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Editorial

The Public Health Bill

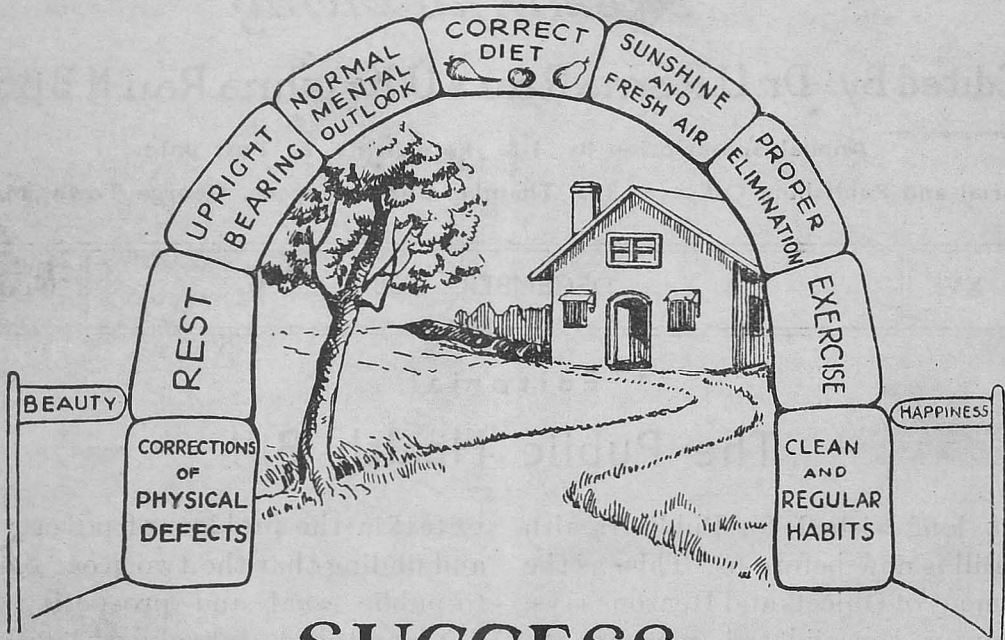
THE long-wished for Public Health Bill is now before us. This, as the statement of Objects and Reasons says, is only a consolidated measure to advance and promote Public Health in this Presidency in the light of modern researches and recent experiences of other civilized countries of the world. The Bill, however, cannot be said to be perfect and admittedly there are several lacunæ in it. A Public Health Bill to be perfect must provide for the care and health of individuals from the cradle to the grave. But, no public health measure will be of any avail if the standard of living of the people, to whom it is intended, is much below par and their strength and stamina and power of resistance to diseases have reached the lowest water mark. The Congress Government, therefore, realizing this, began

to tackle the problem of poverty first and finding that the two great barriers to public weal and prosperity were *drink* and *debt*, introduced legislation last year prohibiting drink and wiping off debt. The Prohibition Act, which now extends to three Districts, has been pronounced to be a great success in Salem during the one year of its operation there, not only by the officials of Govt. but also by disinterested non-officials of this Province and outside, who had studied the problem at first hand. As the Collector of Salem observes in his recent report, the people look more hale and healthy than before, they spend more on food and other necessaries of life, they have begun to forget the old days of misery and starvation, there is less of crime now, people are better dressed and appear more tidy and that they have

put by something for the winter days. This is an eloquent testimony of the success of the scheme and this is a clear indication to show that the standard of living has increased considerably and the people having been reclaimed from age-long starvation and misery to saneness and sobriety, are now in a mood to look after not only their own health but also the

go down and the morbidity rate will decrease considerably and health and happiness will prevail in the land. The old trite saying "Public Health is Public Wealth", is a true saying and this Public Health measure will undoubtedly add to the wealth and prosperity of the nation.

Now, coming to the provisions of the Bill, we said, there were some



SUCCESS ARCH OF HEALTH

The success of any Health measure depends on the due observance by the public, of the Laws of Health.

health of the community at large. The Debt Relief Act has helped to further their prosperity and advancement and there is no gainsaying the fact that these two measures have conferred a lasting boon on the inhabitants. When this Province becomes completely dry and free from debt, the inhabitants will surely rise to the level of those in other civilized countries in the world and the general mortality rate and infant mortality rate which are the highest at present, will

lacunæ in it. The Bill provides for the health of the expectant mother, and the infant, but excludes provision for the maintenance of vital statistics and the 'Registration of Births and Deaths', which are integral parts of a Public Health Bill. Of course, the provisions are already there in the Municipal and Local Boards Acts, which remain unaltered, but a Public Health Bill will not be complete without these sections being also incorporated in the Bill. Vital Statistics

are said to be the Barometer of the Health Department and a necessary guide to the Health Officer. These Statistics are maintained in a haphazard manner especially in Local Board areas and the Govt. should have included them in this consolidated measure and made them more stringent and effective.

No provision has been made in this Bill for certification of deaths by medical men, especially in municipal areas, which will not only facilitate classification of deaths according to the diseases but also provide means for detecting early cases of infectious diseases and the prevalence of any particular disease in a particular area in an abnormally high rate. This omission should be supplied.

The next lacuna in the Bill is want of provision for the health of the pre-school and school-child. Nursery Schools and other measures connected with the welfare of the Pre-School child—miscalled the toddler—are yet in an experimental stage even in countries like England, France, and America and it will be a waste of time, money and energy to provide Nursery Schools in our Province, where mothers engaged in industries and occupations are very few in number and even those few will be unwilling to entrust their children to the care of nurses in the Nursery Schools, however desirable it may be, in preference to grandams or other elderly children in the family. This perhaps explains the reason why no provision was made in this Bill in regard to this. As regards School Children, compulsory teaching of Hygiene in schools and Medical Inspection of school-children, called in modern parlance, "Hygiene of the School Children," are the two things which

must be statutorily enforced so as to make them fit and healthy citizens. Medical Inspection of schools was tried in the past in a perfunctory manner and no good came of it. Hence, it was discontinued. We trust, it will now be revived and placed on a thoroughly satisfactory basis.

So far, we have dealt with some of the lacunæ in this Bill. We shall now proceed to a consideration of the provisions of the Bill itself. This Bill consists of 15 chapters:—

Chapter I: Clauses 1 and 2, of this Chapter deal with the title and commencement of the Act. Clause 3, deals with definitions which are clear and exhaustive.

Chapter II of the Bill deals with controlling authorities and their powers. For the first time in the history of Health Administration of this Province, nay, of the whole of India, the Director of Public Health is vested with statutory powers and a Public Health Board has been created to advise the Health Minister on matters relating to Health Administration. This is fairly representative, consisting as it does, besides the Minister of Public Health and the Minister of Local Administration and the Surgeon-General and Director of Public Health, the Government's Expert Advisers in the field of Medicine and Public Health, respectively, one person elected by the Madras Legislative Council and two persons elected by the Legislative Assembly. These latter represent public opinion, which is essential for the right shaping of any Public Health policy. This is only an advisory body and the Government's hands will not be fettered by their resolutions, if they go counter to the policy of

Government. Under Clauses 6 and 7, the Director of Public Health is given a free hand in the matter of enunciating and enforcing Public Health policy in this Presidency. Sub-Clause (3) of Clause 6, however, provides for non-interference with the powers already possessed by the Govt. and the Dt. Collectors in the matter. Under proviso to Clause (7), an appeal lies to Govt. in case of difference of opinion between any local authority and Director of Public Health.

