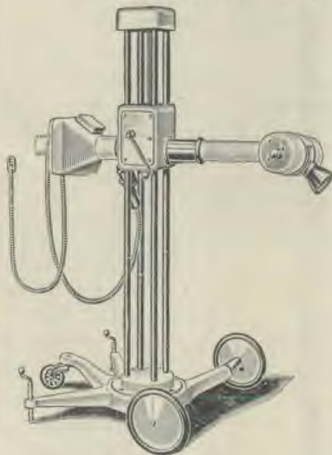
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Modern Motor Roads Across Central Asia

(Concluded from page 4)

to success. Many thanks for the very interesting commemorative stamps. Come and tell me about the trip when you get back. Franklin D. Roosevelt."

Dr. Hedin expressed to me his purpose to accept this cordial invitation from President Roosevelt, and his plan to spend a week-end at the White House upon his return from the heart of Asia. "I will have a thrilling story to tell the President when I get back," he said.

War-Torn China

Dr. Hedin is venturing upon his present expedition at a period of unusual unrest and great political uncertainty. The area to be traversed is disrupted by civil war, with scenes of desolation on every hand, finances and trade being in utter chaos, widespread massacres being carried out by revolting tribesmen, and racial animosities and widespread discontent leading to a situation fraught with dangerous possibilities. Well aware of the dangers he faces, Dr. Hedin, despite his sixty-eight years, enters upon his present task with all the buoyancy and exuberance of youth.

Accompanying Dr. Hedin on his present expedition are seven other members, three Swedish and four Chinese, appointed by the Chinese Government. They are as follows: Dr. Folke Bergman, geologist and surveyor; Dr. David Hummel, physician; Mr. K. George Soderbom, chief mechanical expert; Dr. Irving C. Yew, engineer of the Ministry of Railways; Mr. C. C. Kung, engineer; Mr. Parker C. Chen, astronomer and engineer; and Dr. Hwang Wen-pi, representative of the Ministry of Education appointed to make a survey of the educational possibilities in the regions to be traversed.

In addition to the above there will be another Swedish member, Mr. Charles Hill, who will go as chauffeur and mechanic to take the place of Don-gora, a Mongolian driver who was killed in an accident involving one of the cars at Kueihua, two Mongolian chauffeurs, Ceratte and Choncha; a Chinese cook and two servant boys, making a party of fourteen in all. Ceratte, Dr. Hedin pointed out, is a Mongolian who has accompanied him on previous journeys, and who received a gold medal from the king of Sweden in recognition of his unusual heroism displayed in the face of extreme danger.

The expedition plans to make a survey of the possibilities for irrigation and colonization in the now arid and sparsely populated districts of China's far northwest. The extreme fertility of these regions and their wonderful possibilities under irrigation are evidenced by crops produced in regions along the Peiping-Suiyuan Railway where irrigation has already been introduced. Never have I seen cabbages, kohlrabies, and similar vegetables of the size commonly appearing in these northern markets. Kohlrabies will average six to eight inches in diameter, and may weigh as much as fifteen to eighteen pounds each, while cabbages will run twelve to sixteen inches in diameter, and will weigh eight to ten or even twelve pounds per head. The grapes there produced are the best to be had anywhere in China.

Prospects of Northwest China

The general aspect of this great northwestern region of China is in many respects similar to America's great Northwest. But it is still in its early frontier period. It is above all a region of opportunity and promise, a land of tomorrow, a region in its present isolation beckoning to be opened to the opportunities of a new and awakened age. Its now trackless wastes are awaiting the construction of motor roads and railroads. Its now dry and barren plains are awaiting the coming of the sower and the reaper. The wandering nomads of its prairies are awaiting the introduction of schools and the comforts of civilization. Minds bedarkened by superstition and fear are awaiting the light Heaven, through its gospel, longs to impart to all the children of men. As America's erstwhile Western wilderness of a century ago has been transformed into a garden blossoming as a rose, so may these wilds of Central Asia yet respond with gracious and bounteous yields to the industry and care of man.



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The Indispensable Onion

(Continued from page 6)

"It is a well-known fact," says Sinclair, "that a Highlander, with a few raw onions and a crust of bread or some oat-cake in his pocket, can undergo almost incredible fatigue for two or three days together, without any other sort of food whatever. The French are fully aware of the quantity of nourishment this bulb affords; hence the soup *a l'oignon* is considered by them the best of all restoratives."

John Newton again in "The Return to Nature" says: "Those who have penetrated into Spain have probably witnessed to what a distance a Spanish attendant will accompany on foot a traveller's mule or carriage, not less than forty or fifty miles a day, raw onions and bread being his only fare."

The onion has been used as a remedy from time immemorial. It was regarded in antiquity as a diuretic of the first order. Dioscorides recommended it, and Pliny vaunted the efficacy of its juice in dropsy. In the British Flora Medica we read of the onion: "The juice is applied to burns, chilblains and bites or stings of insects."

Of garlic, a species of onion, Robert Bentley observes: "As a medicine it was held in great repute by the ancient physicians. It is stimulant, diaphoretic, expectorant, diuretic and tonic. In intermittent fevers it is a highly esteemed

remedy in India. A stimulant and stomachic in enfeebled digestion and flatulence, and expectorant in old chronic catarrhs."

Modern experiments have demonstrated that the onion is of value in stimulating the digestive juice. This effect may be partially due to the "appetite juices" engendered by its savoury qualities.

A French military physician, Dr. Melamet, during the World War treated the influenza patients at his hospital at St. Servan by giving them daily from the beginning of their illness the juice of pounded onions three times a day in a warm infusion. Under this treatment the fever abated in less than two days. Not one of the eighty patients so treated died. Only one who had refused the beverage was attacked with broncho-pneumonia.

