HEALTH CONTENTS, JUNE, 1937.

ESTD., JAN. 1923.

Health

A Journal Devoted to Healthful Living

Edited By Dr. U. Rama Rau & U. Krishna Rau, M.B.B.S.

Published in

ENGLISH, TAMIL, TELUGU AND CANARESE.

Annual Subscription for any edition Re. 1-8. Foreign Rs. 2. Post paid.

Editorial and Publishing Offices:—323, Thambu Chetty Street, George Town, Madras.

Vol. XV. | JUNE, 1937 | No. 6.

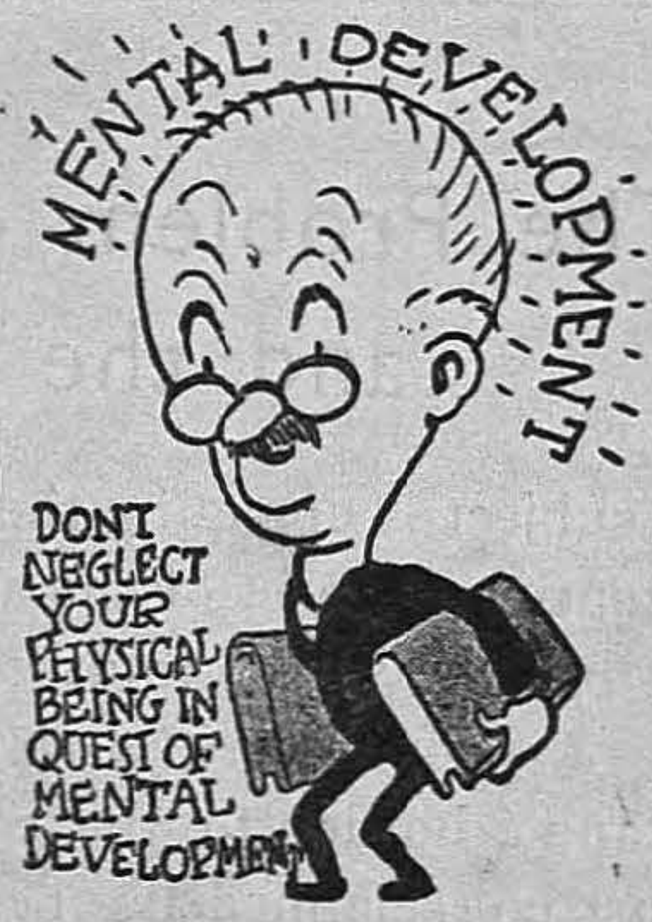
Editorial

The Problem of the Mentally Deficient and the Morally Delinquent

THIS subject is engaging the serious attention of most of the advanced nations of the world to-day. These classes of people are a danger to Society and a burden to the State and they must be reclaimed at all costs. In olden days, the mentally deficient or the insane were sent to hospitals designed for the purpose. They were called Lunatic Asylums or Insane Asylums or 'Crazy or bug houses'. The morally delinquent were sent to penal institutions or 'prisons'. Both prisons and insane asylums were custodial places and were more or less 'dungeons', where 'people were cast like living refuse and kept there at a minimum expense in the most degrading conditions until time or death released them either as living or dead corpse'. But all these conditions are changing now and we are living in a new era where, so far as the lunatics are concerned, punishment and discipline hitherto inflicted on these unfortunates, have been given the go-bye and treatment is the watchword These Lunatic Asylums have been converted into Mental Hospitals, so that there may be no more of that stigma that was originally attached to them. The prisons, however, continue to be the same old institutions, where revenge is still the watch-word. There are of course a few honourable exceptions, especially in the United States of America, where prisons are real places of correction and where

everything is done 'to improve the prisoners, so that some day this non-productive citizen will change into a productive one, who will not do damage to the good citizen but will help to make the community in which they both live a more prosperous and better one'. One of the measures adopted in these institutions to gain this end is to entertain the prisoners with a course of sweet music. Since the introduction of music in prisons in this country, it was discovered that music had become 'the most efficient disciplinarian and moral agent in prison management effecting at once that for which modern humane and sensible imprisonment is intended namely, the change of bad feelings into good ones, the transfer of streams of thought from negative and detrimental into positive and beneficial ones, the doing of friendly deeds rather than evil ones, the substitution of constructive habits for destructive ones'. Here is what one prisoner explained after two hours of a concert entertainment: "Hey, Mister, don't you think we are musical fellows? You know, we have just a few 'bad eggs' among us, but most of us are just darned fools, romantic chaps, who pay a heavy price for the nonsense stuff we pulled. But you know we have feelings too. The people on the outside forget that and we forget it too. But this music brought it out and back at least to me, and that was all right. But otherwise, life here is a lot of bunk". Will India ever attempt at introducing such humane and rational prison reform in her jails?

This new movement of redeeming and reclaiming the mentally defective and the morally delinquent has taken another momentous turn. In some countries, attempt is being made to weed them out, while yet young on their admission to schools, and treat them separately. At the first medical examination, mental defects are also noticed along with physical defects and those having mental defects are segregated and kept in a separate class. Enquiries relating to heredity, environments and the like are made and careful record of the progress is kept. In a paper read at the Health section of World Federation of Education Associations held at Denver in 1931, this aspect was specially stressed by some of the delegates. Miss. Maud A. Brown, Director, Co-operative Health Service, Kansas University, Kansas U. S. A. then observed:—"Mental Health and Physical Health are one. The fallacy of



Mental Health and Physical Health are one and indivisible—The one should not be developed at the expense of the other.

separating them in our effort and aims has suddenly been emphasized by the neurologists, who tell us now, that demonstrably learning is a matter of protoplasmic structure, that the same Health essentials of nutrition, rest and activity apply to the growth and development of brain cells as apply to muscle cells". According

to another authority, "Health is the condition that permits the individual to realise the fullest development and expression of his best self, render the best service of which he is capable and achieve the greatest happiness". So, the School programme must be so arranged as "to protect and improve the *physical, mental and emotional health of every child* and to preserve that most sacred thing to every child—his personality—and to allow him the fullest opportunity to develop his best self". In the matter of reclaiming the mentally deficient and the morally delinquent, experts generally take shelter under 'heredity' and give up many cases with a history of heredity behind, as hopeless. "They believe in the Omnipotence of heredity and jump at the conclusion that because Johnney's father is in the Penitentiary, it is unnecessary and a waste of effort to expect much of Johnney, physically, mentally, socially and emotionally". There are others again who believe that "heredity means nothing, that environment will accomplish everything and blame the teachers and the school for all the difficulties of children". There is, however, no room for despair. If only health education is imparted to children in all its phases, physical, mental, moral and spiritual, the dividend resulting from such health education to the State and the Society will, no doubt, be handsome.