With regard to the entertainment of Public Health Establishment provided for in Clause 8 and subsequent Clauses, the Corporation of Madras is exempt from the operation of this Clause and the Govt. do not want to disturb the existing powers of the Corporation in regard to its Public Health establishment.

Chapter III, relates to Water-supply and there are as many as 9 Clauses in that chapter. The Congress Government holds water-supply as of first-rate importance to the public and they have chalked out a programme by which, no village in this Presidency is made to suffer for want of potable water for drinking purposes. They have already ear-marked Rs. 15 lakhs for the purpose and are providing as much money as is available every year in the Budget for the purpose. Power is also taken under Sec. 21 of the Act to require even Railway authorities to submit samples of drinking water for analysis from time to time to ensure their quality and to prevent contagious diseases from spreading through that medium.

Chapter IV appertains to Drainage. There is provision made here also for the drainage of huts. Chemical and other injurious refuse are prohibited

from being discharged into the public drain.

Chapter V deals with Sanitary Conveniences and Chapter VI with Abatement of nuisances. Drastic provisions are made under this head and it is hoped that the ugly sights in front of houses in the City of Madras and in mofussil towns, where people urinate and ease themselves indiscriminately will be things of the past.

Infectious Diseases are elaborately and exhaustively treated under Chapter VII. Here, Leprosy and Malaria are treated as Infectious Diseases for the first time. For the first time, also in the history of the Health Administration of this Presidency, "Venereal Diseases" have been included under Infectious Diseases and special measures are directed to be enforced for the prevention and spread of these diseases.

Chapter VIII contains a single Clause for carrying out of measures, pertaining to Maternity and Child-welfare as may be prescribed.

Chapter IX deals with mosquito control. Some amount of responsibility is sought to be placed on the owners of houses who, by allowing water to stagnate in their premises, contribute to the breeding of mosquitoes and consequent causation and spread of malaria. The Health Officer is empowered hereunder to issue notice to owners or occupiers of such houses to treat stagnant water by physical, chemical or biological methods and thus prevent the breeding of mosquitoes and in cases of default, to do the work himself and recover the cost thereof from the owners or occupiers.

Chapter X relates to sanitation and buildings. A special portion of

this chapter—Part III, is devoted to overcrowding. Overcrowding has not all along been held to be the primary concern of the Health Department but power is now taken under this Act to abate overcrowding. Power is also given to the Health Officer to require any owner of a building to vacate it if it is found unfit for human habitation.

Another salutary provision is the prohibition under section 99 of the Act for the erection of back to back houses, intended to be used as dwelling houses and their condemnation as dwelling houses if erection is begun after the commencement of the Act.

Lodging houses come under a separate chapter, Chapter XI. These lodging houses have become a menace to Public Health, and unless strict sanitary control is exercised over them the menace will continue. Govt. have done well to have provided for their control.

Chapter XII deals with food control and specific measures are enacted for the control of milk-supply and dairy produce.

Chapter XIII relates to Fairs and Festivals and power is given to Local Authorities, in whose jurisdiction they are held to levy pilgrim tax

on water-ways and tolls on vehicles other than motor vehicles, to meet the expenses in connection with the sanitary arrangements.

Chapter XIV statutorily fixes the amount to be expended by Municipalities and Local Bodies for the advancement of Health, which is 30% of their income from all sources in the case of the former and 12½% in the case of the latter. This is a very welcome provision. If, however, it is pointed out that the incomes of these bodies are inadequate, Government will relax these rules in those cases.

The last chapter XV deals with Rules, Bye-laws and Penalties. Under this chapter, Police powers are invested on Municipal officers not below the rank of a Sanitary Inspector and certain safeguards are also provided to prevent unnecessary harrassment.

The Bill, on the whole, is a welcome and salutary measure and we hope it will soon be passed into law and placed on the Statute Book. We take this opportunity of congratulating The Hon'ble Dr. T. S. S. Rajan, Minister of Public Health for bringing out this important and well-conceived Bill at an opportune moment.

Obiter Dictum

“ There is no royal road to serious betterment unless the people exercise a full measure of common sense and intelligence and are prepared to accept hygienic laws and standards. Many parts of India have set out on this road, which is not ‘ royal ’ but they are mostly still a long way from the end of the journey. May the final scheme of federal constitutional reorganization contain such provision for the well ordered public health progress of India as a whole as will enable India in time to take her rightful place in health matters amid the other great nations of the world ? ”—Major-General J. D. Graham, I.M.S., Public Health Commissioner with the Govt. of India.

—(Annual Report for 1929.)

DYSENTERY

By Dr. N. P. Jain,

Kapurthala,

To us, living in the tropics, some information about Dysentery, its causes, symptoms and prevention, is essential. The importance of this disease is not fully realised by the layman and it might come to him like a shock, when he is told that Dysentery kills from 300,000 to 350,000 persons a year in our country, leaving out of account the enormous amount of morbidity or ill-health it causes. There is no end to malaria, kala-azar, pulmonary tuberculosis, and other devitalizing diseases, and very often Dysentery occurs on the top of such diseases and closes the scene.

No age and sex is exempt, and children are very frequently attacked. This is quite a frequent cause of chronic ill-health in children, and does untold harm to their mental and physical out-look on life. The child loses his usual brightness and takes little interest in his study and play. He always feels tired and listless and in the matter of games feels that he is not upto them. He develops a sort of inferiority complex and may not be able to get rid of it throughout life. The growth becomes stunted and physically he is placed at a disadvantage. We thus see how important it is for us to give our children the best chance for recovery from such a disease.

It is not generally known to the average man that there are many causes of Dysentery. The most important are two. One is a small germ called the Dysentery Bacillus, which is by far the commonest cause. The

second is a small animal, so small that you cannot see it without the aid of a microscope, which is called the *Entamoeba Histolytica*. A third cause which sometimes produces dysentery-like symptoms is a small worm, *Ankylostoma Duodenale*, which lives



Ankylostoma Duodenale or the Hookworm.

in the intestines of man, and drinks his life's blood. This is a worm visible to the unaided eye, about 8 to 11



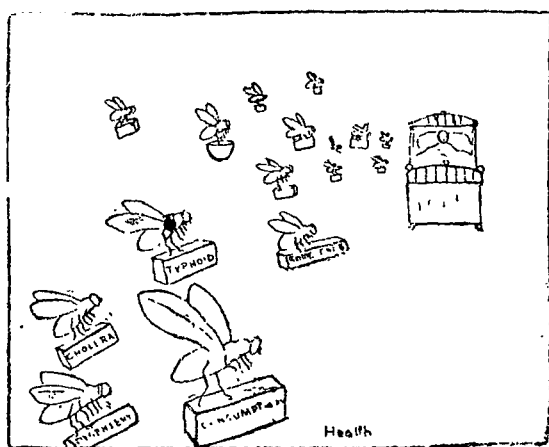
Hookworm in the person's bowels, taking hold of the lining with its mouth and hanging on without molestation.

mm. in length, white or reddish according as it has taken a feed of the host's blood or not. This parasite more often produces a progressive anæmia but it often gives rise to symptoms resembling dysentery, and considering the enormous pre-

valence of the disease, it is worthwhile mentioning this as a cause.

