A Journal Devoted to Healthful Living

HEALTH

ESTD. JAN. 1923

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Annual Subscription: Rs. 2. Foreign—Rs. 3. Post paid.

Editorial and Publishing Offices:—

323-24, Thambu Chetty Street, George Town, Madras.

Vol. XX. | JULY, 1942. | No. 7.

EDITORIAL

SOME WAR-TIME CHANGES

THE war has forcibly brought about many a good change in our lives. One of the conspicuous changes is peoples' migration from cities to villages. This is very good from the point of view of healthful and hygienic living. Because, this makes cities, at least coastal cities, non-congested, and ensures health for not only emigrants but the remainers, and stops all sorts of lazy and luxurious life in the cities which is not conducive to health. Madras, for instance, is working normally even though even one-fourth of those who left the city have not returned. This shows that war has proved that very many thousands settle in cities unnecessarily and superfluously crowding the place and making it unhealthy. But the average emigrant feels that his stay in villages is temporary, and when war ends he would again settle in cities. This must be prevented if possible. Only those whose presence is essential in the city should be there. If this dictum is followed by people, and applied in the cases of inland cities also, more than 25% of the public health problems will be solved. For, it means people must then concentrate on growing better and more food, making it consequently healthier and cheaper, and thus enabling the poorer classes too enjoy more food and sound health. This is not impossible if the government will make up their mind on it. It can be brought about by examples, encouragement and propaganda besides mild or nominal legislation. In this respect, the post-war world need not be different. In the meanwhile, we should cultivate courage to follow the Nature's lead.

Another change the war brings is the rise of prices of foreign and manufactured articles as well as the necessities too. This makes people curtail all unnecessary expenditure such as on smoking and drinking non-nutritive liquids such as coffee and tea. People are being asked to travel less by trains, while automobiles are also used less for want of petrol. This

brings the people to their good old healthy habit of walking, which is alike cheaper and economic. It may be complained that walking takes more time. True, and that is why people will be curtailing unnecessary businesses and using the vehicle, the body, as sparingly as possible.

Another important change is that people have grown more serious, more active and introspective and less talkative. All these are good qualities and ensure health. People grow more God-fearing and more united in their outlook. They sink all their petty differences and cultivate co-operation and mutual appreciation. In short, they live like members of one family. This is, and must be, the ideal of all human politics. Only, this should not be forgotten after the war. Wars mean appearance of common dangers to a people, just as an epidemic is an appearance of a common danger to a locality. The happening of a thing denotes its possibility. The possibility of the common danger being, therefore, always present, it is nothing but folly to forget it as soon as the danger disappears. Just as one should eat healthy food and keep healthy habits in order to prevent disease, so also a people should think and behave properly, always to prevent war, a sociologic disease. Hence, the so-called war-time emergency which is characterised by so many healthy changes is an eternal emergency ; and so, it is even the post-war emergency.

British Tanks for Russia

Here is a view inside a British factory during the construction of "Waltzing Matilda" tanks. They are all destined for Russia, to aid Britain's Allies in their magnificent fight against Nazi Germany.

There should be no scope for anger or revengefulness during or after the war. For anger itself is a disease, and, indeed, we cannot become angry with an epidemic. Peace is health. If peace is declared it must be without any fear or vengeance. Mere artificial cessation of armed and physical hostilities is no peace.

But there are some unhealthy changes also brought about by the war. Owing to the evacuation of women and children, the people in the city are taking their meals in hotels. These hotels are run without a bit of consideration for the health of the boarders, and much less so when the latter depend on them more. As for their hygienic standard, it is very low and often positively objectionable. The dining halls are nominally cleaned after the rise of each batch of diners. The managers have discarded

the most healthy and scientific method of cleaning the halls. Cooks and servers have absolutely no hygienic sense. It is better for hotels to be served by qualified cooks and servers who have learnt hygienic principles of life from Sastris and Acharyas.