In India, we are still in the embryonic stage in the matter of health education. The Medical Inspection of Schools, wherever it is done in this country, is done in a haphazard manner and in our own Presidency it was stopped as a measure of retrenchment some years ago. Will the Madras Government revive it soon and on new lines and thus prevent the enormous physical and mental breakdown among our children and the collossal waste of public money in having to maintain a large army of imbeciles and criminals—the heritage of age-long neglect?

Health and Disease*

By Rao Bahadur Dr. T. S. Tirumurti,
B.A., M.B., & C.M., D.T.M.H.
Professor of Pathology, Medical College, Madras.

HEALTH may be defined as the normal condition which tends to be maintained apart from any conscious effort to maintain it. This is a concise definition and rich in meaning. The use of the term 'maintain' is significant, as it conveys the suggestion that health is the expression of an active process.' The definition of Health as the unconscious life does not indicate a passive state of inaction but has in it that dynamic quality which is the essence of life's physiological activities. A mechanistic hypothesis is inadequate to account for the distinctive phenomena of life.

The healthy state is also called the Normal State. But the Normal is not a fixed state but is variable within certain limits. The Normal is the state, customary to a series of individuals, in which they perform their functions

*An Inaugural address delivered at the Health Association, Karaikudi.

easily and unconsciously and such a state constitutes Health.

In the cell, the organ or the individual any deviation from the normal is a pathological condition or disease. Disease may therefore be defined as an abnormality in structure, in function, or in both combined. It is doubtful whether alteration of functions can occur without some alteration in structure, but it frequently happens that functional disturbances are present, though no structural alterations are discovered even by the most precise methods of investigation.

In the case of life, the structure, including its mass and composition, is actively maintained in a particular manner, which is called the normal structure. The activity of the structure maintains the normality of the structure. Normal structure and normal activity are thus seen to be inseparable. The living organism has "to do in order to be".

Moreover the living organism has to be continuously active, if it is to maintain its existence. The organism never sleeps. Sleep has been truly defined as "the resting time of consciousness".

Another distinctive feature of the living organism is that it functions as a whole. The body cannot be regarded as a series of isolated systems and functions. The inadequacy of the conception of life as made up of independent functions has been proved by modern medicine. No system has an independent function. Life's reactions result from the collaboration of all organs and their mutually interdependent functions. The living organism functions as a whole

Just as a relationship exists between the internal organs and their functions in the maintenance of life, there is a relation of the living organism to its environment. Between the organism and its environment a constant active exchange is going on. The living body and its environment form an organic whole, the parts of which cannot be fully understood in separation from one another. The living organism is affected by every physical agency which acts on it. The temperature of the air, the moisture in it, atmospheric conditions, electrical states and disturbances, etc.—all these influence the reactions and functions of the organism.

Life has, therefore, been described as the constant successful struggle with the chemical and physical world, both within the organism and in the environment. How quickly the structure of the organism disintegrates when life departs from it! The living organism must necessarily be engaged in a ceaseless struggle in order to maintain its existence in the face of conditions, which when life is extinct would reduce the body of the organism to dust.

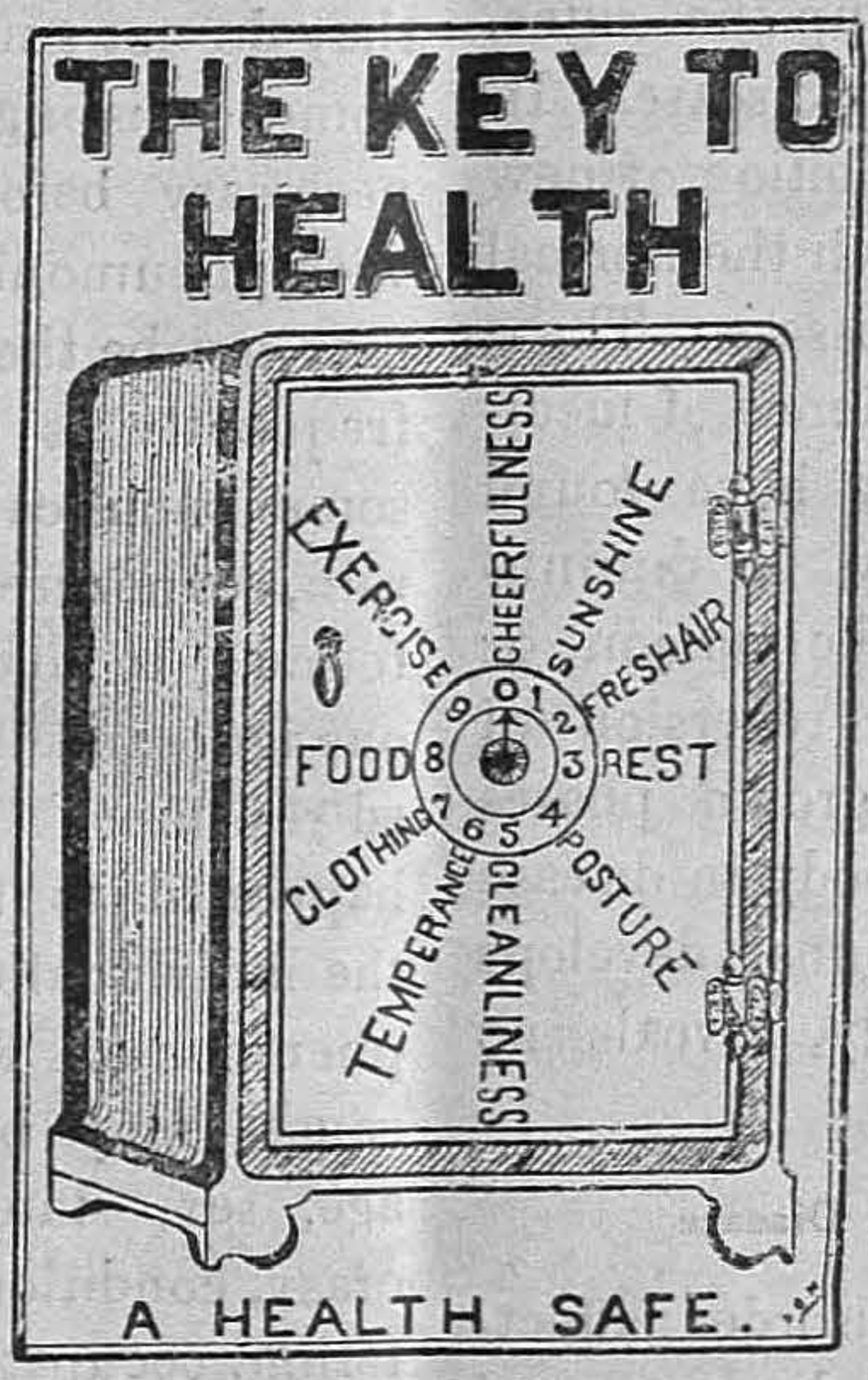
Such a purely biological view of life tends to provoke a somewhat pessimistic attitude to life. It is only by a study of the conscious activity or personality that we gain an adequate appreciation of the meaning of life as a whole.