The discovery of the cause is the business of the doctor and will tax his ingenuity to the utmost. For the layman, it is enough to be able to recognize the disease, which is fairly easy from the frequent passage of stools containing blood and mucus, pain in the belly and perhaps a little fever. Whatever the causes, the symptoms are more or less the same.

It is important to know how these disease germs get into the body. They are always eaten. There is no other way of getting the disease. Suppose,



Flies are the carriers of disease germs such as Dysentery, Cholera etc.

a case of dysentery occurs in a house or a community. They have probably a common latrine, and the stools lie exposed for a long time. There are any number of flies in the house. They first visit the latrine and sit on the stools containing dysentery germs. These germs stick to the legs of the fly and when it comes and sits on the eatables in the kitchen or the dinner table, it deposits myriads of germs on the food. Whoever eats that food will get the disease. A similar process occurs with bazaar sweets where flies are swarming. As will be clear, flies carry not only dysentery bacilli but also many other kinds of disease

germs, *e.g.*, cholera, typhoid etc., in the same way. The preventive measure would therefore be not to expose the dysenteric stool to the flies. This can be easily done by passing the stool in an antiseptic lotion such as phenyle or covering the stool after it is passed with earth or wood-ash. This little thing will save others from the danger of the disease. Dirty hands can do the same, and the hands of the attendants on a case of dysentery should be washed thoroughly before eating anything. There is a stage of the disease in which the germ is passed in the stools without any symptom in the host. This is called the carriers' stage and if the cook of the house has got this and is not very scrupulous about washing his hands, you can realise what a danger he is to the household or the community for which he is working. Epidemics of dysentery in boarding houses have often been traced to cooks. Destruction of flies and infected eatables in the bazaar are parts of statecraft, but the individual can do a lot by observing very simple precautions.

Though the symptoms of all forms of dysentery are more or less the same, the treatment necessarily varies with the cause. It is therefore very important to make sure of the cause and treat accordingly. A restriction in dietary, perhaps a dose of some purgative and a little enforced rest will tend to alleviate symptoms in any case, but this does not mean that the patient is cured. More often, he passes into the chronic stage which is much more difficult to treat, and may undermine health for all life. It is therefore, very important to treat the disease in the acute stage thoroughly.

One point about the treatment requires emphasis. The doctor will always tell the patient to keep to bed. Most often the patient thinks it unnecessary, and considers the doctor is erring on the safe side. He will not blame his doctor for being over-cautious when he knows that in this disease, small ulcers are formed in the intestines and the blood and mucus that he sees in his stool is coming from the ulcers. Now everyone knows that if an inflamed part is made to work or moved about, it aggravates the pain and the swelling. The same principle applies to the inflammation of the intestines. If the bowels are made to work there will be an aggravation of the pain and swelling, and

consequently of the dysentery. Rest therefore is a very important part of the treatment, quite as important as medicinal treatment.

The wise ones of all ages have said that 'knowledge is power' and that 'prevention is better than cure.' No attempt has been made in this article to give a description of the causative germs of the disease, or the symptoms and methods of diagnosis. This is the domain of the doctor. The above is written for the layman, and only elementary facts are given. Armed with this knowledge, one can attend to the details of treatment of a case in one's home and also in a small way apply preventive methods in the house intelligently and successfully.

Nutrition in Health

By Dr. M. A. Ramachandra Rao, M.B., C.M.,

Chief Medical Officer, Pudukottah.

(Continued from P. 252, Vol. xvi. No. 11, November '38, issue of Health.)

Mineral Salts.—Calcium, Phosphorus and Iron are the mineral salts commonly found in foodstuffs. It is probable that these are the elements which are most likely to be insufficiently supplied by average human diets. There are a number of other elements needed by the body; it may be assumed that if the diet is well-balanced generally enough of these elements will be obtained. The special problem of iodine deficiency in goitrous areas will not be considered here.

Calcium.—Calcium is found abundantly in milk (including skim milk

and butter-milk), cheese and green leafy vegetables, Mur-raya, amaranth, fenugreek and drumstick leaves are rich in

calcium. Children need relatively more calcium and minerals than adults, just as they need relatively more protein.

Expectant and nursing mothers require a large intake of calcium. A healthy breast-fed baby of 3 months contains a great deal of calcium in its bones, all of which has been drawn from its mother's blood and its mother's milk. If the mother's diet is deficient in calcium, then the calcium present in her own bones is drawn upon, and her health and probably that of the child, will suffer. Since there is this enormous drain of calcium

during pregnancy and lactation, a large intake of milk during this period is recommended.

The usual text-book figures representing calcium requirements are 0.68 gramme daily for adults, and 1.0 gramme for children. These figures allow a high "margin of safety". Indian diet, particularly diets based on milled rice, may supply less than 0.20 gramme of calcium daily. This intake is too small. The diet of growing children should contain upwards of 0.60 gramme of calcium daily and that of pregnant and nursing women rather more.

The best source of calcium is milk. Green vegetables and certain millets *e. g.*, ragi are particularly rich in calcium, but the calcium contained in such foods may not be as well absorbed and assimilated as milk calcium.

The habit of chewing betel leaves coated with lime (calcium oxide), which is common throughout India, increases intake of calcium. At present we have no precise knowledge of the value to the body of calcium consumed in this manner.

Phosphorus.—It is usually stated that more than 1.0 gramme of phosphorus daily should be supplied by the diet. Cereals in the raw state are fairly rich in phosphorus, but considerable loss of this element occurs on cooking. If a diet contains sufficient calcium, it may be taken for granted that its phosphorus content is satisfactory.

Iron.—Hæmoglobin, the red pigment of blood—a most important physiological substance which transports oxygen from the lungs to the tissues

contains iron as an essential constituent of its molecule. Iron is needed by the body for blood formation. When destruction and loss of blood corpuscles is taking place as in such conditions as chronic malaria and ankylostomiasis (hook-worm), iron requirements are increased.

It is suggested that a well-balanced diet for a growing child or an adult should contain 20 mgs. of iron according to the tables. This figure gives a "margin of safety" and allows for the possibility that the iron contents of foods in certain parts of India may be lower than that of the foods analysed in the Coonoor Laboratories. The iron in certain foods is less "Available" *i. e.* less well assimilated than the iron in others. A high percentage of the iron in pulses and meat, for example, is "Available" but only a low percentage of the iron in vegetables. If, however, total iron intake from all foods present in the diet exceeds 20 mgs. per day, it is possible that sufficient iron will be assimilated.

In the treatment of certain forms of anæmia, iron medication is more effective than the consumption of a diet containing abundant iron-rich foods. For the prevention of anæmia, however, an iron-rich diet is valuable. Pregnant women are particularly prone to suffer from anæmia.

The effect of cooking on Nutritive Value.—The effect of heating and cooking on the Nutritive value of foodstuffs is, on the whole, less pronounced than is generally imagined. Vitamin C is destroyed by moderate degree of heat, and for this reason the inclusion of some raw fruit in the

diet is desirable. When foods are cooked for prolonged periods in excessive quantities of water, some of the vitamins and salts they contain may pass into the water, and will be lost if the water is discarded. A considerable loss of phosphorus occurs during the washing and cooking of rice. The addition of washing soda (a strong alkali) to cooking water for the preservation of colour or to facilitate cooking, tends to promote vitamin destruction. Conversely, a highly acid substance like tamarind has, when added to cooking water, a preservative effect. It must be added that we need more information about the effect of ordinary Indian methods of preparing and cooking foods on Nutritive value.

