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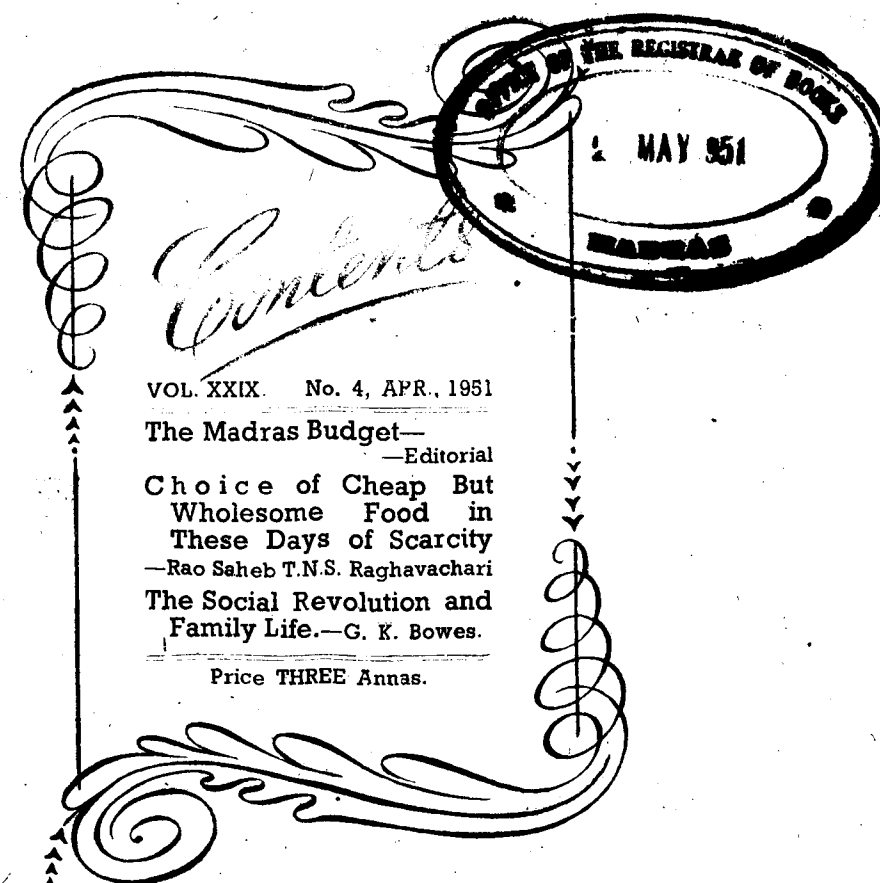
HEALTH

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A JOURNAL DEVOTED TO HEALTHFUL LIVING

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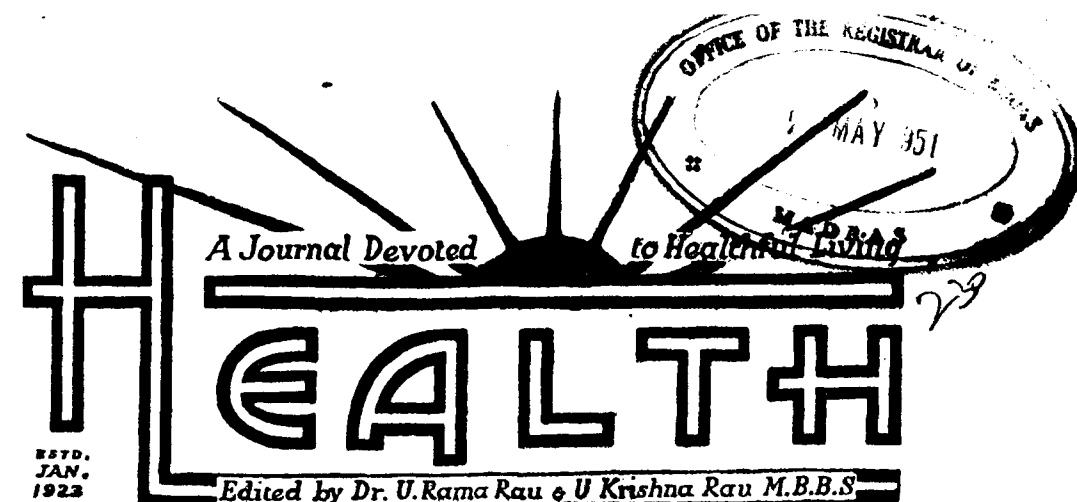
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APRIL, 1951

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THE MADRAS BUDGET

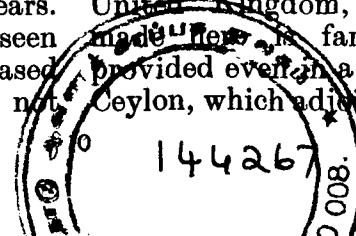
FROM 44.10 lakhs and 23.78 lakhs in 1920-'21 for the Medical and Public Health Departments respectively to 312.14 lakhs and 131.47 lakhs in 1951-'52 might, to a superficial observer, appear a long jump forward. But we have to take into account the enormous increase in the revenues in these years and also the great increase in the population during these three decades. The total revenues of this province under various heads which were 16.19 crores in 1920-'21 have risen to 59.62 crores according to the budget estimates for 1951-'52. The census has just been completed and we have not yet been furnished the actual figures of the total population of this State to enable us to find out the increase in the percentage of the population during the last ten years. But in every census we have seen that the population has increased considerably, and it would not

be far wide of the mark if we estimate the total increase during these thirty years at about 30%. In the circumstances, in judging how far the Government of Madras have accelerated improvements in these two departments, we have to take into consideration the above two factors which have a large bearing on this problem.

It is true that since the Congress party accepted office, the position has been considerably improved. From 1.80 crores and 54.48 lakhs in 1945-'46, the provision has been increased steadily to the present figure. Leaving aside for comparison purposes the expenditure incurred in the advanced countries of the West, as for instance the U.S.A., and the United Kingdom, the provision made here is far below that provided even in a small country, Ceylon, which adjoins us. We have

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it from official statements that the per capita expenditure on Public Health in Ceylon is between Rs. 8 and Rs. 9. This shows that our State lags far behind and has to make considerable leeway if it is to attain parity at least with Ceylon, not to speak of other advanced countries.

Explaining the provisions in the budget for the year 1951-'52, the Hon'ble Shri B. GOPALA REDDY, our Finance Minister, admitted that "the health of the people is the primary concern of every modern State." But he qualified it by saying that "this Government have also been endeavouring to do their best in this direction; but owing to various limitations, their achievements might not have been spectacular." It is not something spectacular that the people want. They are quite prepared to be satisfied if their absolute minimum requirements are satisfied. But only the outer fringe of the problem of rural medical relief has so far been touched. As stated by Dr. K.C.K.E. Raja, Director-General of Health Services, Government of India, in his second lecture at the Medical College, Madras on March 13, "the problem of rural health had two aspects, namely an extension of health services into the rural areas on an adequate scale as quickly as possible and reorganisation of community life in order to improve the standard of living of the people and to promote an enrichment of their life through the development of social and cultural activities." In regard to the first aspect not only has no further improvement been planned but also some of the institu-

tions started under the Rural Medical Relief Scheme are being closed down. The Government state that this is due to lack of personnel. And it is of their own making. Had proper attention been devoted to this matter and more and more Colleges established, the situation would not have deteriorated to the present extent. "The number of seats available annually in the Colleges of Modern Medicine in this State has," according to the Finance Minister, "risen from 252 in 1945-'46 to 330 at present." "The Government also propose," he added, "to open a new Medical College at Mathurai and convert the Medical College at Guntur into a full-fledged one, so that additional personnel can be trained there itself, instead of being counted against the increased provision made in the Andhra Medical College." While we admit that according to the adage that something is better than nothing, this is an improvement, we have to point out at the same time that this falls considerably short of the absolute minimum requirements. Out of 3.12 crores set apart for the Medical Department in the Budget 1.02 crores is allotted for capital works, leaving but 2.1 crores for other purposes. This, we should say, falls considerably short of the requirements even for a conservative graduated scale.

As regards the second aspect referred to by Dr. K. C. K. E. RAJAH, the provision for Public Health does not show any noticeable improvement. As pointed out by *The Medical Officer* in its editorial extracted elsewhere, while

we have the knowledge of the measures needed and the will is there financial stringency is said to stand in the way of further improvement. "We must," as the Journal says, "present health education in such a way that the attainment of good health seems worthwhile and possible of achievement by simple and not uncongenial means." In the budget for 1950-'51, a sum of Rs. 58,500 was set apart for health propaganda and publicity. But according to the revised estimate a sum of only Rs. 10,400 has been spent, leaving the rest to lapse. In the budget for 1951-'52, a sum of Rs. 98,000 has been set apart for the purpose. But whether this amount would be spent or the same old story repeated, it is too soon to say. But having accepted the basic principle that the health of people is the primary concern of the State, it is the duty of the Government to take adequate steps to discharge that responsibility. Only when this problem is solved, and solved satisfactorily too, can the nation prosper.