The healthy body is one which is not only perfectly adjusted to its surroundings, but is capable of adjusting itself within reasonable limits to the circumstances of a rapidly changing environment. Disease therefore is a condition to which the body is fallen, in a lesser or greater degree, out of harmony with its surroundings.

In its milder forms it manifests

itself as only discomfort and inconvenience but in its graver forms life itself is endangered.

The primitive notion of disease was that of some evil spirit entering into the body, which has to be expelled from the body if possible by charms, exorcisms, incantations, prayers and the like. All of us know now that such a conception of disease is wrong. Disease occupies a large place amongst the adverse circumstances against which the struggle for existence has been carried on. "Of all the teeth in the terrible comb with which Nature sorts out the inefficient, disease is one of the most formidable."



Disease may arise from within, in the form of unfavourable morphological, physiological or chemical variations in the individual which have tended to weed out these unfortunate subjects in competition with others. More often diseases arise from without. Adverse climatic conditions, inadequate nutrition, wounds and injuries, and above all, invasion of the body by parasites of all kinds, especially by micro-organisms,—these are some of the troubles against which the body has to contend and in the face of which the weaker goes to the wall.

The human body, like other living organisms, has acquired its present form and its varied functions through gradual adaptation to its environment. The maintenance of the normal life of the body involves a normal mechanism and impulse to start with and a constant and successful adjustment to the conditions under which it is placed. The adaptive capacity of the body is in many ways so effective that it can maintain its normal structure and functions in spite of unusual surroundings and adverse influences. Thus, for example, the body can adapt itself, within certain limits of what we call health, to alterations, deficiencies or excess of nutrient material; to varying extremes of heat or cold; to states of atmospheric moisture and dryness; to electrical and atmospheric variations; to the action of animal and vegetable parasites which infect the body; to various poisons, both those introduced from outside the body and those which result from deranged metabolic activities. But, beyond certain rather ill-defined limits, the adaptive capacity cannot go and disease results.

The Character of Disease

The earlier conception of disease was that it was an entity, something foreign to the body which may enter from without—with which the body has to struggle and fight, and which it may expel from the body or by which it may sustain defeat. But this is a wrong view of disease. The idea is perpetuated by our traditional

forms of speech. For example, when we get a running from the nose, we say we have caught a cold. It should be remembered that disease is not a thing but a process. It is an abnormal activity of certain of the physiological functions of the body in response to an injury. This may or may not be associated with structural alterations in the body. So, disease manifests itself by functional alterations or structural changes or both.

These functional abnormalities or structural changes make up the signs, symptoms and lesions of disease. In disease, there is no exhibition of new functional capacities which the normal body does not already possess. Those who have made the science of medicine their special study have found that in disease there may be diminution or exaltation or perversion or abolition of functions or reversion of cells to earlier long out-grown phases of activity. "But the body in disease manifests no new functions, develops no new forms of energy, reveals no new capacities".

Other Definitions of Disease

Disease is a notable disorder affecting either the material disposition of the constituent parts of the living body or the exercise of their functions. Disease is an abnormal state of the living body, characterised by an alteration of structure or by a disturbance of function or both.

Classification of Disease

Diseases have been classified in many ways. The disease may be local or general; organic or functional; primary or secondary; congenital or acquired. The accident of birth has been used to classify acquired diseases into antenatal, postnatal and partu-

rient, according as the diseases are acquired before, after or during birth respectively.

Causes of Disease

The causes of disease may be divided into predisposing or indirect causes and exciting or direct causes. For example, many persons may show in the examination of smears obtained from their throats the presence of the micro-organism, which is the exciting cause of pneumonia. But, though they may be the carriers of the organism, they do not suffer from the infection. Some assisting cause appears to be necessary before the person falls ill with pneumonia. This assisting cause may not be the same in all cases and frequently is intangible. Very often some such cause, as a drench in the rain, exposure to cold etc. may be found. If no cause is found, we hide our ignorance behind the term 'lessened resistance'. Something must have happened to lower the resistance of the individual to make him fall ill with pneumonia. Among the predisposing causes may be mentioned heredity, age, sex, states of nutrition, idiosyncrasy, conditions of life, such as habitation, occupation etc. The exciting agents of disease may be classified into mechanical causes including "trauma"; physical causes; chemical causes; and bacterial causes.

I do not propose to describe to you to-day how these various causes bring about disease. I shall rest satisfied if I have made you interested in the study of the causes of disease with a view to prevent, if possible, those diseases which are of a preventable nature. It would equally interest you to know something regarding the defence mechanism of the human body. The members of your association will, I

hope, have the benefit of having these subjects dealt with by the doctors who have interested themselves in the work of your association.

Owing to short notice and the crowded programme of to-day, I am sorry I am forced to curtail my address to you. I thank you for the kind invitation and for the privilege of delivering to you this address.