Malnutrition.—It is advisable that those who are responsible for the institutional care of children, etc., and all who are concerned with practical nutrition work, should have some idea of the effects on the body of a diet which is ill-balanced and defective—*e.g.* of a diet which is largely composed of milled cereals and contains an insufficiency of proteins, mineral salts and vitamins, and which calls for improvement. There is a long list of diseases, common in India, due in some way or other to dietetic causes. Such are:—beriberi, certain aemias of pregnancy, Keratomalacia, Osteomalacia. States of malnutrition which fall short of serious disease are wide-spread. A well-balanced diet is essential if growth and development are to take place normally. A badly fed child is often small for its age and thin: its “weight for height” will be below average, it will fall sick easily. The frequency of minor ailments in school going child-

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ren can be reduced by improving the diet. A certain apathy, a lack of *pep* of enthusiasm for work and play, is characteristic of the malnourished. The state of the skin is a sensitive index of faulty feeding; a rough dry skin, or a skin covered with a papular eruption, suggests faulty feeding and in particular vitamin A deficiency. Everybody knows that a well-fed animal exhibits a certain glossiness and sleekness of fur—“a good coat”—which is not seen in poorly fed animals. Similarly: a well-fed human being has a glossy skin and a glow of health. Bright clear eyes are also a sign of satisfactory feeding. Xerophthalmia (areas of dryness on the conjunctivæ of the eyes sometimes covered with white exudative patches known as Bitot’s spots) is associated with vitamin A deficiency. Sore-mouth and tongue and erosions at the angles of the mouth are found in ill-fed children; in the properly fed child the tongue should be smooth and evenly coloured and not show enlarged papillæ, fissures and areas denuded of the superficial epithelium. Such lesions, occurring most commonly in milled rice eaters, may be due to vitamin B₂ deficiency; they can often be rapidly cured by increasing milk intake. Spongy bleeding gums suggest vitamin C deficiency—mild scurvy—and call for the greatest consumption of fresh fruits and vegetables.

Summary of Dietetic Principles.—Human beings, and particularly children, cannot thrive at their best on a diet composed largely of cereals such as rice, millet, etc., and insufficiently supplemented by other foods. To make good the deficiencies of such a diet they must consume fair

quantities of foods like milk, green vegetables etc. These are sometimes known as the *protective* foods, since they are rich in proteins, vitamins, and mineral salts and protect the body against the ills which result when the diet is largely based on less nutritious foods, such as milled rice. Cod-liver oil which is very rich in vitamins A and D may for present purposes be classed as a most valuable *protective* food.

In general, diets in India are defective because they do not contain *protective* foods in sufficient abundance. Our aim in Public health nutrition work in general and planning, "well-balanced" diets, must be to increase intake of "protective" foods. The classes in the community which are particularly likely to suffer if their diet is defective, are infants and growing children, and expectant and nursing mothers.

One should know what is a well-balanced diet and what is an ill-balanced diet.

In a well-balanced diet all the constituents of a diet are present in fairly good proportion and which yield an energy of 2500 Calories. There is sufficient "Protective food" in it.

In an ill-balanced diet, the protective foods are not sufficient and it is composed largely of rice and contains very little milk, vegetables or fruit. To improve the diet an addition of milk about 10 oz. and 3 oz. of leafy vegetables and fruits is to be made.

Even when poverty prevents the purchase of a diet which satisfies modern standards of Nutrition, it is often possible to make effective improvements with little increase in cost. It is desirable that children should consume 8 oz. of milk a day. If available funds do not admit the addition of the quantity of whole milk, butter milk or skim milk, reconstituted from skim milk powder, which are considerably cheaper, may be supplied. Careful experiments have shown that the giving of 8 oz. of skim milk daily to children fed on an average "ill-balanced" diet, results in an acceleration of growth and a great improvement in health, and well-being.

Therefore, in order to root out Malnutrition :

(1) we have to do propaganda work explaining to parents and children the nature of the food they have to take ;

(2) propaganda to grow green leafy vegetables knowing the efficacy of green leaves and cheapness and

(3) To organize various centres for supplying free milk to ill-nourished poor school children.

This is a very important factor in Public Nutrition work. Persons, who really wish to do effective work in this direction should organise centres for distribution of free milk.

I am sure, in course of years, the question of malnutrition will be solved, and we will have hale and healthy subjects.

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Physical Fitness

(Contd. from pp. 208 Vol. XVI. No. 9, Sept. '38 issue of 'Health'.)

By Khagendranath Chatterjee,

— M. B., Lt. I.M.S., (Retd.), Chinsura, Hoogly, —

The Limbs

IN the previous pages, we have dealt with the main parts of the body, namely the head, neck, the thorax and abdomen, and surely life cannot exist without any of these. The parts that remain are the limbs, and though they are not absolutely necessary for life, they are certainly so for the body, as without them, the body will be reduced to a hopeless and helpless condition. It is with the help of these limbs, that we can walk, or stand, or sit, or eat, and practically we do everything with them. Let us now see what care we should take to keep the limbs healthy and fit. We all know, that there are two pairs of limbs, the upper and the lower. The upper limbs are called the arms, and the lower ones are called the legs. The arms and the legs again, consist of several parts which will be described in due course. Let us first take up the arms. The arms are again divided into three parts, the upper, middle and lower. The upper portion is called the upper arm, and extends from the shoulder to the elbow joint. The middle portion is called the forearm and extends from the elbow joint to the wrist. The lower part is the hand extending from the wrist joint to the tips of the fingers. The arms are the protectors of the body, as we defend ourselves from our enemies,

and from all accidents with these arms, and do all work with their help especially the taking of our food. Hence the arms are also of great help to us. The arms which protect the body and are so useful, should be very strong and muscular—the brawny arms, as they are called. The muscles which give the arms their brawny appearance, are described in brief, as these impart the strength and beauty to the limb.

First comes the Deltoid, the firm and round mass at the shoulder, just where the arm is attached to the body. It is brought into play with other muscles of the shoulder during exercise. The next prominent muscle of the upper arm is the Biceps, which also can be exhibited as a hard round ball by strongly contracting the muscle, as in the act of bending the forearm over the upper arm; a smaller yet a strong muscle at the back of the upper arm opposite to the Biceps, is known as the Triceps. These muscles can be properly shown by any robust man, an athlete or a boxer. A very fine picture of these muscles, standing out vigorously, is seen in the photo of the world-renowned athlete the late Mr. Eugen Sandow, in one of his common poses, in which he bends his arm and touches his forehead with the fist. The muscles of the forearm similarly become prominent and

firm when the fist is clenched and bent over the wrist. It is known to all that these muscles develop and become 'brawny' by regular physical exercises and also by hard manual labour. After the muscles, come the three main joints of the arm, the shoulder, the elbow and the wrist. An healthy arm means a muscular strong arm, with free joints. A diseased joint, *i.e.* either swollen or