White Onion Preferable to Red

The onion varies much in size, colour and pungency. The small dark red variety is the most pungent. In the Middle Ages, according to Dr. Henri Leclerc, a well-served table always offered a dish of red onions. The white onion is the mildest. Of the numerous varieties, the onions of Spain, Italy, Egypt, Bermuda, Mexico and California are especially noted for size and quality.

"I always bless God for making anything so strong as the onion," exclaimed the famous artist, craftsman and poet, William Morris. Because of the strong flavour of this small vegetable, a little

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of it goes a long way, especially in its raw state. But although used chiefly as a condiment for the seasoning of other dishes, the onion has considerable food value. It is a popular and healthful food. At the present time of economic stringency, we may well recall the advice of the classic French couplet, the sense of which may be roughly translated as follows: "If you lack chicken and spice, Bread and onion will suffice."

France Frightened

(Concluded from page 5)

would do well to go back to their own homes. A convention can be established only on good faith, and good faith seems to be especially lacking in all these discussions."

The French Situation

A word about the internal economic and political situation of France. France has been for some time passing through a financial crisis, which seems now to have reached its crucial point. The trouble is the seeming impossibility of balancing the budget without new taxes. The yearly running expenses, which have been growing "automatically" for several years, have now reached the sum of fifty billion francs, of which fourteen billion are for war purposes. Before the evident waste, squandering, and prodigality revealed by the daily press, the people are manifesting the stern determination to refuse any

increased taxation. How soon, and under what form, the impatience and irritation of the nation will make an outbreak, no one knows. "The coming of a dictator" is becoming a popular slogan; and this may be the natural outcome of some revolutionary period of untold suffering to the people.

The editor of a conservative magazine, M. F. Le Grix, describes in the following way the perplexity and distress of the legislators of all parties in the present plight: "Seeing the way of salvation, but not daring to jump over the fence of prejudices and false doctrines which obstruct their way, they are obliged to make laws which they know are neither operative nor 'plausible.' A worse distress is that of the nation of which all the sound thinking men have come to the conclusion that the present [Republican or Parliamentary] regime is unable to reform itself, and therefore lapsed. Yet, frightened by the necessity of introducing another regime [a king or a dictator], these men prefer to run the chance of seeing this cruel necessity disappear. 'If it be possible,' France seems to be moaning, 'let this cup pass from me.'"—*Revue Hebdomadaire, Aug. 5, 1933.*

From the current literature of other nations similar words could be culled. "Upon the earth distress of nations, with perplexity; . . . men's hearts failing them for fear, and for looking after those things which are coming on the earth,"—these words of Jesus, recorded in Luke 21:25, 26, are surely meeting their fulfilment today.



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FRUITS THAT ARE ALKALINE, NOT ACID

The question of acid or alkaline diet, which Mr. Julius G. White has been discussing last month and in this issue (see page 10) is of the utmost importance. There is one matter connected with the reaction of various foods, whether it is acid or alkaline, that is not generally understood. Because a fruit is distinctly acid in taste is not evidence that its reaction in the body is acid. That which determines this matter is the sort of ash that is left after the fruit is burned. It is in warmth or heat that the life-processes are carried forward. The citric and malic acid, for example, of lemons, limes, and oranges leave an alkaline ash and not an acid ash, after oxidation.

This was impressed on our mind very vividly when a doctor took all lemons and oranges from a patient friend of ours suffering from arthritis. Sherman's Food Tables which we published last month, show that pineapples, oranges, peaches, lemons, apricots, cherries, grapes, raisins, bananas, pears, tomatoes—all leave an alkaline ash, and do not increase the acidity of the blood. But prunes and plums are said to slightly increase the acidity of the urine, because of the forming of hippuric acid in the body, although even here the basic ash is alkaline. In July 1933 we published another most valuable table showing the reaction of almost all common foods. These tables are well worth careful study.

THE EDITOR'S CORNER

• We have a specially interesting table of contents for next month. To those whose subscriptions expire this month (Ceylon excepted) we enclose a postcard for renewal which only requires your signature and dropping in a post box. By special arrangement with the Post Office we ourselves pay the postage. Do not miss a copy.

• We hope our readers will not take the visit to "The Stanboroughs" on pages 20-23 in any way as a mere advertisement. It is really a confession of the faith that is in us. The ORIENTAL WATCHMAN AND HERALD OF HEALTH is but the extension work of the greatest health movement the world has ever seen. What you read in these pages has stood the test of experiment. In more than one hundred institutions in every land these principles are being hammered out on the anvil of experience. In our pages, as also in these institutions, great "universities of health" as they are called, the very latest and best in the medical science of the entire world is made available.

• In no branch of medical science has greater progress been made than in what is called "Physiotherapy" or "Phototherapy." We are surprised that so few doctors in India make use of the wonderful curative power that there is in light for certain types of disease. We call attention to the advertisement of Kaycee & Co., Ballard Estate, Bombay, on page 33. Write them for full particulars.

• The article on page 4 telling of the wonderful work of Dr. Hedin as he lays out two modern motor roads across Central Asia is of more than passing interest. Look at the map on page 4 and you will see the future storm centre of Asia. Manchukuo is now a settled fact. All the king's horses and all the king's men cannot now undo it. But Outer Mongolia and Central Asia are the grounds where the three great powers of Asia,—Japan, Russia and China,—are to meet and settle the question of supremacy. Already the storm clouds are gathering. The Kashgar troubles last year had more behind them than met the casual eye.

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