Further Study of Tropical Housing in Asia Recommended

Development of a programme for international cooperation in the fields of housing and town and country planning in the Asian region is recommended in a report prepared by a special mission of the U. N. Social Commission.

The mission conducted preliminary studies in India, Pakistan, Thailand and the Federation of Malaya and Singapore during late 1950 and January of this year. Two members of the mission also visited Indonesia.

In its report to the United Nations, the mission included several comments of U. N. Secretary-General Trygve Lie on the mission's findings. Lie has stressed that if housing and community development are to be based on the best possible standards they must be planned as part of an overall national policy of social and economic development.

The mission itself recommends a complete survey of tropical housing, including an intensive study of housing financing.

In adding to the mission's recommendations, Lie suggests that the Social Commission can initiate one or more group training projects in South and South East Asia under the U. N. Technical Assistance programme. These centres could offer a course in building techniques as part of the programmes for basic education and community development inaugurated by the United Nations and its specialised agencies.

Lie also proposes that the Economic Commission for Asia and the Far East (ECAFE) might develop a programme to initiate activity in the fields of housing and town and country planning. With careful development of the building materials and construction industries, Lie further observes, housing and community development could "constitute a major economic activity within a balanced economy."—*U.S.I.S. Extract.*

Choice of Cheap But Wholesome Food

In These Days of Scarcity

"HEALTH is wealth", and "prevention is better than cure" are two wise old sayings which should be religiously followed in our everyday life. One of the essential factors which make for healthy living is wholesome, nourishing food. By nourishing food is not meant *Halwa, Vadai, Pongal and Bholi*. These should be eaten sparingly and only occasionally. If used daily they are bound to make one sick and unhealthy. If you wish to live a healthy and happy life devoid of sickness and its attendant worries, the food you eat should be wholesome, and capable of being easily digested; you should eat only just enough to give you the requisite quantities of the essential food factors (proteins, fats, carbohydrates, salts and vitamins), in an easily assimilable form.

At the present time, when there is an acute scarcity of food materials, and the prices of the available commodities are soaring high, it is indeed very difficult for people to maintain their health absolutely unimpaired. The food problem has now become a world-wide one, and with the exception of a few fortunate countries, the rest of the world is passing through what may well be called a food-famine.

This state of affairs was brought about, by the failure of seasonal rains, by excessive floods due to heavy rains, or by locusts and other agricultural insect pests and fungus diseases. It, therefore, became

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necessary to have recourse to food rationing and at times even ruthlessly to cut it down to the barest minimal levels, in order to provide for an equitable distribution to all. Under these conditions, public health is bound to be adversely affected to some extent.

People naturally find it very difficult to adapt themselves at a pinch, to the changed conditions of living, necessitated by the acute scarcity and phenomenally high prices of food materials. And yet, it is imperative that we should alter our time-honoured ways of living, and adapt ourselves to the exigencies and stress of the times, in a manner consistent with our means, status and environments. Otherwise, there will be serious difficulties and danger to health.

Quite recently, the Union Food Minister and, following in his wake, some of our State Ministers, counselled the total abstinence from cereal foods and grains for one day in a week and the exclusive use instead, of vegetables for that one day. It is very good advice indeed but people started saying:—

"It is all very fine to talk of an exclusive vegetable-day in the week. Are vegetables so plentiful and abundant as all that? Is there

enough grown to feed the population of India and is it made available at reasonably cheap rates? The vast majority of our people are poor, and their average monthly income does not exceed Rs. 60 or Rs. 70/- and how can they afford to spend a third of their earnings in buying enough vegetables and fruits for their families, consisting in most cases of over 5 or 6 members per family? Most of us have not enough to get even the rationed supply—poor in quality and inadequate in quantity. What is the use of telling us about the virtues of eating vegetables every day to maintain health?"

One need not be surprised at this frightful battery of questions. For, most of our people have not been taught to learn and realise that it is perfectly possible even during stressful famine times, to adjust their modes of living and live healthfully, if only they exercised some forethought and discretion in the wise selection and proper use of the food materials that are readily available to suit their purses.

The poor people (the labouring classes) in South India ask, "What, sir! we poor folk in South India have for generations been only rice eaters and have never even seen wheat. We are now forced to buy wheat, make *Chappathis* out of it and eat them! *Chappathis* are all right for those who can afford to get oils, butter and ghee. Gingelly oil sells at 3½ Rs. a viss, and ghee at Rs. 9 per viss; without some kind of fat along with it, the *Chappathi* tastes like leather. It does not agree with our palates and stomachs. It constipates us, and even

produces dysentery in some of us. We also lose our appetites by using such leathery food. Further *Chappathis* require redhot live charcoal toast to them. The price of charcoal is Rs. 5-8-0 per *gundu*. Firewood sells at Rs. 1-8-0 to Rs. 2 per *gundu* and can we afford to make live cinders by burning firewood and make *Chappathis*? We use only twigs, leaves and cowdung cakes for boiling our scanty ration of rice, ragi or cholam; *Chappathis* cannot be toasted well over these quick-burning ash-forming twigs."

These objections look indeed formidable and even difficult to overcome. If however, one is determined to safeguard his health it will not be a difficult matter to get over many of these seemingly great obstacles. Now, for instance, the problem of making and eating wheat *Chappathis*, which looms so large in the eyes of the poor man, can be solved quite easily. Even the poor labourer can get a couple of green chillies, a bunch of some kind of greens, or/and a small quantity of any cheap green vegetable or root such as sweet potato, and one or two tomatoes (all of these being rich in the accessory food factors). Chop all of them and cook them together for a few minutes in a very small quantity of water with a little salt and a teaspoonful of cumin seeds (*Jeerakam*). This will furnish a most delectable and appetising side-dish for use with *chappathis*. *Chappathis* can be eaten and digested easily in this way. They will furnish the required (calories) energy and vigour and help to keep the system in a sound condition. There is no need for

butter, ghee or oil. As for making the chappathis, one can use the twigs and cowdung cakes for fuel and over that slow fire an iron pan or mud pot (inverted) can be heated to the required degree and the previously prepared chappathis toasted nicely. They do not require excessive or intensive heat to toast them nicely.

With the upper middle class and the aristocracy, the problem is not poverty or/and paucity of food materials nor facilities for making healthful and tasty dishes. Their trouble is mainly due to neglect and indifference. They indulge in rich and indigestible sweets and savouries fried in fats, and drink numerous cups of coffee, tea and other beverages every day. They ruin their appetites by doing so; and they rest content with whatever the cook prepares and serves at home. They seldom care to ascertain what foods are wholesome and prepared in what way. Their children are also brought up in the same atmosphere of indifference to dietetics. These youngsters do not care to follow any rational regimen, as to the time, method and manner of feeding. They sit at their dinner-leaf and just taste a little of this and a little of that, just as a squirrel does, gulp down a few mouthfuls with some water, and rush to school, office, cinema or the play ground. Dishes fried in fats are alone liked by these young people. Health-giving dishes composed of green vegetables, stewed in their own juice, are carefully eschewed!! Their tiffin is usually obtained from hotels and eating houses and is largely composed of dishes of sweets and savouries (fried in

hydrogenated oils of high melting points). These are liable to upset even hardy stomachs. The wholesome tiffin, which their grandparents used in their school days, composed of rice and curds with delicious vitamin-containing mango and lime pickles, is considered unsuitable by the modern youngsters of the middle and upper class families. The poor and rich alike, at the present day, are thus blissfully ignorant of the dietetic value of food materials; though they read of them in books at school, they do not care to observe the wholesome advice in practice.

Vegetables and fruits occupy a most important and prominent place amongst food materials which are essential for healthy happy living. Even in times of stress and scarcity, such as we are experiencing during the last ten years, it is quite feasible, with due care and circumspection, to choose and procure suitable vegetables and fruits to suit one's purse at a reasonably cheap cost. These should be such as would maintain the human system in sound health. Carbohydrates, proteins, fats, salts, and vitamins are the essential food factors for proper nourishment. Non-vegetarian diet, (meat, fish and poultry is no longer considered absolutely essential for healthy living. There are millions of people all over the world, who are keeping fit and maintain robust health, without taking meat food; and there are thousands of people amongst regular meat-eaters who are perpetually sick. The vegetarian's diet has lately been acclaimed by renowned scientists

and dietiticians as furnishing adequate nourishment, nutrition, vigour, brain power and sharpness of intellect.

Vegetables and fruits require suitable and adequate manure for their growth. Composted domestic refuse, (including animal excreta, leaves etc.), crude or/and treated sewage, and chemical fertilisers are the three principal types of manures used for vegetable gardens. Vegetables grown with composted domestic refuse are rightly considered, to be the best. They are also more satisfying to the palate. Vegetables grown on lands irrigated with crude sewage are liable to harbour hookworm and other infective organisms on their surface.