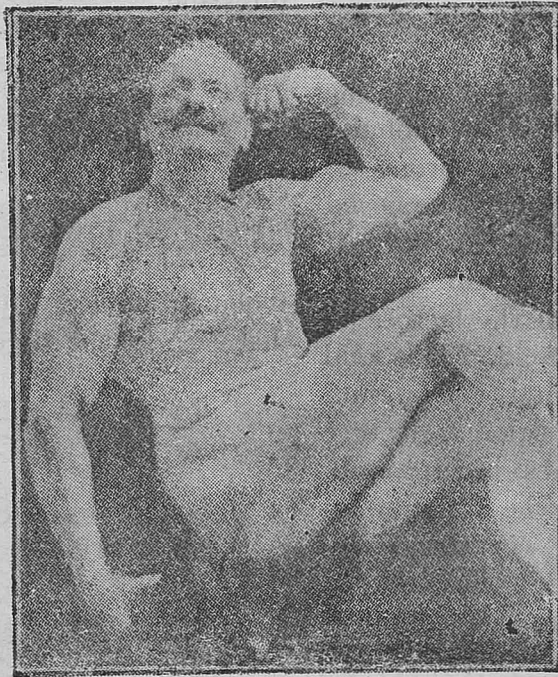
painful or in any way stiff, disables a man.

These conditions are brought about by diseases like rheumatism, gout, accidents, venereal diseases etc. These conditions should be avoided by proper treatment. We next come to the lower limbs which are generally called the legs, but the legs are only the portions between the knee and ankle joints,

whilst the part above them is called the thigh and the portion below the ankle joint is the foot. So we see that the lower limb has got three portions like those of the upper one and has got three main joints also, the hip, the knee and the ankle. The lower limbs support the body, as the whole

weight of the body falls on them when we stand or work, and for that reason the muscles of the lower limbs also should be very strong. The stout muscles of the thigh and the prominent calf muscles at the back of the legs, are signs of a strong and healthy man. It has been stated that there are three big joints in the lower limbs. The hip joins the thigh with the body,

the knee, the leg with the thigh, and the ankle joins the foot with the leg. The skeleton of the limbs, both upper and lower, consists of one long bone for the upper portion, two long bones for the middle parts, and several small ones for the lower parts, such as the hands and the feet, a detailed description of which will be found in



The Late Mr. Eugen Sandow.

a book of Anatomy, and therefore this chapter is closed here. The author cherishes the hope, that from this, as well as from the foregoing chapters, his readers may find some useful information regarding the standard of good health, which may practically help them a little in keeping their body in a fit and active condition.

DAHI (Curd)

DAHI as a diet not only serves to produce nutrition and energy but acts also to increase the span of life.

What is Dahi.—Dahi is solidified (curdled) milk. Milk contains proteins, fats, carbohydrates, salts and water. Carbohydrate of milk is lactose or milk-sugar. It remains dissolved in the fluid after casein and fat globules have been separated. It is prone to produce fermentation when exposed to air for some time and especially if it be warm, certain chemical changes take place and part of the lactose is converted into lactic acid. This acid combines with calcium of calcium caseinogenite to form calcium lactate and caseinogen becomes precipitated. This change is due to the action of an enzyme secreted by certain micro-organisms. This causes the milk to turn sour. This sour and solidified milk is Dahi.

It is very commonly used in the Punjab. It is usually prepared by adding a few drops of dahi or 'lassi' to the warm milk in the evening and kept overnight in a suitable temperature when in the morning it will be found ready.

When dahi is mixed with water and thoroughly churned, butter is separated and the resultant fluid is called "Lassi"

Dahi has all the beneficial effects of milk with the addition of the benefits accruing from the presence of lactic acid and micro-organisms secreting the enzyme, as these destroy all the

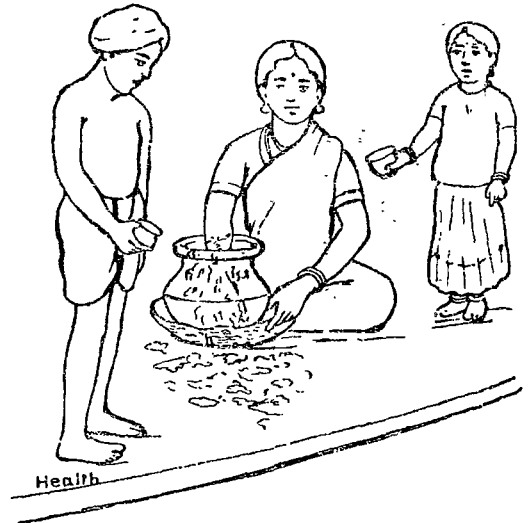
By

Dr. P. N. Kanwar, M.B., B.S.

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harmful and ferment - producing bacteria and products of stomach and intestine.

Dahi in health.—Has the following uses and effects. (1) It increases the digestive power and destroys the products of fermentation. (2) It is a stomachic. (3) It make the bones strong. (4) Produces energy. (5) Acts as a tonic. (6) Is a great haematinic-blood producer. By its use so many diseases of the digestive system are



Curd, exposed for sale and subject to the ravages of flies &c., if consumed, gives rise to infections such as cholera, diarrhoea, &c..

kept in abeyance or checked. Hence, it acts as a prophylactic against various digestive diseases. In summer, 'Lassi' is a much refreshing, invigorating and cooling drink.

Dahi in disease.—It forms a chief part of diet in diseases like dysentery,

Diarrhoea, Typhoid and other allied fevers, all fevers traceable directly or indirectly to defects in the digestive system, in convalescence after cholera, inflammation of the membranes of the stomach and intestines. In all these, it not only acts as a diet but serves as a medicine as well. In diseases of liver, like inflammation, jaundice etc, in anæmia and other run-down conditions, it acts wonderfully, especially when taken mixed with a little pepper and common salt.

In my practice, I invariably use it as a chief part of diet in typhoid, dysentery and jaundice cases; in the first two, as dahi mixed with pepper and salt and in the third as lassi mixed with ammonium chloride. In this latter condition, I give it as "adhirka" also. This is dahi churned for a few minutes but without the addition of water. I prescribe this commonly as a prophylactic for these diseases.

In summer, *Adhirka* and *Lassi* are the most refreshing and invigorating food and drink in the early morning instead of tea which produces many harmful effects. I have met many an old man whose ages vary between 90—100 years in the rural areas who are still doing their ordinary duties of ploughing and farming. On being asked the secret of their longevity and health, invariably the reply is the constant use of dahi and lassi the whole year round and this fact is still further proved by the fact that in the rural Punjab, dahi and lassi form the major portion of their diet and in spite of their extreme poverty they are still strong and well-built and can compare favourably with people of any part of the world. The use of these and the very sparing use of meat not available on account of poverty—goes a long way to make this being called as "Elixir of Life."

Limbs of the Mind

Curiosity	Sympathy	Admiration	Wit
A gift, the capacity of pleasure in knowing, which if you destroy, you make yourself cold and dull.	The power of sharing in the feelings of living creatures, which if you destroy, you make yourself hard and cruel.	The power of enjoying beauty or ingenuity, which if you destroy, you make yourself base and irreverent.	The power of playing with the lights on the many sides of truth, which if you destroy, you make yourself gloomy and less useful and cheering to others.

Charted by
M. ARUNACHALAM,
Golden Rock.

When Pain is Your Friend

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

Surgeon, Dentist, Railway Road, Pasrur.