Finger Exercise

—By Dr. Kartic Chunder Dutt—
L.M.S., M.R.A.S.,
Chief Medical Officer of Sonepur State, India

OUR readers will wonder why the exercise of the little things, *viz.*, fingers and toes, forms the topic of this article—whether it is because that the exercise of the big muscles of the chest, hands, and legs, has been discussed off and on and, therefore requires no further elucidation; or, because there is any particular need for exercise of the little muscles of the fingers and toes. Yes, the exercise of the nervo-muscular apparatus of the fingers and toes, is of utmost importance and should never be neglected.

This is because fingers are the parts of the body, which serve as bread-earners for a large percentage of men and women of culture, and, the toes for another group, that these little things are none the less important for proper exercise and development.

The utility of the fingers cannot be over-estimated for writers, typists, compositors, and for short-hand writers. If the nervo-muscular structures of the fingers are weak and ill-developed for want of proper exercise in due time, these writers can never achieve the maximum amount of dexterity attainable. On the other hand, a disease, named writer's cramp, may supervene when maximum amount of work is demanded from the weak limbs. It is therefore necessary that exercise of the fingers should have an important place in the schedule of systematic exercise, and, on no account should this be omitted or neglected.

For painters and artists, the fingers should attain especial delicacy of touch and manipulation. In paintings, in sculpture, in engravings, in drawings of all sorts on different kinds of material, the patient, artistic manoeuvre of the fingers produces wonderful pictures of fine arts. These attained a high degree of perfection in ancient India, Greece, and Rome. Modern India must take up a systematic exercise of fingers from young age when the fingers are more pliable, in order that India may again attain her old high place in works of art.

For players on musical instruments, a nicety of fingers must be attained before the players can establish a name and fame. *Mridanga*, and, other leather instruments of music, produce rhythmic solemn note by the delicate variations in the beat of fingers. These instruments must produce sweet notes, and keep time with song and dance. It is the artistic power of the fingers which enables the players to charm their audience. *Harmonium, piano, violin,, setar, sarangi, bina, esraj, jal-taranga* and other sound instruments

of music, demand a delicacy of fingers, unattainable by the majority of men and women, unless finger exercise is practised from childhood. Ancient India and Rome attained a perfection unparalleled in History. The melody and sweet tune of these sound instruments, may keep the hearers spell-bound— nay, may charm snakes even.

A dancing pose, where the Fingers and Toes play a conspicuous part.

The subtle flow of tune is really the play of the fingers and finger tips. The culture of music has again been

revived ; but, science has now stereotyped it in gramophones, megaphones, and talkies. However, both the Indian and Roman melodies are now learned by eminent musicians of India; thus, the field for culture has widened now, more than ever before.

The toes are the parts of the body especially concerned in dancing. The propensity of dancing is a spontaneous manifestation of the mind of man in every age and in every clime, which dates since the time when man lived in jungles and in nature. As time passed by, dancing has developed into an art, with natural differences, in different races and different ages. India has a record of high degree in the artistic development of the art of dancing. In dancing, the whole body dances gracefully with the accompanying music, but, the fingers and especially the toes are the parts that are most concerned in perfecting the charm. In modern age, dancers cultivate all varieties of the dancing art, both Indian and European. It is gratifying to find Indian teams like that of Udai Sanker and Kanakalata touring round the world, and, receiving laurels from all over the civilized world. Boys and girls should therefore properly exercise the fingers and toes, so as to fit them for artistic cultures.

For the medical men, the delicacy of the fingers in palpation is a guiding factor in the diagnosis of many diseases. For the surgeon and the midwife, the fingers are to be highly trained for diagnosis, manipulation and operation. For the ophthalmic surgeon, no nicety of the fingers is too much for the delicate operations on the eye. The eye is the most delicate organ of the human body. The fingers which operate on the eye should acquire superfine delicacy of touch and manoeuvre, in order to attain high degree of efficiency. This is attainable by proper training and exercise.

The art of magic owes its origin to Vanumati of Ancient India. The magicians by their finger trick throw dust into the eyes of thousands of spectators. This unparalleled dexterity of the fingers is acquired by practice and exercise of the fingers.

India was famous for her handicraft and works of fine arts, from time immemorial up to the end of the 17th century. Her works on knitting, embroidery, shawl making, gold lacing, etc., were the finest that human brain ever designed and human hand ever manufactured. From pre-Historic ages, India's marvellous productions attracted rich traders from Babylon, Egypt, Greece, and Rome. According to historian Murray,—"The cotton fabrics of India were the most beautiful that human art has anywhere produced. These were bought at the expense of the greatest toils and dangers by the merchants of Venice and Genoa and, latterly by those of Holland and Portugal". The Egyptian mummies in the Pyramids of Egypt, some four thousands of years ago, had been dressed in "Dacca muslin". The "morning dew" and other fine cotton fabrics were spun by Indian girls of high ranks, the papillae of whose fingers were developed to an unrivalled delicacy by practice and culture. In Lecky's "History of England in the Eighteenth Century", we find :—"At the end of the seventeenth century, great quantities of cheap and graceful Indian calicoes, muslins, and Chintzer, were imported into England, and, they found such favour that the woollen

[Page 109

and silk manufacturers were seriously alarmed. Acts of Parliament were accordingly passed in 1700 and 1721 absolutely prohibiting the use of any printed and dyed goods". India maintained her unrivalled position in superfine cotton fabrics until subdued by unfair competition. However, her fine art is again reviving.

Indian jewellery, with cuttings and settings of diamonds, rubies, pearls, emeralds and other precious stones, were world famous. These were endeared for their exquisite beauty by the most beautiful ladies, all over the world.

In these days of machinery, although the fine works of hand have to a large extent been substituted by machine-made things, still there is much need of development of fingers.

Telegraph signallers, and those who have to handle delicate instruments, have to cultivate nicety of fingers. Mechanics of the present day also have much need of finger exercise. It goes without challenge that the exercise of the fingers is never amiss. It has its utility in every sphere of art and culture. In sharp shooting, especially with magazines, rifles, the function and dexterity of the fingers are put to test.

Now, how to exercise the fingers? There are two important functions of the fingers. The first function is that of a nervo-muscular apparatus; the second is that of an organ of the sense of touch. Both these functions should be cultured by finger exercise. Both are necessary for performance of works of fine arts.