The Government, the other day, issued a welcome communique, stating that they would run State hotels if the private hotels would not reopen. Had they done so, irrespective of the private hotels, and established a healthy standard in the course of time, theirs would have been one of the outstanding services to this Province and examples for others. For, nutrition is universally accepted as the most important element that plays the greatest part in maintaining public health. And public health being a government affair, it is quite justified for the Govt. to have come forward with the offer. In fact, meals and coffee hotels all over the Province should be run by Government directly under the Public Health Dept. Then, the art of cooking and serving would be highly encouraged and developed to the benefit of all. One of the post-war schemes must be this important one, if not during the war.

WAR GASES

BY DR. B. M. KOTHARY, M.B., B.S., *Jodhpur.*

THE war is coming nearer home and it is but natural, therefore, to consider seriously the ways and means to combat this impending destruction. Without discussing the political implications of the current policy, it is honestly right to assert that one must co-operate in the measures of Civil Defence. A.R.P. personnel is trained competent enough to look after the civil population during an air raid, but in order that they may carry out their duties efficiently and successfully, they need all co-operation and assistance from the public. Hence it becomes incumbent upon us to let the layman know and practise the A.R.P. methods.

We will confine ourselves in this article to war gases. The enemy has a definite mission to perform during an air raid. It is not only to destroy strategic points in the town but to create panic and break the public morale by destruction to human life and property. And of course, it has been found very useful to make use of gases to this end.

All the various gases that could possibly be used may be divided into two categories—persistent and non-persistent. The former slowly evaporate like mustard gas, Lewisite, Dick and Tear gas; while the latter form a gaseous cloud and disperse slowly like Chlorine, Phosgene, Arsine and nose gas. They are used either in gas shells and bombs, or sprayed from the air craft. They can be detected by individual smell, colour or reaction to detector papers.

The common effects they produce are coughing, choking and difficulty in respiration. Sometimes, one feels slight or severe pain in the chest, throat and head; and vomiting may occur occasionally. The persistent gases affect the eyes causing irritation, redness, lachrymation and even temporary blindness; but blister formation with stinging pain is the more dreadful effect.

The most important thing to do is to adjust your respirator immediately. For blister gases, eyes should, in addition, be protected by suitable shields. Those affected should be kept warm by giving hot sweet-tea; and only serious ones should be transferred in a stretcher to the nearest Medical post. Blisters from mustard

gas must not be pricked, while those from Lewisite or Dick could be pricked with a sterile needle, sqeezed and covered with clean dressings. Where eyes or nose have been affected, they can be washed with dilute Soda Bicarb lotion or Salt solution. Blistering liquid must be swabbed away from the skin and covered with suitable ointments (Bleach Paste) as prescribed—if the skin is not reddened or blistered.

These are some of the common things to know and do about gas casualties. For detailed information, one is recommended to consult some standard literature on the subject. By active co-operation and mutual assistance, we can surely frustrate the dreadful mission of air raids—and thus prevent avoidable panic and despair.

FOOT-WEAR

BY K. NARAYANASWAMI IYER, B.A., *Palamcotah.*

EVEN from remote antiquity, our ancestors realised the necessity for foot-wear. The Sanskrit word for it is significant: *Pada Raksha*—that which protects the feet. It is a melancholy fact that, in spite of this, the percentage of people who habitually protect their feet is very low in our country. Often, we find that women who wear costly ornaments on their persons walk barefooted on dirty and filthy roads and expose themselves to the hazards of the blistering heat of summers, thorns, nails, disease germs, poisonous insects and reptiles.

What may be the reasons for this neglect of an ordinary precaution which commonsense dictates and which surely no moral code prohibits?