I HAVE seen—and incidentally, been privileged to relieve—a good deal of pain at one time or other on account of my being a Dentist.

And perhaps, the thing that has struck me most is how very *unnecessary* most pain is. Not all, of course. But, most of it could be avoided, and a very large proportion can be cured, if only one can get the intelligent help of the victim himself.

Really healthy people, who have never felt anything worse than a bruised finger nail or an occasional twinge from a tooth, little know what pain can be. The lacerating pangs of rheumatism, for example, that make its victim dread to go to a warm bed, because he knows full well that there is no rest for him, only torture and the agonies of nervous indigestion, flatulent pain that racks the unfortunate being as he lies face downwards on the bed, hoping for some slight relief.

But most of it, I repeat, is needless and can be driven out quite quickly.

An ulcer is nothing but a wound which cannot heal because of invading germs. Sterilise, these clear the blood stream, and it heals.

Rheumatism is really due to auto-intoxication or self-poisoning. Seek

constipation as the root of it and you won't be far wrong. Constipation is at the bottom

of many painful ills; you can cure it by natural means, without drugging, but you had better do so, quickly.

Root Causes:—Indigestion is due either to nerves that have got out of hand, errors of diet, to habitual hasty feeding, or else that destructive thing—constipation, keeping in poison so that nourishment is wasted, instead of working to build you. It can hurt too.

“Nerves”, sleeplessness, fear without reason, neuralgia - these inflictions are mostly needless.

Pain has no place in a healthy organism. The red light is not needed when the line is clear and everything is working smoothly. Pain is nearly always poison.

Expel the poisons now within you. A prolonged course of physical exercise (reinforced by careful dietary) will hustle them out before they have time to do any damage. You will never wish to give it up. The delightful feeling of always having stamina and to spare, the joy of revelling in abundant muscular strength, the glowing feeling of optimism that takes hold of you when pain is but a memory, and health and strength are all your own—these things have to be experienced, to be believed.

THE SECRET OF BEAUTY CULTURE

BY K. R. VAIDIANATHAN,

Palghat.

WHAT is Beauty? Does it mean Tangee-tattooed lips and Pond's Cream-white-washed face? Does it mean Cutex-painted nails and Blondex-shampooed hair? Does Beauty mean dusting your face with some patent powder and emptying a bottle of 'Evening in Paris' on your head? Do you think that they are aids to Beauty? The modern girl has not yet woken up from her Beauty-delusion! She thinks that she can become beautiful if she owns a rich toilet! She is under the illusion that Beauty can be bought for a few coppers. And curiously enough, our so-called 'Beauty-shops' are not ashamed to advertise themselves as 'Beauty-mongers' packing out 'beauties' in bottles and packets to various countries. (Beauty!) According to the flat modern idea, Beauty can be bought for a few annas. It is so cheap in the bazaar and the street!

If Beauty is so cheap, so flat and floating on the mere flaunting foppery and fashions of to-day, there is no gain-say about saying that Artificiality is mistaken for Art, and Art for Artificiality. I say, Beauty cannot be so flat, so shallow and stale. It lies intangibly deep, as profound and inaccessible as Art itself! These outward adornments do bear the stale dried-up stamp of artificiality, not the deep, meaning, emotional 'something' of Art! They all fall literally flat on your lips, your eyes, your hair and they never lead us down to any

emotional depths! Beauty is 'something that comes from within and it is vain to seek it outside. Beauty can never be an article of commodity! It is not a tangible thing to be possessed, to be tacked on to your body! Beauty is not a possession—It is not an acquisition. It is being and becoming!

"The eyes are supposed to be the windows of the soul. They speak to you in a language of their own", says Bernar Macfadden of North America. Your eyes will reveal the person behind. Thus, it is the element inside that has to be enriched first. Verily, like the farmer in the fields ploughing the land, the mind has to be cultivated. A high degree of culture has to be attained. Do you know to what a degree of culture and character will Music lift you up? I say, Music is the most perfect mould of Man's character and outlook. Soft, soothing songs, the rich full-throated voice of nectar-melody, the soul-stirring notes and tunes, the sharp quivering, tremolo that gives an electric thrill of emotional vibration, all have a deep, profound element of culture and mental sublimity! Songs that soften our souls and lull them in an enchanted cradle of melodious sweetness, songs that take us on their wings to the beauteous land of romantic phantoms, songs that make our emotions mellow with a melodious move of feelings, all have a profound, powerful element in them for quickening our mental education and uplift! The thrilling

emotional pieces, though short-lived are like the electric switches to enlighten our outlook and character! A piece of sweet music falls on our ears and we are electrified! Our slumbering heart-strings are on thrill and they throb and tremble in a tremolo of feelings! The soft melodious tunes do romantically fall in love with our feelings! Our emotions mellow soft, with a toneful touch of romantic beauty? Hairs stand on end—and our Life seems to stand on the tips of standing hairs like the twinkling drops of dew upon the morning grass! Tears well up to our eyes and trickle down in a melodious rhythm! And through the silver glistening of a tear or two we get a glimpse of that Heavenly Light! It is only now that our eyes have found the real 'object' to be seen? Our eyes catch those little glittering sparks of that light and retain them within. Once recognised, we can hardly forget the great influence and the romantic pining for that grand apparition again will be the most dramatic part of Beauty Culture! A love of Beauty is ingrained in us; and we are ever in quest of what is good and beautiful! Our vision is broadened and our outlook is widened to the utmost catholicity of character. We begin to love Nature and her myriad mysteries! The shy, ashy hue of morn with its enchanting back-ground-music of the grand Orchestra, has a touching influence and soothing effect on the mind. We love natural scenery; we love toneful

colours; we love all the subtle checks and shades! Evening calm and serene with its dewy dusk lurking behind, the incense-breathing fields after a light shower of rain, the hazy clouds of homely slate-blue smokes rising lazily from the cottages grey, all have a great soothing and balming effect on our mind! Life seems to be nothing but a soft sailing 'something' in the air!

Before you fully undergo these above mentioned treatments, I am sure that some one will remark on you, "This person has *something* in him! Whatever we keep inside, whatever we store in us, it has to come outside! Our eyes are lighted and they shine with a divine effulgence! There is grace and beauty in the looks! The eyes whisper low and mean something deep—The whisper can be heard and understood—but never can it be said or explained! There is something emotional in the looks. There is calmness, serenity and restfulness beneath the hazel eye-lids drooping down in a dreamy twilight of Love! There is something inexpressible in the looks, which dances in the face in a melodious rhythm; And can you admit that it is Beauty?

I do not conclude, however, that Beauty should come solely from inside alone! I do not say that. But, what is the real use of polishing a box without the jewel in it? I do not say that you should not polish the box—but first put the jewel in the box and then begin polishing it!

Prevalence of Caries.

—The teeth of man have been affected by caries from the earliest times. J. F. Colyer says that the Rhodesian skull, belonging to a race which existed long before the present type of human beings was evolved, shows caries of many teeth. Thus, it is clear that caries prevailed from the ancient times to the present day.

In olden days, we found caries in the mouth of uncivilized people but, to-day we find caries in the mouths of most civilized people. Among modern civilized races the percentage of mouths containing carious teeth have increased very considerably. This is because modern people take more of soft carbohydrate food and they do not pay much attention to oral hygiene.