The exercises of the nervo-muscular apparatus of the fingers are performed thus. The fist should be closed with all the strength of the hand. This brings to exercise the flexor muscles. Then, the fist should be opened, and, the fingers stretched as widely as possible. The extensor muscles are put under exercise. All the small joints of the fingers are individually opened and closed. The flexor and extensor muscles and the small joints, are thus practically exercised. Then, the fingers should be separated from each other (abducted), and again brought in a close line (adducted). Again, the fingers should be brought together in pairs and separated in pairs. The joints of a pair should be flexed and extended. The fingers should be rapidly moved in all directions to acquire agility for them. The tips of the fingers should be brought together powerfully, so as to form a cone; and the tips of the fingers forming the cone, should be pressed powerfully together. Then the fingers should be separated, and stretched powerfully apart from each other. The fingers should be turned, and moved round about, as far as possible. The fingers should be moved forwards and backwards, one at a time. By these exercises, the nerves and muscles of the palm and fingers and thumb, will be put under exercise. These exercises will strengthen the muscles and joints of the fingers. These will also make them agile and enduring.

The fingers are tactile organs. The fingers are especially endowed with the sense of touch, especially in their tips where there are papillae. The delicate sense of touch is to be cultivated, in especial spheres of art. In all fine arts, the sense of touch is the guiding factor. The acuteness and delicacy of the sense of touch for a particular art or calling, is especially acquired

by practice, proper application, and, special training. Adam Smith, in his famous book "Wealth of Nations" refers to the art of pin-making. The fingers of the two hands, acquire especial delicacy of handling the pin, while being made. Otherwise, mass production of so small things as pins, would have been impossible. Similarly, there are a few families of blacksmiths in Burdwan and Dhaniakhali in Bengal, who are experts in making angling hooks. Their fingers are especially trained in the art of making angling hooks for the purpose of fish angling. In blind schools, the blind pupils are trained to cultivate the sense of touch by scientific methods. In addition to the tactile sense, fingers are endowed with muscular sense, and also, with the sense of heat and cold. These also should be improved by practice and exercise.

The thumb, the index finger, and the middle finger, are more important than the ring and little fingers. In holding the pen, the pencil, the brush, the swab, the knife, the scissors, the forceps, the tongs, chisel, hammer, the needle, the rifle, and, most of the instruments, and implements of art and science, the first three fingers are mostly employed. So also, in feeling the pulse, sounding the musical instruments, and performing other delicate functions, in which the tactile and muscular sense of the fingers are required, the first three fingers are mostly concerned.

It is therefore necessary that in the system of exercise of fingers, the thumb, the index and middle fingers, should receive especial attention.

In all finger exercises, the mind should be concentrated on the part under exercise at the time. It is by converging will force on the sensory and motor nervo-muscular structures of these organs, that, the full benefit of the exercise may be derived. It is then and then only, that the maximum amount of dexterity and delicacy may be infused into them. Distractions and absentmindedness will render the exercise quite unprofitable.

The last, though not the least in importance, is the fact that many systemic diseases, such as, gout and many more neurotic and paralytic diseases, have a predilection for the fingers and toes to begin from. Regular exercise of the fingers and toes may serve as a preventive measure and may keep these important organs free from this elective tendency of those diseases. Thus, stiffness of the fingers and toes, tremors of the fingers, and loss of sensation and motion in the fingers and toes and other disabilities, resulting from many diseases, may be averted by proper and regular exercise of the fingers and toes.

In conclusion, it may be definitely stated without fear of controversy, that, although machinery has to a large extent replaced human hand, yet, there is still sufficient demand in the domain of art and science for a set of nice active fingers.

Therefore, the exercise of the fingers and toes should form an important part of all systems of physical culture, and should never be neglected. It is by regular and systematic exercise of fingers and toes, that, India may hope to regain her lost position in art and industry among the congregation of nations.

Finger exercise may even now to a certain extent solve the food problem for the dying nation. No doubt, good, food, rich in proteins and carbo-

hydrates, fats and vitamins, milk and milk products, is of primary importance for the preservation of health. Recently, the problem of a well-balanced diet has been taken up in right earnest. 'The Health' has also published some learned articles on the subject. Finger Exercise approaches the solution of the same problem from a different point of view, *viz.*, the means to secure a well-balanced diet rich in nutritional value, in order to attain the common end, which is, the Health of the Nation.

— Minerals in Diet —

— By Dr. L. R. Fernandez, —
Trichinopoly

NOW-A-DAYS the layman hears so much of deficiency diseases resulting from the diminution or absence of certain kinds of vitamins in food, that I wonder if as much attention is paid to those deficiency diseases which are the result of mineral deficiencies in human diet.

Experiments performed both upon animals and human beings have proved that minerals like calcium, phosphorus, iodine, sulphur, magnesium, chlorine, potassium, sodium etc. are quite indispensable in the healthy building up of the human body, and their lack or deficiency definitely contributes to ill-health and disease.

The human body contains nearly 7 lbs. of mineral salts. About $\frac{5}{6}$ lbs. of these are in the bones, both long and short. All these minerals are derived from the food we take, and it is quite evident that they are very essential for the construction of the various tissues and organs of the body. Therefore, mineral constituents of the diet are regarded as foods necessary for the body and if their supply is entirely cut off, an otherwise sufficient food is not able to sustain life, and death is sure to occur in about a month's time. Hunger-strikers and those who fasted for political reasons (including Mahatma Gandhi) have supported their lives on minerals contained in fruits like oranges, grapes and apples alone for a number of days and weeks. Herein let us consider the various minerals found in the body. Calcium is one of the important constituents of the blood, bones and tissues. It plays also a part in the relation of nervous, muscular and glandular activities. If there is not sufficient amount of calcium in the body, certain diseases as rickets, carious teeth, osteomalacia etc,, develop. In such cases how shall we supply the deficiency? What are the foods rich in calcium? They are plenty *viz.*, milk, yolk of eggs, green vegetables, spinach, carrots, radishes, oranges and citrus fruits. Chiefly the pregnant women, lactating mothers

Eat vegetables for Mineral supply.

Page 112]

and the growing child require these articles containing a good amount of calcium salts.

Next, potassium is necessary for the construction of the cells, chiefly the red blood corpuscles and muscles. Vegetable foods like cabbage, cauliflower, drum sticks, ladies' finger are rich in potassium salts. Sodium required for the body is taken in the shape of common salt. Animal foods such as fish, mutton etc. are also abundant in sodium.