The haughtiness and cruelty of authority and rank in the ancient days may be mentioned as one reason for the barefoot-custom largely prevailing in our land among both sections of the population. Be it noted that even in the past, a king always wore sandals or shoes, and there was a notion that any one who approached him should walk barefooted as a mark of respect. Again, generally women were considered as inferior to men and to this day even in wealthy and aristocratic families sometimes, while the husbands wear shoes or sandals, wives walk with them bare-footed. Also tradition, ignorance of hygienic laws and fear of authority, domestic or public, have all played their part. Whatever might be the reasons in times gone by, such discriminations have no longer validity in these days. In fairness, there should not be the slightest objection on the part of any decent person to his fellow human being exercising the right of protecting his feet always in the manner best suited to him. Of course, we can understand the propriety of taking off our shoes within temple, mosque or church, but it is nothing short of tyranny to insist on barefootedness as a mark of respect to human authority or position. Unfortunately, this still prevails to a considerable extent in the Indian states and in a lesser degree in British India. There are enough differences between man and man, and let us not perpetuate this man-made restriction which does not exist, perhaps, in the rest of the world. On the other hand, if we really care for the physical welfare of the poor and the large class of labourers and artisans, we should ourselves encourage in them the shoe habit. In fact, among the 32 items of charity mentioned in the ancient books is the giving of sandals (footwear) to the indigent. It is bad economy also to allow

workmen to injure their feet by thorns, glass pieces or nails as often happens when they are barefooted, and thus to absent themselves from work for days together. We know what an ordeal it is to walk barefooted on tarred roads during the hot hours of the days in the summer season. There was a time, not very long ago, when a person wearing the European kind of foot-wear was allowed to walk freely into an assembly or before persons in authority, while those wearing sandals of the Indian pattern were expected to take them off at the entrance. The soles of European boots and Indian sandals cannot be very different in respect of cleanliness and there was no reason except insolence and prejudice for this distinction, but fortunately this is disappearing now-a-days. The nature of the foot-wear should be determined in accordance with the climate and, season and for a tropical land like India, sandals in general are obviously more hygienic and comfortable than tight-fitting boots. In cold regions, shoes and boots are, of course, preferable as they afford better protection against chill and frost. The question of extra cost to poor families on account of sandals is insignificant when considering the enormous advantages of the shoe habit. When the population adopts it in a wholesale fashion the health of the people must also improve. Accidental advantage will be the fillip that will be given to the leather industry in our country which will be no small gain.

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German Incendiary Bombs

A technical correspondent of experience makes the following observations on the article, "German Incendiary Bombs", which appeared in our issue of September 1941. We are very grateful to him for this :—

(*a*) Snuffers are not recommended by the Ministry of Home Security.

(*b*) It is considered inadvisable to recommend the use of a blanket when tackling an incendiary bomb immediately. This will not afford protection from the splinters of an explosive bomb.

(*c*) The mattress type of sandbag is not now recommended. This type is adequate but to place it on a bomb, the operator must stoop and use both hands which are thus partially exposed, whereas the plain type can be placed on the bomb with one hand, without exposing the hand. The preparation of the mattress type also clearly takes time and trouble which are not necessary.—*Safety News.*

COLOUR OF CLOTHINGS AND HEALTH

By DR. T. D. MUKHERJEE, M.B., D.P.H., *Burdwan, (Bengal).*

In order to appreciate the very intimate connection our health has to the colour of the clothings we use, we shall have to form some idea of our sensation of colours and then examine in what way it influences our health.

Our colour sensation is the result of impact which light waves of different magnitudes produce on our retina with compounding impressions carried to the brain.

There are only three original colours —red, yellow and blue. Black is no colour and white is the conglomeration of all the colours. A mixture of red and yellow produces orange, yellow and blue produces green and that of blue and red produces indigo and violet. There are various other shades of colour—light red, deep yellow, brown etc. Light is produced by vibration in the ether and this vibration impinging on the retina of the eye creates the sensation of light to a person. The wave length of this vibration is different for different colours or, in other words, this variation of different wave lengths produces different colouration. The wave length of the red light is longest and that of the violet is the shortest. We see an article to be of a particular colour because it has got the power of absorbing all other vibrations of the white light which falls upon it, except of one, which, striking on the retina, gives the sensation of that colour. Black coloured garments absorb all kinds of the wave lengths of light, whereas the white garments do not absorb any kind of the wave length but reflects each. Our idea of colour is based on the seven colours of the spectrum, though the individual perception of colours differs greatly ; thus, the indigo colour is perceived only by a few. The rays of light beyond the spectrum are invisible to the human eye. The red end of the spectrum–in simple word, the red colour, has got powerful heating power. On the other hand, violet has got powerful chemical action, which is wanting in red. Some people are colour-blind. To those who are totally colour-blind the whole thing appears to be gray. In a partially colour-blind case, orange, blue and yellow may be missed. There are persons who can see only two colours.