In South India, we find more of carious teeth than in Northern India. The table below shows that clearly:—

No.	Name of the place.	No. Examined	No. of Cases showing carious teeth.	Percentage.
1	Northern India.	152	14	9 %
2	Southern India.	71	10	14%

Now, let us consider what is meant by Dental Caries:—

Dental Caries can be defined as a decalcification of the enamel and dentine of the tooth by organic acids, which have resulted from the fermentation of carbohydrates in the mouth and is usually associated with and localized by mucoid plaques or films,

DENTAL CARIES

By S. K. Nilker, L.D. Sc.,

Dental Surgeon, 1/174, Broadway, Madras.

Exciting Causes.—Carbohydrate food sticks to the pits, fissures or areas which are not brushed by lips, cheeks and tongue (i. e., interproximal surfaces) even when the teeth are properly brushed. In unclean mouths it not only sticks to the above mentioned areas, but in addition to the gingival margin or in any part of the tooth. Acid forming bacteria, such as streptococcus brevis; necro-dentalis, straphylococcus albus, which are always present in everybody's mouth act on the carbohydrate food and ferment it producing a colony of their own, forming what is known as a bacterial plaque, something like a thin membrane. This becomes very adherent to the tooth and does not easily go by brushing. (It will only go when a dentist cleans the teeth.) The acids formed act on the calcium salts of the tooth and dissolves it as calcium lactate. The commencement of the process makes itself manifest by the loss of polish and translucency of the enamel over the affected area. As it advances, a white spot appears at the affected place and then after some time a black cavity appears on the spot owing to the washing away of the softened enamel substance. Progressing still further, it attacks the dentine which first softens, undergoes disintegration and liquefaction by the action of bacteria capable of digesting the softened dentine leaving a large cavity in the tooth.

Predisposing Causes.—Age, sex pregnancy, conditions of saliva, structure of teeth, lack of oral hygiene, children's diseases and diet.

Age:—No other disease is so common among children as tooth decay. In the leading Indian cities from 50 to 60% of all school-children have decayed teeth. So, it can be safely said that most of dental problems of early adult life, middle age and even old age are the out-growth of neglect during childhood. Therefore, children's teeth must be often examined by a Dentist, and it is necessary that every school must have one Dentist to look after the children's teeth.

Sex:—The incidence of dental caries is higher in female children than in males of the same age and living under the same conditions. The reason for that is, that teeth tend to erupt rather earlier in females than that of male children.

Pregnancy:—There is an increase in caries during pregnancy period.

Conditions of Saliva:—If the saliva contains more of acid, it will increase the caries, and on the other hand, if it is more alkaline, it will check the caries.

Structure of teeth:—Structural defects also predispose to dental caries by providing stagnation areas which are uncleanable either by physiological or artificial means.

Lack of Oral hygiene:—Unsound teeth and unclean mouth cause caries.

Children's diseases:—Many teeth with poorly formed and pitted enamel are the result of some disease which the child had when the teeth were forming. Measles, chicken-pox, small-pox, scarlet fever, and rickets may cause poor teeth, that decay and break down easily.

Diet:—Sticky carbohydrate foods cause dental caries.

Signs and Symptoms of Caries.—

(1) Lodgement of foodstuff.

(2) White spot in the place of decay.

(3) White spot turning into black with the advancement of decay.

(4) Cavity formation.

(5) Beginning of pain though very slight.

(6) Pain becomes severe on the cavity extending to the pulp at first, and then gum abscess starts with shooting pain.

Sequence of events in Caries.—There are two things possible when once the caries has set in.

(1) Progressive caries.

(2) Arrested caries.

Progressive caries.—In progressive caries, in due course the pulp is affected, gum abscess starts and it ultimately ends in extraction and thus one of the most beautiful natural teeth is lost and the natural tooth once lost can never be duplicated.

Arrested caries.—Sometimes, the progressive caries get spontaneously arrested, why and how it happens is not definitely known, but it is believed to be due to general improvement in the health of the individual. Under these circumstances, the exposed dentine is quite hard and black and it would not give rise to any pain at all. But, this seldom occurs.

Frequency in Individual Teeth.—The various groups of teeth in human beings are subject to caries in different degrees. The first permanent molars (or 6th year molars) are more subject to caries than other teeth and mandibular more than the maxillary. The liability of the third molars to caries in mouth where all the teeth are present is attributable to difficulty in keeping them free from lodgement of food debris.

Decayed teeth make many poor students.—It is an old story known to every teacher that a poor student may become one of the best students

in the room when his teeth are repaired. Remember this fact if your child's teeth have not been examined and he is having trouble with his school work. How can mind be alert and stick to lessons when the body is being poisoned constantly by infections? Decayed teeth may become so sore that the child does not chew his food properly. Instead he swallows it almost whole. This is one of the most common causes of indigestion in children. It makes the child cross and irritable. He cannot keep up in school, nor enjoy his play.

If you want to prevent caries, you must follow the rules below:—

(1) You should brush your teeth regularly after every meals.

(2) You should eat fruits and hard foods which require mastication; it keeps the teeth strong and healthy;

soft food tends to decay the teeth quickly.

(3) You should visit your Dentist every six months; let him prevent what may be hard to cure afterwards.

Rules to make teeth last a lifetime :

(1) Give your child tooth-building foods such as milk, vegetables, fruits and cod-liver oil.

(2) Teach the child how to keep his teeth clean, by brushing them regularly in the right way.

(3) Guard his general health; protect him against the various children's diseases, and see that he gets plenty of exercise and sleep.

(4) Look at the child's teeth often and if you think anything is wrong take him to the Dentist at once. In any event, be sure that he sees the Dentist at least every six months.

References :—

1. *J. F. Colyer's Dental Surgery and Pathology.*
2. *Dentistry and Public Health—An American Magazine.*

Laughter as a Health Promoter

DR. GREENE says that there is not the remotest corner or little inlet of the minute blood vessels of the human body that does not feel some wavelet from the convulsions occasioned by good hearty laughter. The life principle, or the central man, is shaken to its innermost depths, sending new tides of life and strength to the surface, thus materially tending to insure good health to the persons who indulge therein. The blood moves more rapidly, and conveys a different impression to all the organs of the body, as it visits them on that particular mystic journey when the man is laughing, from what it does at other times. For this reason every good hearty laugh in which a person indulges tends to lengthen his life, conveying, as it does, new and distinct stimulus to the vital forces.

BY M. ARUNACHALAM,

GOLDEN ROCK.

It is a well known and easily demonstrated scientific fact that different people sound different vowels when laughing, from which fact a close observer has drawn the following conclusions. People who laugh in 'A' (Pronounced as 'Ah') are frank, honest and fond of noise excitement, though they are often of versatile and fickle disposition. Laughter in 'E' (Pronounced as 'Ay') is peculiar to phlegmatic and melancholy persons. Those who laugh in 'I' (Pronounced as 'Ee') are children or simple-minded, obliging, affectionate, timid and undecided people. To laugh 'O' indicates generosity and daring. Avoid if possible all those who laugh in 'U' as they are wholly devoid of principle.