Another important mineral constituent of the body is iron. A large part of the iron in the body is mainly confined to the red blood corpuscles where it is combined in the haemoglobin. Deficiency of iron in the diet causes bloodlessness or anaemia where the skin is pale. So people suffering from anaemia will do well to take foods rich in iron. They are whole wheat bread, green vegetables, spinach and oranges.

A minimum amount of iodine in the food is necessary for health. In places where iodine is deficient in drinking water, a disease called goitre is caused. Foods rich in iodine are asparagus, sea fish, wheat; and people suffering from goitre improve considerably when they take these articles of diet.

Phosphates in the body are found chiefly in bones, brain and nerves. When there is insufficiency of phosphates in the constitution, diseases like neurasthenia, brain fatigue, loss of memory occur. Delay in the union of fractures also occurs when there is lack of phosphates and calcium. This deficiency of phosphates can be made up by taking ladies' finger, green leafy vegetables, potatoes, yolk of eggs and brain of the goats. Green vegetables and potatoes must be so prepared as not to throw away any water in which they have been cooked. This water contains much of nutrient mineral elements that are essential for the growth of the body and maintenance of health. Don't peel off the potatoes before boiling, as some do. In cooking rice, care must be taken not to throw away the water as it is very nourishing. Wheat and rice should be so prepared as to retain their mineral elements which are lost in the milling processes of making fine white flour and polished rice. Hand-pounded rice, as used 20 years ago, is the best for health.

Finally it is useful to remember that mineral metabolism is largely under the control of a group of glands like parathyroids, spleen, liver, kidneys, ovaries and testes as these have to do much with the general tone of the body. The functional lagging of these glands is an additional cause of mineral deficiency in the body. Wherever these glands are working below par, minerals are allowed to pass out of the body without being properly utilised. In this way mineral deficiency is produced. In such cases it is useful to take extracts of the involved glands in tablet form to supply the deficiency.

The Tubercular Problem

— By T. P. Tiwari, L.M.P., —

— Assistant Medical Officer, Dhamtari, C.P. —

THE menace of Tuberculosis despite its ever increasing tendency has yet to be seen by the poeple of our country in its true perspective. Thousands of Indian lives are being annually lost on account of this disease but no serious notice of the event seems to have yet been taken by us. Realization of the gravity of the situation has come only to a limited few amongst us, a vast population of the country being still blissfully ignorant of the danger that stares it in the face. This ignorance coupled with consequent disinterestedness in the subject on the part of our people constitutes the greatest obstacle in the path of those who have shouldered the burden of fight against the disease. No scheme to combat the evil can ever be expected to succeed so long as the masses do not contribute their individual quota to the struggle. Tuberculosis is neither a disease of seasonal prevalence nor has it a selective territorial distribution. It constitutes a country wide problem which is certainly not going to be solved by the establishment of a few sanatoria in this or that corner of this vast sub-continent. The only method to successfully tackle the problem consists of an intensive and extensive propaganda amongst the masses with a view to make them see the danger themselves. This alone will have the effect of creating in them a determination to fight the evil which is slowly but steadily undermining our national health. The following lines are written with a view to enumerate a few points which can form the basis of a country-wide propaganda in this direction.

1. Alcohol. 2. Closed window. 3. Overwork. 4. Crowded Sleeping room. 5. Smoke and Dust. 6. Mouth breathing due to adenoids.

The predisposing factors in Tuberculosis

Tuberculosis does not usually get implanted in the human system unless it is previously predisposed to such an implantation. This predisposition is brought about by factors which tend to reduce the vitality and resisting power against infection in an individual. Such factors are:—1. Debilitating diseases like Malaria, Whooping cough etc. These diseases lower the vitality considerbly and persons become more liable to be infected with Tuberculosis. 2. Insufficient and improper food. Maintenance of good health depends upon proper nourishment. Increasing poverty of the people has made it very

difficult for a large number of them to secure such nourishing articles of food as milk, butter, ghee etc. This deterioration in the quality of food has naturally resulted in under-nourishment and consequent susceptibility to tubercular infection. 3. Over-crowding and insanitary habits. The growing tendency on the part of our people to urbanisation has resulted in over-crowding in the cities. It is all the more so in industrial towns where large number of labourers live in small colonies. Quarters provided for them are scandalously insanitary. They are too small for the number of people made to live in them. There are no proper arrangements for ventilation and light and people themselves, for want of knowledge of sanitary laws, are dirty in their habits. Heaps of rubbish, house refuse and excreta are deposited near the dwelling. All these things collectively go a great way in devitalising the population which falls an easy victim to Tuberculosis. 4. Defective school hygiene and bad posture. With increasing demand for education, schools are being housed in all sorts of buildings without proper consideration of their suitability or otherwise for the purpose. No facilities for ventilation and good light are made and over-crowding of the boys is the rule. Desks and seats are either not provided, or if provided, are generally unsuitable. Boys have to assume a stooping posture which has the disadvantage of not only deforming the chest but also of retarding the circulation of blood and air. Tuberculosis after this is not a far off step. 5. Social malpractices, Child marriage and Purdah constitute the curse of Indian Society. Early commencement of sexual life and the resulting premature and repeated maternity are in themselves enough to sap the vitality of a girl. To this however is added in many cases the practice of Purdah. Result is nothing short of a complete physical wreckage.

Prevention of Tuberculosis

After going through the factors that favour the spread of Tuberculosis, it is not difficult for one to realise that the question of Tubercular prophylaxis is essentially a socio-economic one. The preventive measures may be dealt with under the following heads.

General Measures

(1) *Avoid over-crowding*—Selfishness of the industrialist is largely responsible for over-crowding in the labour colonies in cities and towns. Attempts should be made to make these people more generous towards the labourers by providing for them suitable dwelling places built on hygienic principles. Labourers should also be taught to lead a sanitary life. Radio can furnish a substantial help in this direction.

(2) *Fresh air and exercise.*—Importance of fresh air for good health can never be over-emphasized. One should try to remain as much out of doors as possible. It is a good practice to go out of the town or village in the early hours of morning and draw plenty of air inside the lungs by deep inspirations. Windows of the sleeping room must always remain open. One should not adopt the habit of sleeping with mouth covered. Air should always be breathed in and out through nose. Exercise is a physical necessity. It strengthens the body and invigorates the mind. Plenty of fresh air is taken during exercise resulting in increased purification of blood. Exercise should always be taken in the open. Bath

some time after an exercise is beneficial.