All vegetables and fruits should be well cleaned in a stream of running tap water, or if in a vessel or tub by using two or three changes of clean water, before they are taken up for dressing. As nearly all our vegetables are boiled or heated in some way, we may take them with impunity. The vegetables we use raw, without boiling, in salads, Kosumbaris and Pachadis, are cucumber, tomatoes, green coriander leaves, green chillies, and curry leaves (used to flavour buttermilk); also the betel leaf chewed with arecanuts and *chunam*. The results of recent researches show that these can be used raw, without danger of being infected, if they are *very well rinsed and cleaned* atleast in 2 changes of clean pure water, before dressing them for the table. They are usually mixed with curds, salt, lemon juice, *asafoetida*, all of which exert a mild

bactericidal and clearing action besides adding taste to the final product.

I will next, give some useful hints on how to choose cheap but nutritious food materials and derive the maximum benefit out of them.

The sweet potato is indeed a divine gift at the present juncture. It should be used by all more often and in sufficient quantity. It is not rich in protein but the small amount present in it is of very high quality. It contains all the three vitamins A, B and C in abundance. It is sweet to the taste, and contains also iron. It is cheaper than the other roots and tubers like the potato, yam etc. and can be purchased by even the poor. Groundnuts form yet another valuable article of food; it is very rich in fat, and contains plenty of proteins, also A and B vitamins. In these hard days, when vegetable oils, butter and ghee are very expensive and difficult to get, groundnuts are indeed, valuable additions to the poor man's diet. Even this useful article of food is becoming costly. In rural areas, however, it is still a popular and easily available item of food among the poor, atleast during the groundnut season, and for some time thereafter.

Leafy greens contain carotene—the precursor of vitamin A—in abundance as also the vitamins B and C. They are relatively cheap and within the reach of even the poor. There are quite a large variety of greens, one or more of which is always available throughout the year. The choice is

thus wide and includes Mulaikeerai (Amaranth), Araikeerai, Murungai (Drumstick leaves), Agathikeerai, Ponnanganni (rich in copper also) Menthi greens, Manathakkali (Solanum), Pasalai (Spinach), Gonkooora (Hibiscus), Pudhina (Mint) Coriander leaves. All of these are rich in organic iron—easily assimilable. The green vegetables and tubers, which are comparatively cheap and easily procurable during most of the time, and which give good food value include cluster beans (Kothavaraikai), brinjals, beans, cucumbers, pumpkin fruit, tomatoes, radish, carrots and sweet potatoes. The bitter wild-growing Sundaikai (Solanum family) which is dried and sold in bazaars contains 25 per cent of organic iron, nearly as much as is contained in tender leafy greens.

In cooking vegetables, the following precautions should be observed, so as to preserve the maximum food value in tact: (1) the leafy vegetables should be cooked lightly in a very small quantity of water over a slow fire, without covering it with a lid; (2) other vegetables should not be minced too fine, and are best cut into fairly big bits and cooked gently in a very small quantity of water; (3) all vegetables are best stewed in their own juice and served with the gravy and juice in tact; (4) soda bicarbonate should not be used in cooking vegetables, as it destroys all the vitamins and neutralises acids and salts; (5) avoid as far as possible, dishes fried in fat as overheating destroys all the food value and as fried food is liable to produce gastric upsets.

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Fruits:—Tomatoes are comparatively cheap and are available nearly all the year round. They are excellent fruits containing plenty of the essential vitamins A, B, and C. They are suitable for eating as such, for making salads and for adding to rasam, sambhar and kootoos. The Indian Gooseberry—*Nellikai* (Amalakam) and the dried *Nellikai* pulp are exceedingly rich in vitamin C. In fact one of these small fruits will furnish as much of vitamin C, as two large fresh oranges. Limes and lemon are also excellent fruits. Used every day either as lime-juice with sugar and water, or added to butter-milk or salads, they provide vitamins essential for preventing scurvy. *Papaya* is yet another most valuable but cheap fruit which will give radiant health to the regular user. It can be grown with little or no trouble and attention in every house or hut and will provide plenty of fruits right through the year. The raw immature fruit can be cooked into delicious curries.

The condiments and spices we use to make our dishes palatable comprise pepper, chillies, ginger, cumin seeds, fenugreek, coriander, turmeric, asafoetida and mustard; all of these are very rich in organic iron and contain large quantities of carotene, the precursor of vitamin A. They are thus best suited for the maintenance of health, and prevention of disease. We should admire and feel profoundly grateful to our ancient forefathers who displayed considerable sagacity in selecting such wonderful food materials for healthy and happy living.

[Health, Apr. '51]

The following is a specimen menu, intended for use under modern conditions by the poor man on which he can maintain good health. The daily expenditure on the items included will not exceed a rupee at the most.

Rice 8 ounces; wheat 2 ounces; dhal one ounce; milk (including buttermilk) 8 ounces; groundnuts 2 ounces; vegetable oil 2 ounces,

sugar or/and jaggery 2 ounces; leafy greens 4 oz; vegetables such as cluster beans, brinjals etc. 4 ounces; tomatoes 4 ounces; sweet potatoes 4 ounces; green chillies, coriander and curry leaves and condiments, small amounts of each. These will furnish 2500 calories as also other food factors in sufficient amount.—(Courtesy A.I.R.)

Cardiac Massage Succeeds After 7 Hours

THE following occurs as an annotation in the *Lancet* for 6th May 1950.

Few doctors would now contend that when a patient's heart stops in the operating theatre the best thing to do is to inject camphor or some other analeptic. More than a generation of medical students have been taught that the only hope lies in cardiac massage which not only stimulates whatever power of contraction the heart still possesses but also supplies blood to the cardiac muscle and to the cerebral cortex. No more than a few minutes may elapse between cardiac arrest and the start of the cardiac massage if the manoeuvre is to succeed and that may be why so few permanent successes have been reported. Resuscitation by this means is always dramatic and it is under-

standable that even a straightforward case has news value. The case lately reported in the *New York Times* of 20th April, 1950, however, has special claims to novelty. A man of 65 was having an abdominal operation when he collapsed and the anaesthetist said he was dead. The operating surgeon, thereupon, opened the chest and gave cardiac massage for 2½ hours. At the end of this, the patient was believed to be "again living" and was about to be moved to his room. Then, his heart stopped again. This time cardiac massage was maintained for nearly 4 hours but the patient ultimately recovered and is now walking about the hospital. According to one story (*Sunday Express*, 23-4-'50) he is even planning to take the surgeon with him on a fishing trip!"

A Few Available in Family Closets!

Medical teachers in England are troubled by an acute world shortage of human skeletons. Skeletons for medical teaching usually have been supplied by India, Russia and France, but since the war, France has experienced a shortage. Now, a London Company has moulded its first plastic skeleton complete in every detail of its 206 bones.—(*Philadel. Med. J.*, 4-2-'50).—*Amer. Pract.*, 1-3, p. 271, 1950.

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FEEDING OF Healthy Infants and Children

THE Council on Foods and Nutrition of the American Medical Association has published a valuable report on the subject of infant feeding. Human milk is the ideal food for the young infant, as supplying all the nutritional essentials for the early period with the exception of vitamin D. When human milk is not available cow's milk is to be used in substitution.

Despite all our modern knowledge of infant nutrition and all the current refinements of artificial feeding, feeding at the breast of the mother remains an ideal procedure. This is true despite the fact that human milk contains only a bare minimum of most of the nutritional essentials and the fact that the body composition of the breast-fed baby departs widely from that which preceded and that which follows, in contrast to the body composition of the artificially fed baby, which maintains more closely a smooth continuance of the foetal and post-infancy curve.

Vitamin D is needed early by all babies whether breast or artificially fed. Vitamin C is needed early by artificially fed babies and is a harmless safeguard (not necessary however) for the breast-fed baby. Babies born prematurely have a need for vitamin C somewhat greater than that of babies born at term and this need exists from the time of birth. No need for vitamin A from special sources exists. If modern practice is in error, it errs in the direction of giving too much vitamin D and too little vitamin C and in

not giving either of these early enough.

Additional supplementary foods should be given at not later than 4 months of age in both breast-fed and artificially fed babies. One important function of these supplements is to supply iron and vitamins of the B complex group. Another function is to accustom the baby early to variety in flavour and texture for the promotion of good feeding habits. Anorexia and poor feeding habits, which occur so frequently in older children, often have their origin in feeding mismanagements in infancy.

In a general way the nutrition of the child (in U. S. A.) has been improved to some but not to the required extent possible with present knowledge.

At least three nutritional essentials deserve special emphasis in childhood, namely vitamin D, protein and calcium. Vitamin D is required throughout the growth period, a fact which is extensively overlooked. Milk, as our only constant good food source of calcium, is not taken in sufficient quantity by a large number of children. [Note: This is especially true of our Indian children—due to poverty and unavailability of adequate quantities of milk at reasonable prices]. Protein deficiency is much more common than is generally realised. A diet adequate in protein cannot be arranged fortuitously without the inclusion of milk. Although thiamine is obtained by a large number of

children in quantities scarcely meeting their needs, the remedy lies in better food selection and not in thiamine medication. Enrichment of flour and bread has contributed materially to the desired end; decreased consumption of sugar also should be helpful.