Clothings are used by all civilised people and it is found that various colours are chosen for the garments. The objects of clothing are generally:–

(1) protection of the body against external injuries,

(2) protection of the body against heat and cold,

(3) assistance in the maintenance of the body heat,

(4) decency of the person, and

(5) personal decoration.

The ordinary garments are made either of one or a mixture of two or more of the following materials:— cotton, linen, wool and silk. Of these, cotton and linen are good conductors of heat and, therefore, the heat of the body is not retained by these articles, but is rapidly dissipated. Whereas, wool and silk are bad conductors of heat and therefore the heat of the body is maintained. Leather and water-proof materials are also used to make garments.

Considering all these points the cotton and linen dress are used in summer and wool is used in winter. Silk can be used in both the seasons. It is less absorbent than wool. Silk dress is also very clean but is more difficult to be washed and disinfected than the cotton garments are. With this idea, it is clear why and when the dress of different materials should be used. Now, the fabric of all these materials may be coloured and hence this selection of colour comes which is the subject of my discussion.

The most important purpose of clothing is to assist the maintenance of body heat and the colouration helps in this matter. Black coloured garments absorb and retain more of the heat than any other colour; whereas the white ones can neither absorb heat nor retain it. The order in which the different colours absorb and retain heat from external sources are as follows:—black, dark blue, light blue, dark green, turkey red, light green, dark yellow, pale straw and white. Thus, when the purpose of clothing is to maintain body heat, the selection of colour would help, and if not black, blue colour garments would be chosen. But in selection of colour this point is seldom given importance. The colour is selected by fancy and is used for the purpose of personal decoration.

According to Bain, the sensation of light is a pleasure, and colour is an additional effect to extend the optical pleasures. When we give a preference to a certain colour it is "owing to a deficiency as regards that colour." If we see a colour often, it gives no further pleasure but another colour which is not seen often would give pleasure and would be liked. Lustre of any article adds pleasure and hence any coloured article having lustre is preferred to a mat one.

According to the Platonic third theory, "The Beautiful is a particular variety of the Agreeable or Pleasurable". Coloured articles produce pleasure because they are considered to be beautiful. The choice of a certain colour of a garment appears to be due to the fact that the individual would consider that particular garment would make the body beautiful and hence that colour gives the desired pleasurable sensation, and the choice leads to a particular colour. Each has a peculiar notion of pleasure, and some are inclined to one form, while the others to other forms. It depends upon the nature or upon the characters of the individual. The desire or aversion of a particular colour depends on the particular nature of the individual.

This individual nature is different for different persons and is a peculiar trait of the mind. In the matter of selection of colour of garments the females are more sensitive than the males. Hundred and three girls were asked about the choice of a particular colour and 3 voted for red, 63 for orange, none for yellow, 14 for green, 8 for blue, 4 for violet and 11 for white. Thus, the percentage is as follows:— 2.91 for red, 61.16 for orange, zero for yellow, 13.59 for green, 7.76 for blue, 3.88 for violet and 10.67 for white. It is seen that most of them liked orange colour. In other words, they preferred the colour of the red end of the spectrum and disliked that of the violet end.