(3) *Good food.*—One should try to get a good nourishing food for one's self, keeping in mind however that over-eating is also bad. Milk, ghee, fresh fruits and green vegetables are valuable articles of food. Fish, meat and eggs are also beneficial and may be taken if there is no objection to their use. Vegetarians must take at least half a seer of milk every day.

(4) *Attention to school hygiene.*—School buildings must have good light and ventilation. Seating arrangement must be such as will prevent a stooping posture. Correct posture is very important. Body should be kept straight. Head should be held up with chin drawn in. Periodical examination of the boys by a medical man must always be insisted upon. Boys found unhealthy during such examinations should be suitably dealt with.

(5) *Social reform.*—Ceaseless propaganda against child marriage and purdah must be carried on. These practices are very largely responsible for the deterioration of our mass health and attempts must be made in right earnest to bring about an early eradication of these evils.

(6) *Establishment of sanatoria*—With a view to ensure isolation of tubercular patients and to give them proper scientific treatment, sanatoria must be opened in larger numbers in the country.

(7) *Avoid contact with a tubercular patient.*—(*a*) He discharges millions of bacteria in the air through his mouth nose and through his sputum. A contact with such person means inhalation of these germs and danger of catching the disease.

(*b*) Utensils and other articles of personal use of a tubercular patient must be kept separate and must on no account be used by others.

(*c*) Avoid as far as possible inhalation of dust. It may contain dried particles of sputum rich in tubercular germs.

(8) *Protect your food from flies.*—Flies are carriers of a large number of diseases, Tuberculosis included.

(9) *Other precautionary measures:*

(*a*) He must always cough or sneeze in a handkerchief which can be burnt or boiled later on.

(*b*) He must always spit in a receptacle which should have a suitable quantity of a germicidal solution.

(*c*) He must never kiss or fondle children. He should try to keep himself isolated.

(*d*) He should not marry. If married, he should avoid sexual contact.

(*e*) He should as far as possible remain in open taking due precautions to protect himself from exposure and draughts.

(*f*) A tubercular mother should not nurse her child.

Reference :—

Causes and Prevention of Tuberculosis—Mehta.

Stop Catching Cold

By. Dr. S. K. Gupta, B.D.Sc., B.O. (Cal).

— Surgeon Dentist, Durga Charan Road, —

Ambala Cantt.

IT is not necessary that people should catch cold only in the cold weather, but in point of fact, it would be found, that as many persons are afflicted with cold, in the summer, as in the winter.

The excessive state of heat induced by sport, physical exercise, or any other form of effort during the hot weather, renders one far more susceptible to chills than does the ordinary cold of the winter months. Those of my young readers who have experienced this will be ready to endorse this statement.

My contention is that there is no reason whatever why the normally healthy person should ever catch cold, summer or winter, provided that common sense and the right preventives are used. By preventives I do not mean drugs, but the right use of one of the natural functions of the body—breathing.

Breathing exercises have been known and practised since long, but perhaps it is because they are so well known that they are so often neglected. Deep breathing is frequently advocated, but unless it is carried out in the right and scientific manner, it is likely to do more harm than good. It is far more important to concentrate on the correct *manner* of breathing than on the *place* where the exercise is performed.

In deep breathing, when we are concerned with ejecting from our system the germs which are a misery to ourselves and a menace to others, it is exhaling which is of vital importance.

It is much more difficult to exhale fully than to inhale, to the same extent and it may be even a little painful. After a deep breath, begin to exhale slowly-the more slowly, the better, and do not be tempted to give until the last vestige of air has been expelled from the lips.

That is the first point to bear in mind if you would render yourself immune from colds ; the lungs must be completely emptied at the end of each breathing excercise.

The next and the last point is this. There are certain parts of the lungs to which the air we breathe ordinarily scarcely even penetrates in such a rarified form as to be of little value as a cleansing agent. And these parts—of which the apex is one—are the favourite resting places of disease germs. It is, therefore, of utmost importance that we should find a means of forcing the air into these cavities. It can be done simply, in two stages.

Take a deep breath, filling the chest with air and expand it freely. Then while holding the breath in, gradually contract the chest walls, using your hands to assist if you wish, until the air is forced down and back. Work the ribs in and out a few minutes expanding and contracting them in turn, and then exhale fully.

The second stage is similar, though it is applied to the abdomen instead of the chest.

Again take a deep breath, this time filling the abdomen and forcing it out

as you breathe in. When fully extended, with your breath held in, press it downward as far as possible with your hands holding them horizontally until the air is forced up and back. Move it up and down a few times, and then exhale fully.

Each of these exercises should be done three or four times in the morning. Be sure to take a full breath for each movement, and then to expel every vestige at the end. The whole operation will occupy about five minutes and, if conscientiously carried out, it will definitely prevent you from catching cold.

Topics of Interest from Health Periodicals

Dehydration in Infancy.—H. Áron points out the disastrous results of dehydration in infancy from the mistaken fear of giving water to such young children. It may even happen that death may ensue from simple deprivation of fluid. Many cases of so-called infantile pneumonia have been diagnosed as such from the presence of fever, a dry tongue, hurried respiration, dry skin, vomiting, and depressed fontanelles, but these are only symptoms of water-starvation which often leads to pyuria or albuminuria. The giving of water by the mouth or saline by the rectum will effect a satisfactory change if the condition has not been suffered to last too long.—(*Berlin: Klinische Wochenschrift.*)

The Time Food Remains in Stomach.—The length of time spent by food in the stomach depends in part upon the proportions of carbohydrate, protein and fat eaten. In experiments where each is eaten separately, protein food stays longer in the stomach than carbohydrate, fat, longer than protein, and mixtures of fat and protein, longest of all. In a mixed diet, then, the greater the proportion of fat the longer the food stays in the stomach. This action of fat may be either disadvantageous or advantageous according to circumstances. Excessive fat may retard digestion unduly and lead to discomfort; on the other hand, too little fat may result in such early emptying of the stomach that hunger pangs are felt too shortly after the meal is eaten.—*H. C. Sherman, "Food and Health", New York, Macmillan Company. 1934.—The General Practitioner of Australia.*