Vitamin A from special sources

is not needed by the normal child. A diet fortuitously deficient in vitamin A is deficient also in other respects. The remedy is a better diet, *not* medication.

The following tables give at a glance the comparative values of the nutrient components in human and cow's milks.

Human and Cow's Milk (Compared).

Type of milk.	Fat	Sugar	Protein (total)	Lactalbumin	Casein	Total ash	Calcium	Magnesium	Potassium	Sodium	Phosphorus	Sulphur	Chloride	Iron	Copper
Human milk.	3.5	7.5	1.25	0.75	0.5	0.5	0.03	0.004	0.04	0.01	0.013	0.014	0.033	0.0001	0.00003
Cow's milk.	3.5	4.7	3.4	0.50	3.0	0.75	0.11	0.01	0.15	0.05	0.09	0.033	0.105	0.00005	0.00002

Average values for each 100 gramme or cc.

Type of milk	Vitamin A Int. units	Vitamin D Int. units	Vitamin C mg.	Thiamine mg.	Riboflavin mg.	Nicotinic acid mg.
Human milk ...	290	5.0	6.4	0.013	0.04	0.1
Cow's milk raw ...	180	2.5	2.0	0.045	0.20	0.1
Pasteurised ..	180	2.5	1.1	0.035	0.20	0.1
Evaporated and reconditioned ...	180	2.5	0.6	0.025	0.20	0.1

Note:—Boiling cow's milk removes most of the vitamins and hence human milk is par excellence the ideal food.

—From the *Jour. Amer. Med. Assocn.*

The Nature and Value of Starch

By far the largest proportion of carbohydrate in our food, occurs as starch. It is in this form that plants store up their food reserves. Nearly sixty per cent of the solids in our cereals and in tubers and root vegetables is made up of starch. Unripe plantains and apples also contain starch which changes into sugar when they ripen into fruits. Starch contains quite a large proportion of glucose units in a chemically combined state. The actual starch in flour, or in potatoes is enclosed within granules, which can be readily seen with a microscope and differentiated as to the sources from which they are derived. Starch granules as such are difficult of digestion, so rice, potatoes, plantain (unripe), wheat, maize etc. cannot be used raw as food. When, however, they are heated in water the granules swell, and burst releasing the starch. The full nutritive value of starch is only then made available to the system.—(From *Food and Nutrition*, Dec. 1950).

Nutrition of Athletes

A GREAT deal of folklore has grown up extolling the peculiar virtue of one or another dietary regimen for athletes, particularly during training for competitions. There is no sound basis for such folklore. This is brought out by the proceedings of a conference of the British Nutrition Society on this subject. The published proceedings make it clear that conclusive investigations are lacking on all points concerned with the nutrition of athletes. For example, it was pointed out that the training allowances for calories have been estimated at some 7,000 per day, a figure which seemed preposterously high. It was noted that athletes usually take large quantities of animal protein, specially meat. On the other hand, it was also noted that certain champions are strict vegetarians, e.g. Nurmi of Finland. Prof. Marrack who presided over the conference summarized the discussion on the latter points as follows:—"It seems that athletes eat meat because they like it and are debarred of many of the pleasures of life and not for the sake of any special nutritive value of meat after absorption." During discussions repeated expression was given to the view that too rigid dietary restriction and denial during training is a factor which may result in the psychological handicap often termed "staleness."

In an attempt to obtain some of the needed basic information, outlined by the above conference, an investigation of Olympic athletes has recently been made by

Dr. W. T. C. Berry and his co-workers while the athletes were in London for the last Olympic game.

Participants of each nationality were housed together and ate either in a common dining room or, on occasions, in a central cafeteria. Food consumption studies were made on 28 subjects from nine nations. These individuals represented ages from 17 to 41 years, a variety of civil occupations, as well as participants in a number of different events. Food consumption study was over a four day period during which time duplicate meals were collected at each mealtime, and plate waste was saved for analysis and subtracted from the values of the duplicate meals. Chemical analyses were made for protein, fat, and carbohydrate. Calories were calculated by the factor 4, 9, 4 for protein, fat, and carbohydrate, respectively.

Protein consumption ranged from 65.0 to 231.0 g. per day with a mean of 139.0 g. These high intakes were due largely to meat, eggs, and milk. The range of dietary intake of fat was from 92.0 to 223.0 g. per day with an average of 137.0 g. Carbohydrate intakes varied from 128.0 to 572.0 g. per day, averaging 390.0 g. The caloric intake was not so high as has sometimes been estimated for athletes; it ranged from 2113 to 4739 daily with a mean daily consumption of 3350 calories. *It was of interest that no consistent difference occurred between the different types of athletes.*

Twenty of the athletes were interviewed concerning their usual dietary habits, their food habits during training, and any alteration during competition. Most of them stated that they were constantly in training, and, hence, little change from their "normal" dietary habits occurred. The majority stressed the value of meat, eggs, and milk in the diet. Sugar, glucose, or salt were mentioned particularly by some of the athletes. Three of them made a point of taking a quantity of sugar in their drinks before a race, 2 took glucose each morning, 2 had glucose on the day of the race, 3 made a point of "plenty of salt in their food" and 2 took salt regularly when in strict training. Two runners took synthetic thiamine daily and one jumper took preparations containing vitamins A, B, C, and D. Most of the athletes considered fat or fatty foods indigestible and avoided eating them in quantity before the event. There was no constancy in food practice on the day of the race.

Blood samples for hemoglobin determinations were obtained from

147 men, 16 to 47 years of age, representing eighteen countries. The mean hemoglobin level was 16.0 g. per 100 ml. with a standard deviation of 1.01 g.; the range was 13.7 to 18.6 g.

For a similar reason, the observations on blood pressure are worthy of note. Average values for 201 men were systolic, 119.1 mm. of mercury; diastolic, 77.4 mm. of mercury. Both systolic and diastolic pressures tended to increase with increasing body weight.—(From *Nutrition Review*, Oct. 1949).

[Note by Abstractor:—In India, our pailwans, boxers and vasthaths, use systematically vegetable protein, every day in the shape of Bengal gram (whole grain, atleast a handful) soaked in water and allowed to sprout lightly, overnight. Most of them also rely on milk and sugar to give them extra energy before a competition. Some prefer to drink freshly drawn milk unboiled. They sternly avoid coffee, tea and other stimulating beverages. T.N.S.R.]

The Extent of Medical Relief Available in Various Countries

Early in 1950, the American Medical Association computed that 201,278 physicians (or one for every 750 persons of the population) were practising in the U.S.A. This is the best showing for any nation in the world. Next to the U.S.A., the largest supply of doctors in relation to the population was in Great Britain where there was one doctor for every 870 persons. Other countries in order are:—Iceland 890; Denmark 860; Canada 970; New Zealand 980; India 6300! and China 25000! The figures for the different States in India according to the Bhore Committee's report of December 1945 are:—

Assam 7509; Bengal 4913; Bihar 11170; Bombay 2218; Madhya Pradesh 14582; Delhi 3586; Madras 6145; Orissa 13145; Punjab 4494; Sindh 9487; Uttara Pradesh 13586.

Total Registered Doctors in India 47524.

Health, Apr. '51]

[Health, Apr. '51]

Food and Arteriosclerosis

A CONNECTION between diet and hardening of the arteries is disclosed in the studies made by Dr. Alfred Steiner, of Columbia. The eating of large amounts of animal fats and oils and overweight apparently have a tendency to cause that condition. It is believed that cholesterol, (found in butter, egg yolk, cream and fatty meats) is the offending agent. It also occurs in the human body. Steiner declares arteriosclerosis to be the greatest single cause of death. It is not, as some believe, an inevitable consequence of the ageing process. Many young persons, including soldiers, have it. Various workers have found that the level of cholesterol of patients with coronary arteriosclerosis is significantly higher than normal.

Observers report that there is little hardening of the arteries, even at advanced ages in China,

Okinawa and Costa Rica. The dietary of the people living in those places is low in cholesterol, protein and calories. In Finland, deaths from this disease were reduced fifty per cent during the war years of 1940-1946, when fats and calories were in scant supply. Statistics of life insurance companies prove the tendency of obese individuals to succumb to consequences of arteriosclerosis, such as coronary or cerebral occlusion. Of eighty young soldiers dying of coronary arteriosclerosis, seventy-three had some degree of overweight.

It has been shown that the cholesterol levels in the body are conditioned by the amount of it in the diet. When the rice and fruit regimen is given for high blood pressure, cholesterol levels decrease.—(*Med. Clin. N. Amer.*, 34, p. 673).