While considering the nature of an individual, I cannot restrain myself from not mentioning the points of the Esoteric Astrology, in which the human nature has been attempted to be studied. In modern Astrology, eleven planets have got influence on human beings and these eleven planets are supposed to form the destiny of a person, and each individual is dominated by the influence of a particular planet and the destiny is the sumtotal influence of all these planets. In Esoteric Astrology, stress has been given about the influence of particular planet on the formation of the character of a particular person

having greatest influence from that planet. Thus, one born under the predominate influence of Sun, prefers orange or golden colour. Influence of Moon gives liking for white, pale green or violet colour; Mars gives flame colour; Mercury gives yellow or Azure blue; Jupiter gives light blue, violet, purple or gold colour; Venus gives primrose or indigo colour; Saturn gives black, blue, dark brown, indigo or green colour; Dragon's Head (Dragon's Tail, though not actually a planet, is supposed to have influence akin to a planet) gives black or blue colour; Dragon's Tail smoky colour; Uranus gives golden, violet or mixed colour and Neptune gives indigo, mauve or lavender colour. This is to give an idea about the nature of an individual in selecting a particular colour.

While sitting for exposure before a camera, one must be careful in the selection of the colour of the clothings. The colour of the garment presenting to the human eye differs greatly from its effect on the photographic plate. The colours of the red end of the spectrum are black in the photographic print; whereas those of the violet end produce white appearance in the photograph. Of course, the deeper the shade of the colour, greater is the contrast. The deep red colour is almost black whereas deep violet produces almost white shade in the print. The lighter is the colour, the lesser is the contrast. Red, orange, yellow and green are the colours of the red end of the spectrum, whereas the colours blue, indigo and violet are of the violet end. With the advancement of the photographic science, at present, it has become possible to produce photography in natural colours but that involves a process which is not ordinary.

It has been pointed out that the idea of colour is based on the different colours seen in a spectrum, but there are various shades of these colours and they have got different nomenclature also; and it may be interesting to have the important ones mentioned here. They are as follows:— red, orange, seinna, umber, chrome, crimson, brown, sepia, carmine, scarlet, madder, purple, vermilion, pink, rose, lavender, lilac, yellow, ochre, lemon, gambose, green, emerald, olive, leafy, sea, viridian, turquoise, blue, blueblack, prussian, azure, ultra marine, indigo, mauve, magenta, violet and grey.

The colours have important relation to health. The rays passing through garments of different colour have either important chemical or bactericidal action, and they have got heat-dissipating or heat-preserving powers. Some colours produce calmness, some stimulate the mind. The glare of bright coloured garment may produce nervous disorders and it may produce over-stimulation, and over-sensitiveness. Some are attracting and therefore pleasing, some produce aversion and therefore disgusting. Some coloured garments, specially violet ones, may produce freckles to sensitive skin and therefore prove injurious to health. Thus, I conclude with the statement that coloured garments have got relations to health, and in choosing the colour, one should be careful about the purpose they are intended to serve and one should not be guided by fancy alone. Nature appears to have some purpose in creating green chlorophyll, purple red retina, blue sky, black hair and, above all, the white sun light.

From birth to death, a human being is surrounded by greatly varying environment, and to continue life what is wanted is health of body and mind. Peace of mind, and body free from disease are the criterions of existence. Clothings come under personal hygiene, and all other things being equal, colour of clothings plays an important role in maintenance of health, both of body and mind. A clothing made of the same material,

if dyed of different colours produces different effects as regards its purpose and its utility in preserving heat of the body and peace of the mind. A particular colour of a clothing made of the same material would make it more suitable to an individual to be worn in different ages of life, in different moods of mind and in different seasons of the year. Thus, the selection of colour of clothings is not a trifling thing, but it entails much science, philosophy and health.

The Betel-Nut Chewing and Cancer

By Aurelio Dayrit, M. D.