Modern Civilisation and Maternal Mortality.—Dr. G. K. Bowes writes: "In place of early marriages and more or less continuous child-bearing, and an attitude of mind which regarded child-bearing, as a natural and necessary process, we have now late marriages, prolonged birth-control, later child-bearing, fear of giving birth to children, and an attitude of mind which is in part cause and in part effect of these conditions. In correspondence with this mental attitude, the whole process of child-bearing tends to become more and more difficult and abnormal, and in consequence to be accompanied by greater morbidity and mortality". Since, however, it is impossible in this generation to change the present trend of civilisation, Dr. Bowes sees no alternative but to try, as far as may be, to counteract some of its effects (even though it may be doubtful to what extent the objects in view will be attained) by schemes for extending the maternity services, for providing more supervision during pregnancy, and ensuring better conditions during labour and the puerperium.—*Medical Officer.*

A Novel Marriage law—Marriages Drop Under New Law.—A survey by the Associated Press of most of the leading cities and towns of Connecticut showed that, with one exception, the number of applications for marriage licences was less than in January a year ago. January was the first complete month of the State's new "blood test" marriage law. The new act, which became effective on 27th December, 1935, compels each applicant for marriage to submit to a blood test. The ceremony cannot be performed if the test proves unsatisfactory.—*Medical Record, Aug, 1936, p. 11.*

Sanitation of Bathing Places.—In expressing any opinion as to the suitability or otherwise of any such bathing place, all circumstances must be taken into consideration. Perhaps the most important are:—

1. *The cleanliness of the water*—Usually, this is most satisfactory in running water or where it is kept in constant motion, as by tides and waves at the seashore. Large lakes are likely to be safer than small ponds. Moreover, wide beaches generally allow greater distribution of bathers. Regard must be had to the average analyses of water samples taken during the summer months, especially in the absence of bathers. There is no doubt that the standard of purity ought to approach that of drinking water, as suggested in the official publication issued by the Ministry of Health on *The purification of the Water of Swimming Baths*, although, probably, the presence of B. coli in, say, 25 c.c. or 50 c.c. of water could not be considered too objectionable. The clearness or turbidity of the water is particularly important. It is sufficient to recall that fatal accidents have occurred owing to turbidity of the water preventing bathers and onlookers from observing the submersion of anyone seized by cramp or for any reason unable to reach shore. In clear water, such an occurrence would probably be observed before the individual was actually drowned.

It has been argued that the experienced swimmer is less liable to infection than the learner or the bather, but it is difficult to see what difference this can have upon infection of the eye or ear: in fact, the experienced swimmer must be more liable to such infections. Unsatisfactory chemical and bacteriological analyses do not disclose the amount of danger—they are but indications or warnings that other really dangerous pollutions may be present.

2. *General cleanliness of the shore* is important, particularly the presence or absence of refuse and other sources of pollution. It is common to find old tins, picnic waste, papers, food, and all sorts of refuse thrown into ponds, whilst there is no doubt that much pollution is carried into the water on the feet, bodies or costumes of bathers, according to the nature of the beach on which they may have been lying or sitting or over which they must walk to reach the water. This is probably where supervision is most useful.

3. *Provision of safety measures.*—In order to maintain any open stretch of water in a condition suitable for bathing, some supervision is essential. Its aim should be to maintain the shores in a clean and decent condition, and to advise or warn bathers of dangers. Some form of safety measures and rescue appliances should also be available, as well as, of course, car parks, sanitary conveniences and other amenities that are demanded nowadays wherever people congregate in number.—*The Medical World.*

Health Tit-Bits

Aluminum Cooking Utensils.—In our opinion, there is not the slightest reason for believing that food cooked in Aluminum cooking utensils is harmful. We believe that all such propaganda against Aluminum cooking utensils comes either from faddists, quacks or ignoramuses, or in some cases, is doubtless inspired by the makers of other kind of cooking utensils.—*J. A. M. A.—Medical Times.*

* * *

Tropics.—It is, in fact, dangerous for a man from a temperate climate to live in the tropics for a longer, period than two years, according to Dr. Cecil K. Drinker, Harvard physiologist. If you must live in the tropics, climb on the water-wagon, he advises : shun alcohol, get adequate sleep, simple food, plenty of water, plenty of salt. Basal metabolism changes, will-power weakens, laziness follows and sometimes vicious habits develop, Doctor Drinker warns.—*The Medical News.*

* * *

Physical Training may be Harmful.—The view that 'the increased provision of physical training now being demanded by public opinion and projected by the Board of Education will be ineffective and in some cases harmful unless the school child is adequately nourished' was expressed in a resolution, declaring that milk and meals should be available for all children, at the fifty-second annual conference of the London Teachers' Association, 'the county' branch of the National Union of Teachers, held in London recently. — *The World's Children.*

* * *

The Toddler Teeth.—A child's health depends largely upon the condition of his teeth, and whether the teeth are sound depends upon the food he eats. Milk, green vegetables, fresh fruit, and bread contain the mineral salts and vitamins necessary to ward off disease.

The teeth should be brushed for two or three minutes twice a day—on rising and before going to bed. A tiny, single row toothbrush is best for baby, whilst children of two and over may have a small brush the head of which should be not more than 1¼ inches in length.

A child is not too young at two to be taken to the dentist. In fact, if any dark spots appear on the teeth, he should be taken immediately.—*Home & Homeopathy.*

* * *

Life Span in Olden Times.—Men of achievement apparently enjoyed just about the same average length of life two or three thousand years ago as they do today.

Alexander the Great, Persius and Terence died under or just over thirty years of age, reminding us that in modern times also not a few famous men have had their careers cut short by an early death, as was the case with Shelley, Keats, Schubert and others.

All in all, the average at death of the eminent men of antiquity was 66.7 years, not much different from that of a sample of 82 noted mathematicians of modern times, namely 64.3, and of a sample of 75 poets, namely 64.1 years.

To find this degree of similarity in the average at death of a fairly typical list of men who became eminent two thousand or more years ago, on the one hand, and those of the very recent past, is probably to most of us a somewhat unexpected result —*Metropolitan Statistical Bulletin.*