Breast Feeding

In a discussion which followed Dr. F. H. Richardson's address on "Breast feeding" before the 98th annual session of the American Medical Association, Dr. A. G. Romero of Mexico stated: "Mexican women have from very ancient times attributed importance to nursing their children. There is an illustration of this in the old history of the Nahuatl a tube who once lived in the valley of Mexico in which we read that their women were trained to nurse their children. Whenever a woman gave birth to twins the weaker child was killed so that the mother could have milk enough to raise a happy and healthy descendant. This idea was so much impressed in their minds that if a mother died while her child was still being fed at her breast, her soul was supposed to enter the House of Silence where the Lord of Mictlan or *Mictlantecupitli* ruled and from this place she continued to nurse her child. But if the child died during the period of sucking it went to a mansion called *chichihuacuautico*, where there was a large tree from whose branches milk was dripping to feed the child. It is a well recognized fact in Mexico that most of the digestive disturbances in children fed by their mothers were benign (trifling), while most of the disturbances in artificially fed children were serious. Human milk does not require preparation, it is immediately obtained at the proper temperature and free from bacterial contamination. 92 per cent of the city children and 98 per cent of the country children in Mexico are nursed at their mother's breasts.—(*Jour. Amer. Med. Assoc.*, 25-3-1950).

Nutrition and Oral Health

Food is one of the most important factors in the general health of the people. In our country the poor do not have enough to eat of the adequate variety, the wealthy eat too much, but unfortunately not the right food. This factor has gained increasing importance since recent years when the nutritionists have found various types of deficiency in persons due to defective diet. A well-known nutritionist pertinently remarked, "... Nutritional deficiency saps vitality in so insidious a way that the victim may be unaware that enough is wrong to call a doctor....." Since oral cavity is the site where many of the mild nutritional deficiencies are first manifested clinically, the dental surgeon has the unusual opportunity and responsibility of making an early diagnosis. This not only aids him in the treatment of the oral lesions which may be present but it also allows the correction of nutritional deficiencies by the physician at a time when less heroic measures may be required.

It is common knowledge now that dental disease is one of the most prevalent diseases of the present generation. Dental health is largely a personal responsibility. The controllable measures definitely known to influence dental health are: (a) Regular care by the dental surgeon; (b) adequate nutrition; and (c) good habits of oral hygiene. Recent researches have proved that better dental health can be available to many if present knowledge of factors which influence the health of the entire body and which affect the teeth and gums locally is applied to daily living habits. Good dental health like good general health is dependent on good nutrition. A good nutritional meal must contain all the known food essentials. Good nutrition depends upon the proper functioning of the many steps in the digestion, absorption and use of these foods in the body. Before going further it might be well to consider what constitutes an adequate diet. An adequate diet is one that is abundant, diversified and well balanced. It must supply the body with all the food elements required for the growth and repair of tissues and provides as well an adequate amount of heat and energy.

The foodstuffs supplying these requirements are known as nutrients. These are:

1. Proteins:—Nitrogenous substances that contribute to all body tissues.
2. Carbohydrates:—The starches and sugars supplying energy and heat to the body.
3. Fat:—The most concentrated form of energy.
4. Mineral salts:—Required for the building of bones and teeth. They are found in all the body cells and fluids essential to metabolic process.
5. Vitamins:—Chemical substances whose main function is to catalyze the body process.
6. Water:—Principal solvent and a constituent of all tissues.

Chewing food properly is not only good for the digestion, but for the better formation of teeth and jaw. The sheath and wall of the tooth socket contain numerous nerve fibres, so that besides their mechanical function, they form a sensory pad which registers any pressure exerted on the tooth. If the periosteal nerves are stimulated, the local blood vessels dilate and transport an increased quantity of blood to the tooth, that is the more stimuli a tooth receives, the better is its nutrition. If an individual partakes of a moderately coarse diet, which compels him to chew well, his teeth become stronger. If, on the other hand, he subsists only on soft food, his teeth remain inactive and atrophy. Food requiring mastication is a causative factor of good teeth and jaw and prevention of dental decay. Anthropologists who have contributed greatly to the knowledge of the relation of the food texture to the health and development of masticatory apparatus believe that the physiological state of food and the manner in which it is masticated have an influence on the growth and development of the jaws, muscle and teeth. A research was carried with forty-thousand skulls of forty-six different racial stocks, both, civilised and primitive, at the American Museum of National History in New York. It was found that the jaw bones of most of the primitive peoples

were larger and well developed and in better occlusion than those of the civilised peoples. Statistical studies of caries incidence were made and not a single carious tooth was found in the 327 skulls and 3,077 teeth. It was also found that the masticatory apparatus of primitive people were more active and functioned better than those of the civilised people. The logical conclusion is that faulty nutrition alone is not a determining factor in bad teeth and gums and proper mastication has an important role to play.

The texture of food has an important bearing in the physiologic process of the human body. The well-known nutritionist, H. C. Sherman (The Science of Nutrition, page 100) states, "The texture of bread tends to give good physical properties to the food mass as a whole in the digestive tract. The mild acidity of most fruits and the texture of flesh fibre of many of them combine to make fruit, an especially pleasant and wholesome food with which to end a meal, because the properties leave the teeth and gums in a clean, fresh condition and also aid in the

digestion of the meal as a whole". I personally believe that the refined texture of the European style of food and the sophisticated methods of its preparation and consumption are the most important contributing factors in their dental degeneration though Dr. Passmore (Nutritional Diseases of India, pages 89-100) thinks otherwise.

Development of teeth begins before birth, about eighth foetal week and continues until early adult life. During this growing period, all the cells of the tooth-forming tissue must be supplied by the blood stream with the food elements needed as building materials. If any of them are lacking, faulty development may result. No single dietary factor is responsible for the building and maintenance of healthy teeth. Different substances with different food values are needed. [Extracted from the article by Arun Ganguli, Z.D.S. (Vienna), Visiting Dental Surgeon, R. G. Kar Medical College and Hospitals, Calcutta, in *Medical Digest*.]

Public Health Tasks

"It is ironic that when we were a rich nation we had not the will, perhaps not the knowledge, to remedy the evils which deprived the average citizen of a fair chance of good health. Now we have the knowledge and perhaps the will, but economic difficulties stand in the path. The great wars of this age have stimulated the social ferment, which, if not entirely to the good, has improved the public health, but they have so impoverished us as to make the future rate of progress of public health less certain than in the first half of the century. But Dr. MacQueen points out in his stimulating paper on 'Some Tasks Confronting the Public Health Services' that a small increase in spending on preventive medicine might well lead to a great saving in the cost of the curative services. There are diseases we know how to prevent, but cannot now prevent. We know that good feeding and good housing are still not universally the rule though they are basic necessities. Even so we need as well the 'will' of the people,

applied collectively and individually, to support us; we must present health education in such a way that the attainment of good health seems worthwhile and possible of achievement by simple and not uncongenial means. We know, that apart from housing and atmospheric pollution our environmental services are generally effective. It may be that, as Dr. MacQueen indicates, we should now move forward not on a very broad front but with localised objectives, applying our services to specified problems. The personal health services must be directed more and more closely to a knowledge of the causes of illness and to their removal concentrating on special groups of persons or on special diseases known, or perhaps not known, to have causes inherent in our present social structure and way of life"—Extract from the Editorial in *The Medical Officer*, January 20, 1951.

[Much of what is said above applies with greater force to the position in India. Only we were not as rich a nation as

England was towards the end of the last century. But even at the low rate of taxation prevalent in those periods and later up to the end of the twenties of this century in India, there was more than enough money left in most of the Provincial exchequers that, if only the administrators had the will, they could easily have spent enough to improve public health. But now we have the knowledge and the Governments proclaim also to have the will, but financial stringency stands in the way of undertaking any large scale plans of improvement. We may cite the recommendations of the

Bhore Committee to substantiate what we have said above. Those recommendations were made after a thorough study and understanding of the needs of the situation. And yet they have, for all practical purposes, been placed in cold storage. A Planning Commission is at work and a large number of schemes are likely to be drawn up by that body. But unless the basic problem of ensuring positive health to the people is tackled satisfactorily, the accomplishment of these schemes will be next to impossible. The sooner this is realised, the better it would be for the country—Eds.]

MAINTENANCE OF MOUTH-HEALTH

J. R. Schwartz, D.D.S.

THE health of a nation is dependent upon the health of its people. The health of a people is dependent on the health of the individual and it is the individual citizen who is either the weak or the strong link in the chain of unity. It is he, who must be made conscious of the vital importance of vigorous health.

By the same corollary, the wholesomeness of a home is reflected in the pleasant and inviting character of its gateway—a gateway that is sound and attractive.

When you beautify the gateway to your home, you do so as an expression of your personal interest.

When you guard that gateway against marauders and trespassers, you do so because of your hatred against forces of evil and destruction.

When you beautify that gateway, it is an expression of pride.