FOOD CONTAMINATION FROM VESSELS

MADRAS HEALTH MINISTRY'S PRESS NOTE

The Government have issued the following Press Communique, giving information to the public regarding contamination of food through vessels used in Indian households :

The Government consider that the following information regarding the contamination of foods through vessel will be of use to the public and they accordingly publish it for general information :—

Vessels for storing and cooking food form an important equipment in an Indian household. The vessels generally used are : (1) earthenware and soap stone, (2) porcelain and enamel, (3) glass and (4) metallic.

Earthenware and Soapstone Vessels

Vessels made of earthenware are not only the cheapest but most hygienic. Practically they are unaffected by exposure to air or to the process of cooking. They do not, unlike metals, enter into chemical combination with the food elements and deprive the food of its flavour. The only disadvantage is that these are easily breakable and require thorough and careful cleaning as the pores are not readily accessible. After use, they should be thoroughly cleansed and exposed to air and sunlight for drying till they are again required for use.

Porcelain and Enamel Ware

Porcelain is not suitable for heating purposes. Regarding enamel wares only the better and costlier variety should be used. The glaze or outer white or coloured coating of these vessels sometimes contains fluorides and oxide of antimony which are poisonous. Fluorides give rise to teeth troubles.

Glass Vessels

These are not suited to our conditions. They break easily leaving sharp

edges, which would be a source of danger, especially to children. If these break, people should see that they are collected carefully, especially the small particles, with a wet towel, and thrown into public dust-bins or in a place far away from human habitation.

Metallic Vessels

As far as possible everyone should use only the minimum number of metallic vessels. Metals are all liable to corrosion, i. e., they are transformed on exposure to air and water into different chemical substances. These are more readily attacked by the food or water with which they come in contact. Under the conditions of cooking the metals themselves may rapidly go into solution in the food. The salts so dissolved might act injuriously on the health. However, if the metal surface is kept quite bright and polished, it is less liable to be attacked by the food constituents. The South Indian method of giving a coating of mud or starch before they are placed on the hearth for cooking and also the practice of cleaning first with a coating of tamarind and then scrubbing with ashes, are based on scientific principles and should be adhered to.

Lead Vessels

Of all the metallic vessels those that contain lead are the most insidiously poisonous in character and consequently to be eschewed altogether. In the southern districts of this province, especially in Tanjore, Trichinopoly and Tinnevely, women vie with one another in getting as many of these lead vessels (familiarily known as 'Iyya chombu') as possible. These, though supposed to be made of tin, actually contain lead in varying quantities. Lead salts are poisonous and some of them

formed in the process of cooking, especially soups (sambar, rasam and the like) in lead vessels impart a sweet taste. Lead salts are cumulative poisons. Their baneful effects are not produced at once. They are not thrown out of the system, but begin to accumulate little by little and ultimately are locked in the tissues and when sufficient quantity has collected, cause anæmia, constipation, stomach pain and a host of other ailments.

Copper, Brass and Tin Vessels

These, if kept clean, serve well for storing and transporting water, but copper and brass are not to be recommended for cooking purposes. Milk, if boiled in copper vessels, loses its flavour and is deprived of part of its vitamin A. Brass vessels intended for cooking rice are generally given a tin coating. For reasons stated above, the tin should be quite free from lead.

Further, tinning of vessels is ordinarily delayed till the tin coating is peeled off. The corrosive action with such a pitted surface is considerably increased and more of the metal is likely to be dissolved by food juices. It is essential that tinning should be done at very frequent intervals to avoid this possibility. Besides, tinkers generally add lead or zinc or both in tinning for the sake of cheapness and easier workability. These are poisonous and consequently the tinkers should not be allowed to use their own 'tin' for this purpose.

Aluminium Vessels

These can be used for boiling milk and water. Generally speaking aluminium is the least toxic of the metals commonly used. If used for cooking especially in presence of salt and tamarind, they are rapidly attacked and lose their lustre which cannot be restored.—*The Hindu* (23-11-'38.)

● Health Tit-Bits ● ● ● ●

Hot Baths

HOT baths to relieve exhaustion are mentioned in Homer 3,000 years ago and were first derived from natural hot springs. The Greeks and Romans enjoyed luxurious hot baths, which were continued on a less magnificent scale through the Middle Ages, until the spread of syphilis, after the discovery of America, made people shun the public baths through fear of infection. Paradoxically, hot baths were again begun as a treatment for syphilis and were systematically used for that purpose in Japan, and the modern heat treatment was first instituted to combat dementia-paralytica. — *Medical World*.

Dec. 1938]

Acid in the Eye

ACID in the Eye is just as unpleasant as alkali in the same place. But, it is not worth while trying to neutralise either of them. To do so is to waste valuable time. There is one good remedy which is always available. That is tap water. Thorough washing with tap water is the best first aid, and the finest treatment, for all eye injuries caused by liquids or fumes. But, it is wise to be guarded in prognosis. Injury to the cornea does not always show up on the first day and caustic burns will not reach their full effect for many days or even weeks. — *Medical World*.

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Fever during the Eruption of Teeth in Infants

THE onset of fever in association with teething is said to be due to the infection of the tooth sockets.

The fever is an indication of the reaction produced by the entrance of bacteria from the tooth sockets into the blood stream.

The fever appears from 8 to 21 days before the eruption of the tooth and may be accompanied by marked general disturbance. Disorders due to teething are believed to be more common than is generally accepted. About 10% of all children are so affected, and in 5%, medical treatment is required.—*Medical World*.

* * *

Freeing the Air of Dust by Electricity

UNDER the influence of a powerful electrical current, minerals and other substances throw off into the surrounding air millions of minute particles known as electrons. These particles carry electric charges and so are attracted by magnets.

When flying through the air if an electron comes in contact with particles of dust, spores of plant, or other floating substances, they attach themselves thereto, and if attracted by a magnet, carry the particle along. Making use of this principle, a machine has been constructed by which the air of an enclosed place may be freed from dust, spores, or floating particles of any sort.

The apparatus has been tested in the treatment of numerous cases of hay fever and certain forms of asthma, and has proven successful in every case. The efficiency of the apparatus is so great that the air of a room may

be completely freed from floating particles of all sorts, as smoke from tobacco, coal, or other sources. Fortunately, this useful appliance is not expensive, and so may rapidly find its way into thousands of homes where relief from dust-contamination of the air is needed.—*Good Health (U.S.A)*.

* * *

A New Source of Vitamin D.

FOR a long time, fish oil remained the principal source of vitamin D. A discovery made at the University of Wisconsin brought to light the fact that vitamin D is produced by the action of the sunlight upon the skin. This seems, in fact, to be the chief source of vitamin D, one of the essential vitamins which is especially needed for promoting the development of infants. Without vitamin D; the growing infant cannot gather from its food and deposit in its bones, the lime necessary to give to its skeleton the rigidity necessary to enable the limbs to retain their proper shape.

It is now announced by a Chicago scientist that ergosterol, a fatty substance in which vitamin D. is developed when it is exposed to ultra-violet rays received from the sun or produced by electricity, may be charged with Vitamin D by exposure to an electrical current or radiation from high voltage.

The *New York Times*, which is always foremost in the announcement of new scientific discoveries, tells us that an electrical bombardment of only nine minutes will produce in a vacuum tube a film of solid ergosterol impregnated with vitamin D. It is entirely possible that this source of vitamin D. may prove to be so much more practical than the Steenbock process that the cost of this useful food accessory may be considerably lessened.—*Good Health (U. S. A.)*