This gateway to your home is not just a thing apart from the rest of the house, but an integral part and should not be permitted to fall into disrepair nor to become drab and uninviting.

So it is with the human body.

The mouth is the gateway to the body, and as such must be guarded well.

A mouth in which the teeth, the gums and the surrounding tissues show evidences of soundness and health is not only attractive but is a good indication of a healthy body and a healthy mind.

A healthy mouth is also a safeguard against the dangers of the many ailments that may be transmitted through the mouth.

For good digestion, one must chew properly. For good chewing, one must have strong, healthy teeth and sound gums. To possess healthy teeth and gums, it is vitally essential to follow and maintain a daily ritual of mouth hygiene and periodic examination.

Periodic dental service should be a 'must' for every human being. The dentist is trained in all the arts and sciences pertaining to his profession to serve the needs of the people.

The services of the dentist should be sought regularly even if only to be assured that all is well. Particularly is it important that children be taken regularly to the dentist to make certain that their teeth are growing properly and to catch in time those that may be developing cavities.

A child with decaying teeth, and possibly some abscessed condition, does not chew properly nor digest its food as it should. If it is to enjoy good health, growth, and development, it is essential that its teeth and gums be in a healthy state.

In these days of modern methods in dental practice, there should be no fear nor hesitation to visit the dental office,

yet despite that, it is unfortunate that the feeling exists. A child with decaying teeth, giving pain and discomfort is generally reluctant to tell the mother lest it be taken to the dentist.

This situation must not be allowed and it should be the duty of the mother to be alert to such conditions and to arrange for periodic dental care. Failure or indifference, or neglect to do so is an injustice to the child.

Many of the present-day advances in dentistry are concerned with preventive measures to guard against the ravages of decay. Incessant research is going on to find the cause for caries or decay. One of the measures that has been instituted in recent years is the application of the Sodium Fluoride treatment. It has been found that this medication increases the resistance of tooth enamel to the ravages of decay producing bacteria.

Another innovation is the incorporation of the ammonium ion into tooth powders and tooth pastes to maintain the alkalinity of the saliva. This alkalinity is important to maintain in the mouth.

But above all, the simplest, yet the most effective, preventive measure is the thorough brushing and cleansing of the teeth after every meal.

The accumulation of debris, if allowed to remain, results in chemical disintegration. The end product of this reaction is the formation of a creamy substance known

as lactic acid. This acid destroys the enamel and exposes the dentine of the tooth to the ravages of decay by the ever-present mouth bacteria.

Intensive brushing after every meal becomes imperative.

Neglected teeth and gums are often the forerunners of more serious ailments that may subsequently become major systemic problems.

Recent years have brought forth the anti-biotics, the so-called "miracle-drugs". These are the various compounds of penicillin, such as "Crysticillin". These drugs have been successfully used against many forms of mouth infection.

It is timely, to say in summation, that mouth health should be maintained as nature intended. Nature did not produce teeth merely for decorative purposes. It's true that a beautiful set of teeth is a sight to behold, but they were created for a definite function—chewing. Correct chewing prepares the food so that the digestive tract will have little difficulty in doing its work. Improperly chewed food is a burden on the system.

Proper chewing cannot be done on a defective chewing apparatus. The answer is very simple. Keep your mouth in a good healthy condition by appreciating the function of the teeth and gums and giving them the care and attention they deserve.—*Journal of the All-India Dental Association.*

Why Do We Sneeze ?

When a fly settles on your face, you drive it away immediately with a quick sharp movement of your hand. If something tickles your nose or cheek you scratch the tickled region. If you feel any discomfort from which your skin may suffer at any time, you deal with it in some suitable manner. The air passages of the nose and the throat are particularly sensitive to foreign particles of dust, to chill waves, and similar other factors. These cause a tickling or some such unpleasant feeling; but these parts are beyond the reach of the hand and one cannot scratch these parts. Therefore, nature has provided a method of overcoming such troubles when they arise. If the air passages begin to tickle, we sneeze and this outward burst has the effect of eliminating or dislodging the offending agent. The evil omen ascribed to 'sneezing', particularly when one is just starting to do something or on a journey, is a superstitious belief and when we realise the true cause of sneezing, it is difficult to explain how this ancient belief, regarding evil omen, gained ground and is still prevalent amongst us. Will some one enlighten us ?

T.N.S.R.

The Social Revolution and Family Life

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FROM year to year social conditions seem to change little, but if one carries one's mind back to the period before the war, one becomes aware of the fact that in many ways a social revolution has taken place.

The housing shortage still remains acute on account of the natural increase in the number of families. Though many houses have been built and new housing estates opened up, it does not appear as if the fringe of the problem had been touched. The character of the housing has introduced certain new problems. Building of houses at about 10 to the acre instead of up to about 40 as in past decades, means that towns have come to occupy a much greater area. People have to travel much farther to work through streets much more congested with traffic, an increased stress and strain in addition to the ordinary working day. The greater use of water, because of the universal provision of bathrooms and other changes in new houses as compared with the old-fashioned type of house, tends to cause problems of water supply with which it is difficult to keep pace. Again, the different type of housing leads to a much higher standard of life in furniture and other appointments. This may seem good, if it can be maintained; but often it seems that it can be maintained only by sacrifice in other directions.

A revolution which is not fully appreciated unless one looks back a few years is the more frequent industrial employment of married women. Though this is encouraged in many ways by official action such as the establishment of nursery schools and nursery classes, and the feeding of school children, yet in the opinion of many who are qualified to judge this practice is in many ways most harmful to the growing families of mothers so employed. It rarely seems in any true sense necessary, but appears to be often undertaken in order to maintain a standard of living and spending which some years ago would have been thought fantastically high.

The picture of family life in other ways has undergone and is undergoing rapid changes. Marriages are now often ended by divorce, or husband and wife are otherwise separated, with an effect on the children which often is disastrous. Families are broken up in other ways, as by the husband's working away from home, or undertaking foreign service with the armed forces; or the husband and wife together leave the children to the care of relatives. The results are an ever increasing number of "maladjusted" children and ever increasing demands for psychiatric treatment.

Changes in social conditions in the home and family life generally, the increased industrial employment of women as well as the "greater mobility of labour" (the ideal of some planners), have led and are leading to greater difficulty in obtaining help from relations or paid help in the home from others, in the emergencies of childbirth, illness, old age and death, with consequent increase in the demand for accommodation in institutions for all these emergencies, a demand which often cannot be met, and is the cause of acute distress and anxiety.

Changes in the birth-rate accompanying other social changes are a matter of anxiety to some, that is, to those who believe that it is possible by taking thought to alter the movements of human destiny. But a survey of present social conditions and changes leads to the conclusion that they are becoming more and more inimical to the production of children and families. Hence there seems every reason to think that quantitatively the present fall in the birth-rate will continue. On the qualitative side, also, while it is difficult to measure with exactness the effects of the differential birth-rate, the facts of which are well known, without doubt these effects in the direction of racial deterioration are great. Among other causes of the differential birth-rate, and with the same effect as the general entry of women into the professions and into the higher grades of commerce and

industry, and of the civil service, the special effect of the social services themselves may be mentioned in a public health report. These services require an ever increasing number of women workers, teachers, doctors, medical auxiliaries of all kinds, nurses, social workers, who are selected largely on the ground of superior intelligence, and who often remain unmarried, or, if married, have few or no children. Those, however, who plan social services can hardly be

expected to risk paralysis of their efforts to improve environmental conditions by looking beyond these, and beyond the ends of their own noses at the genetic effect of their proposals.

To some this record of social change may read as little more than a *syllabus errorum*, yet they are some of the most obvious changes which have been observed and thought about by the writer in the course of his ordinary work.—*The Medical Officer*.

DO WE KNOW WHEN WE ARE ILL?

asks R. B. James

ONE of the disturbing things about modern life is the ease with which the sub-standard and the second-rate in health have become accepted as the "normal." Such things as rheumatism, headaches, arthritis, sciatica, heart diseases, and others are now accepted as natural, if unpleasant, accompaniments of middle and old age.

Sufferers from these complaints may be fairly amenable to new suggestions, but what of the apparently healthy? What of that exuberant fellow who assures us that he "eats anything he likes and has never had a day's illness in his life?" Not so common these days, perhaps, but one does meet such people, and it is of some importance that the Nature Cure advocate should be able to unravel this apparent contradiction.

While there is little doubt that heredity may confer a high degree of immunity to disease, there is another factor less widely known but of great moment—that of compensation.

Before we examine this subject, however, let us remember that the vast majority of people are labouring under a gross misapprehension regarding our general level of health, believing that science has disease well under control. Those who have read about the Peckham Health Centre or studied the findings of those who worked there will realize that this is far from the truth; for the fact is that 90 per cent of people have some defect, deficiency, or disease,

and the interesting thing to notice is that, on examination, 65 per cent had no idea that they were ill.

An Astonishing Fact

This is an astonishing fact well worth keeping in mind, because it looks as if we do not always know when we are ill. For instance, people have been found to be suffering from such things as pleurisy, pneumonia, heart disease, kidney affections, and many others while feeling quite normal.

This is curious, surely, for, the body being such a wonderful machine, how is it that it does not ring an alarm-bell when disease sets in?

It is possible that if robust health were the natural heritage of the common people some kind of warning, such as lack of vitality or other weaknesses, would ensue in the event of disease. To-day, such is the sub-standard nature of health, that warnings of this kind pass unremarked.

The deeper reason, however, concerns the factor of compensation. There are two types of compensation, (a) physical, and (b) functional, and in order to understand them we must study some simple reactions of the human body.

Most people know that when some organ or tissue suffers injury or fails to function properly, the body compensates for this by spreading the load over other organs. From the body's point of view this is an excellent

arrangement, but it has the disadvantage of masking pain or other symptoms by which warning is given that something is wrong.

Thus, quite commonly, a person will carry on for years in apparently good health, while in reality the body is burdened with an overload of toxic material or a faulty organ. This cannot last for ever, and breakdown is the final result—perhaps a fatal one.

From this it would seem that we cannot be certain of sound health under modern conditions of living. This is a sad state of affairs, but there is a remedy. Robust health is offered on certain terms, and those terms demand that we shall live an ordered life and partake of a balanced diet of unspoiled food.

The other type of compensation is less easily defined, but is functional, and becoming widely recognized to-day.

Our bodies have normally a large reserve of strength—about seven times the normal—which is ready to function in times of great strain or crisis. But, now-a-days, many with sub-standard health are living on this capital reserve of strength. The results of this are two-fold. First, the inner state is so marked as to delude the individual, and, secondly, when some new strain is imposed there is no reserve, and breakdown is inevitable.

Delaying Tactics

As a corollary of this, the individual may partly avoid a breakdown by certain delaying tactics, which may be unrecognized as such.

For instance, let us take the case of, say, Mrs. Brown, who is approaching middle-age, has no children, and whose husband is not a great home-lover. She used to be active in sports clubs, and other societies, in the winter. But now she feels less able to indulge in vigorous exercise and has little in common with

parents with several children. And so she gives up one activity after another and congratulates herself on feeling better for it, but she soon feels bored and dull. What has really happened is that Mrs. Brown, having lived on capital strength for years and enjoyed reasonably good health, cannot find the vitality in middle age to carry on active pursuits. The fewer demands made upon her, the weaker she becomes. Quite possibly she will end up as a hypochondriac.

This may be an extreme example, but certainly, for every one like Mrs. Brown, there must be thousands who always feel "below par" and never know the joy of robust vitality. This, of course, is not surprising in a generation which has turned its sons into machine-minders and which works largely at sedentary jobs—a generation, moreover, whose food is deprived of its nourishing qualities.

Counterfeit

And so we see that an outward appearance of good health may be counterfeit; it may hide the fact that faults are being compensated for by the body, enabling it to function longer, but at a reduced pace and vitality. In reality this is dangerous, since it lulls the individual into false security, while, under strain, he is always liable to fatal breakdown.

Since we do not know what is going on in our bodies, the only safe course is to take up a balanced and nourishing diet and live a reasonably ordered life.

If, instead of the National Health Service, which caters very largely for those already far gone in sickness, we had centres for regular examination of the healthy (so-called), bad habits might be corrected and advice be given for better feeding.

Only when such a service is set up shall we even begin to concentrate on the prevention of disease, and so build sounder health.—*Health for All*.

Healthy Person

A healthy person (swastha) is, defined by Susrutha as one who has an equilibrium of the three humours (pitha, vadha, sleshma), who has normal digestion, normal condition of the tissues, normal excretion, whose soul is free from bondage and whose mind and senses are clear, bright and unclouded. Our ancient Hindu scriptures have definitely laid down that the human being is not the mere physical body but a complex and harmonious combination of the physical body with the senses, the mind and the soul.

AIR POLLUTION

WAYNE G. BRANDSTADT,

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THE sharp increase in deaths from respiratory diseases during and following prolonged heavy concentration of smog in Donora, Pa., in October 1948, has focussed increased attention on the problems of air pollution. One result was the calling of a U. S. Technical Conference in Washington on air pollution on 3, 4, and 5 May 1950 by President Truman. This conference was sponsored by the Interdepartmental Committee on Air Pollution consisting of representatives from the Departments of Interior, Army, Navy, Air Force, Agriculture, and Commerce, and the Public Health Service, and the Atomic Energy Commission. In his letter to the Secretary of the Interior President Truman said:

"The contamination of the atmosphere and its potential adverse effects on health, industry, agriculture, and natural resources are causing wide concern. The agencies of the Federal Government are being called upon to assist private, State, and municipal interests in finding a solution of the air pollution problem."

The conference was divided into panels composed of outstanding authorities in (a) agriculture, (b) analytical methods and properties, (c) equipment, (d) health, (e) instrumentation, (f) legislation, and (g) meteorology. These panels and large audiences of visitors were addressed by a series of speakers. The total registration including visitors was about 690. A complete record of the proceedings will be published later.

Air pollution may be defined as the presence in the atmosphere of substances not ordinarily found there, or the presence of ordinary constituents of the air in greater than usual concentrations. Air pollution may, therefore, occur in varying degrees and some pollutants are naturally more important than others as regards their effect on health. Pollutants may be classified as (a) inert smokes and dusts, (b) mucous membrane irritants of which sulfur dioxide is the most important, and (c) malodorous substances.

Air pollution has been with us since the beginning of time and is always aggravated by processes involving incomplete combustion. The human activities that give rise to air pollution are (a) industrial processes, including coal-burning locomotive engines, (b) improper stoking of furnaces in homes and other non-industrial buildings, and (c) automobiles, probably in that order.¹ Other sources are dust storms, volcanoes, and pollinating plants. We should not lose sight of the fact that water vapour itself in excessive amounts is an air pollutant and has an adverse effect on persons with skin disease, asthma, arthritis, and mentally depressed states.

Although there is general agreement among sanitary authorities that a heavy concentration of smoke is harmful to health, it must be admitted that this opinion is supported by very few controlled observations² and that more attention is often given to the physiologically harmless, obnoxious or malodorous pollutants than to those adversely affecting health. This will always be so and with good reason but should not divert our attention from the more important task of safeguarding health. The greatest need appears to be for more effective knowledge concerning (a) the means of measuring the concentration of various air pollutants, (b) the maximum concentration which will not result in acute and chronic disease,³ (c) the ways air pollution may damage plants and animals, and (d) the best

1. McCord, C. P.: The physiologic aspects of atmospheric pollution. *Indust. Med. Surg.*, 19:97-101, Mar. 1950.

2. Alexander, I. H.: Smoke and Health. *Cincinnati J. Med.*, 22:492-501, Jan. 1942.

3. Definite damage can be demonstrated following short exposures to high concentrations of certain chemicals in the air but it is much more difficult to measure the damage, if any, resulting from long exposure to low concentrations of these same agents. Furthermore, we do not know much about the possible synergistic action of several toxins at levels that are individually allowable.

means of preventing such damage. The time has come for definite and effective action based on exact knowledge if we are to preserve our heritage of relatively fresh air.

The direct effect of smoke or any of its constituents in amounts that may ordinarily pervade the atmosphere of our cities has not been shown to be detrimental to persons of average health.⁴ The direct effect of smoke on those who are ill has been most extensively studied in connection with tuberculosis and pneumonia. It appears that smoke does not in any way stimulate the onset of tuberculous processes or militate against recovery when this disease has been contracted. In the case of pneumonia the effect may be seriously detrimental. In addition to these direct effects, rickets may result from the diminution of sunlight associated with smoke and fog. The general physical tone is lowered and mental depression is increased as a result of long exposure to polluted air. Epidemiologic and statistical studies leave no doubt that deaths from pulmonary and cardiac disease increase in direct proportion to the duration of a heavy smog. In investigating the Donora disaster it was found that a dangerous atmospheric concentration of pollutants resulted from a combination of density, humidity, and decreased velocity of air currents and not from the latter factor alone.

Unfortunately, the air passages are not an efficient dust filter. It has been shown that in quiet breathing from 2.5 to 7 percent and in deep breathing 20 percent of the inspired dust reaches the lower lung spaces. Nose breathing protects only partially against dust.⁵

In general the remedies for air pollution in industry may be classified as collection, dilution, incineration, and change in process. All of these measures involve added expense that in some cases make

them prohibitive. Control is an engineering problem because, although the removal of sulfur dioxide from the air is not difficult, the disposal of tons of byproducts is. Complete elimination of air pollution is rarely, if ever, attainable. The aim is to strike a balance between the right of industries to reasonable operation and the community's demand for a decent environment, not losing sight of the community's need for the economic support of the industries involved. Better public relations between the industries and the community would, in many cases, facilitate a solution to these problems. Legislation alone will not clean the air, and mutual understanding coupled with cooperation will lead to better results than punitive measures.⁶

The literature on this subject is so widely scattered and appears in so many publications not strictly medical in nature that the Public Health Service has compiled a useful annotated bibliography that is divided into sections on pathologic effects, discussions of individual pollutants, localities studied, reduction of ultraviolet light, effects on plants, sources of pollution, bacteria in the air, weather, history, and a general review. It contains abstracts of 341 papers from foreign and domestic journals.

This is a matter that touches many fields of endeavour and concerns us not only as physicians but also as citizens. —*U.S. Armed Forces Medical Journal*.

4. Monnoet, O.; Perrot, G. St. J.; and Clark, H.W.: Smoke-abatement investigation at Salt Lake City, Utah, U.S. Dept. of Commerce, Bur. of Mines Bull., 254, 1926.

5. Report of advisory committee on atmospheric pollution on observations in the year ending March 31, 1922. H.M.S.O. 42, 1923. (Abstr. *J. Indust. Hyg.*, 5:145, Nov. 1923).

6. Dyktor, H. G.: The community problem. *Indust. Med. Surg.*, 19: 102-106, Mar. 1950.

Detection of Adulteration of Milk

In the Indian Dairy Research Institute, Bangalore, a method of detecting the extent of adulteration of milk with water which is widely practised in India, has been evolved. The Institute has found that the determination of freezing point of milk offers a reliable criterion for detecting of even the addition of small quantities of water (as low as four per cent) to milk of any species of animal. Based on an extensive analysis of samples of milk the application of the freezing point for examining market milk has been standardised.

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EUGERIA (Healthy Old Age)

An interesting passage in Aristotle's *Rhetoric* (Book I, Chap. 5) deals with happiness (*endaemonia*), health (*hygieia*) and well-being in old age (*eugeria*). This passage—translated below—exemplifies Aristotle's mastery over logical analysis of words and ideas, relating to healthy happy living.

"Let us grant that happiness (*i.e.*, the good life) consists in well-being with virtue or in self-sufficiency of life, or in the life that is most pleasant and secure or in abundance of possessions with the power of defence and exercise. Doubtless all would agree that one or more of these elements constitutes happiness;

"If then happiness is of that general character it follows that its parts or elements consist of good birth, many friends, trusty friends, wealth, good offspring. Many children and a happy old age [*Eugeria*—(literally)—*Well-ness in old age*]; it implies also the physical qualities such as health, beauty, strength, bigness, active muscular power; also reputation, honour, good fortune, virtue. For thus equipped a man would be most self-sufficing, if he should have these inner and outer goods: and there are no other things that matter beyond these.....

"Health (*hygieia*) is that virtue of the

body by which we exercise our use of our bodies free from disease.....

"*Eugeria* may be defined as slowness in the oncome of old age with freedom from pain. You cannot call a man happy in his old age either if he ages quickly or if he ages slowly but with pain. *Eugeria* comes from the virtues of the body and from good fortune. A man may be free from disease and enjoy physical strength and yet not be free from suffering and pain and without good fortune a man could not reach to an old age. There is also a certain power of long life apart from strength and good health; for many men are long-lived without the virtues of the body. But a high precision in these matters is out of place in this discussion."

The term "*geriatrics*" has recently come into prominent use in medical language ('*geriatrics*' is the healing of old age and *eugeria* is healthy old age.) So the term '*eugeria*' appears to be a better one to use to denote what is intended to convey by *geriatrics*: This opinion expressed by Sri James Sterling Ross K. B.E., C.B., a former Officer of the British Ministry of Health, has been endorsed in a neat pithy Editorial by the *Canadian Journal of Public Health* for July, 1950.

All India Medical Licentiates' Convention

The Secretary, Reception Committee, writes:

I

The All India Medical Licentiates' Convention will be held on the 7th and 8th April, 1951, at Ambala Cantt., Punjab, in the spacious building of the Cantt. Board High School. Scientific papers will also be read. Those interested should send their paper two weeks before the Convention to the Secretary, All India Medical Licentiates' Convention, Ambala Cantt.

II

In connection with this Convention, an Exhibition of Medical and Surgical Products will be arranged. Those who intend

to exhibit their products should immediately write to the Secretary, All India Medical Licentiates' Convention, Ambala Cantt.

Medical firms who intend to exhibit their products are required to obtain a Licence under Drug Act 1940 Section 180 from Civil Surgeon, Ambala, on payment of Rupees five. Licence will be obtained by the Secretary of the Exhibition on receipt of request for licence.

Stalls:—12' x 12' with durree, 1 chair & 2 tables. Free Electricity. Rent Rs. 100/-

Area of Exhibition .. 108' x 72'

Area of stall. .. 12' x 12'

Topics from Medical and Health Periodicals

Religion aids medicine.—The co-operation of the clergy with the medical profession in the healing of the sick is welcomed by the editor of the *Journal of the International College Surgeons* (Vol. 13, p. 450). He adds that a sound knowledge of practical psychology and human motivations is a great aid to a conscientious pastor. Most churches use the principles of mental science cautiously and well, calling in expert help when needed. Collaboration between the two callings on this basis is excellent, for medical men are realizing today as never before how intimate is the relation of the body, mind and spirit, which are truly interdependent in sickness and health alike.—*Good Health*, (U.S.A.)

Casein from skimmed milk.—A standardised procedure for the manufacture of casein from skimmed milk has been evolved in the Dairy Research Institute, Bangalore. Economic disposal of skimmed milk which is produced in large quantities in India is of considerable importance to the dairy industry. One of the methods of disposal of this bye-product is by its conversion into lactic casein which has a commercial value in ghee making. The method of manufacture of casein in certain parts of the country is crude and consequently the bye-product fetches a low price. Under the new method it is hoped that production of uniform good grade material will be ensured. The Institute has also evolved a simple method for the conversion of skimmed milk into rennet casein, which is used in the manufacture of plastics.

U. N. Teams clear malaria areas in Asia.—Virtual disappearance of malaria is reported in regions of India, Afghanistan and Thailand sprayed by United Nations Health Teams.

Using DDT (powerful insecticide) and other insecticides provided by the U. N. International Children's Emergency Fund (UNICEF) World Health Organisation (WHO) teams have sprayed 4,000 square miles in the three countries.

As a result, WHO reports improved health for hundreds of thousands of men, women and children increased productivity and improved living standards in the sprayed areas.

Four WHO teams active in India reported the following progress:

In the Terai and Bihar areas, a survey showed that malaria infection has been reduced to nothing in the 3,000 children examined. The prevailing rate of incidence has been 60 per cent among the children. In the Jeypore Hills, the most infected area of India, the malaria mosquito has practically disappeared from villages sprayed. In the Western Ghats, Malabar District, the mosquito has been eliminated from 142 miles.

WHO also reported that malaria has been reduced considerably in the six-month anti-

malaria drive in the Kundus—Khandbad region of Northern Afghanistan.

Comparison of controlled areas with unsprayed areas in the Serapee district of Northern Thailand reveal a 40 per cent drop in malaria in the sprayed tracts, WHO notes.—*U.S.I.S.* (Extract).

Predetermination of sex of children.—To the Editor—I have been asked, by parents who want to "round out their families" about predetermination of the sex of children. One had heard about "hormone injections"; the other had a book that mentioned acid and alkali douches. (1) What is the present status of these theories? (2) Are there deleterious effects from these treatments?—M. D., New York.

Answer—1. The sex of a child cannot be selected. Hormone injections do not have an effect on the predetermination of sex, nor does variation of the Ph of the vagina.

Deryl Hart and James D. Moody (*Ann. Surg.* 129: 550 (May) 1949) reported an experimental breeding of rats in which they increased the percentage of male offspring as compared with female from a normal 100:1 to percentages varying from 149 to 255. This was accomplished by delaying insemination after the expected time of ovulation; the percentage of male offspring increased directly with the increase in the time interval. An analysis of over 65,000 pairs of human dizygotic twins reveals in each year's group about 27 per cent. more like-sexed than unlike-sexed pairs. On the basis of their experimental studies, the authors feel that this constant surplus, inconsistent with chance alone, results from inseminations occurring both early and late in the fertility period. On the basis of their experiments and a statistical analysis of large numbers of human twins, they believe that the time factor between insemination and ovulation directly influences the sex of the offspring.

Hart has stated that the result of breeding in hamsters was exactly opposite to that of rats. That is, late insemination gave a preponderance of female offspring and early insemination gave a preponderance of male offspring. The preponderance of male offspring in early insemination in hamsters ran up as high as 160 male per 100 female offspring and the preponderance of female offspring in late inseminations ran as high as 170 to 100 male offspring.

2. There is no harm in the use of alkali or acid douches before coitus to alter the Ph of the vagina; neither is there any reported deleterious effect from the use of hormones on the offspring of human beings; there is no point, however, in using these substances to try to predetermine sex.—*J.A.M.A.*—*Medical World*.

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