It is not the purpose of this paper to introduce or suggest new methods of diagnosis and treatment of cancer of the cheek, nor do we intend to advance new theories as to the etiology of cancer. We shall attempt however to show that at least in the Philippines aside from the other common causes of cancer of the cheek there seems to be a special source of irritation which is entirely tropical and, therefore, it is not well known by foreign investigators and thereby it is not often mentioned in the literature abroad. This special source of irritation which seems to be highly responsible for the frequency of this disease is the generalized habit of chewing buyo (betel-nut compound) particularly among the common people. Among Christians the habit is indulged mostly by old people of both sexes, but among Non-Christians it is a habit of the young folks as well. This betel-nut chewing habit seems to be one of the most important factors in the etiology of cancer of the cheek among Filipinos. This contention is based on the record of 70 cases admitted in the San Juan de Dios Hospital during the last 10 years (1931-1940). The records show that out of a total of 70 cases of cancer of the cheek, 42 cases (60%) had a history of this habit of chewing buyo (betel-nut). In 23 cases (32.8%) the habit was not mentioned in the history and in only 5 cases (7.2%) this habit appeared as denied by the patients. The incidence of betel-nut chewing among these cases would still be higher if we take into account the possibility that among the 23 cases where this habit has not been mentioned in the history, most of them might have been chewing buyo for some time before the onset of the disease and that the absence of this habit in the history was mostly due the carelessness of the historian. It is also noteworthy that most of these patients (95.7%) belonged to the indigent class of people (charity ward) and only a limited number were pay patients (4.3%). This is significant, for this habit is especially prevalent among the country people. It is usually transmitted from generation to generation and the folks (cancer age) have had usually this habit for a period of many years.

It is an established fact that a prolonged chronic irritation is an important contributory factor in the production of certain types of cancer, thus, a misplaced tooth may cause an epithelioma of the tongne or smoking may be responsible for the appearance of cancer of the lip. Syphilis is said to be a predisposing cause to buccal epithelioma especially of the tongue. Martin from the Memorial Hospital of New York in a recent report (Oct. 1940) found that 33 per cent of his cases of cancer of the tongue also had syphilis. Beeson reported 30 per cent; Scheriner and Brown gave 40 per cent and Kaplan of the Bellevue Hospital of New York had a higher

percentage of syphilitic cases (41 per cent). These authors especially Martin believe that chronic glossitis in late syphilis is an etiologic factor of cancer of the tongue. This may also be true in cancer of the lip. With cancer of the cheek, however, the influence of syphilis as a predisposing factor may not be as important because the cheek does not seem to be a site of predilection of intraoral syphilitic lesions as it is for instance, the lips or the tongue and most of our cases were country folks where we know that syphilis is not rampant as it is in the city. Furthermore, very few of the cases that came under our personal observation in the ward reported a strongly positive Wassermann. It is very unfortunate that due to the incompleteness of the Wassermann reports in our cases, we are not in a position to make definite conclusions as to the influence of syphilis in this disease.

The chronicity of the irritant seems to be more important than its nature. Most of the patients in our series of cases, revealed in the history that they had indulged in this habit of chewing buyo for years previous to the onset of the disease and still a few admitted that they had continued chewing until they could chew no longer. In the majority of the cases, the growth was found upon the side in which the quid was habitually held. This seems to be more often than mere chance would allow. The prolonged contact of the betel-nut compound with the delicate mucosa of the cheek and the resulting chronic irritation produced especially by the use of slaked lime with its caustic property, is apparently the determining factor of epithelioma in this region. George G. Davis as far back as 1915, reported identical findings in his paper entitled "Buyo Cheek Cancer". He said that lime is an essential part of the "chew" without which it is bitter and has no flavor. About 81 per cent of his cases also chewed buyo and only 9 cases were doubtful. In more than 50 per cent of the patients, the lesion was found on the same side in which the chew was held and he concluded: "Cancer of the cheek in the Philippines is caused by chewing buyo and the active agent is lime." He said further that "buyo cancer is a distinct, definite and separate disease of Oriental tropical persons having an entity as definite as the Roentgen-ray epithelioma of the hands of early Roentgen-ray workers, the skin cancer of paraffin workers and the brand cancer of cattle of the United States and the chimney-sweep's cancer of England". It is the habit of betel-nut chewers to be chewing almost all the time, except during meals and sleep and as a rule the quid is held in contact with the mucosa of the cheek and is being continuously replaced by a new compound due to the disappearance of its flavor and taste. This will give an idea of the chronicity and almost continuous action of the irritant. This habit of buyo chewing may also be responsible to a certain degree for the frequency of other anatomical varieties of intraoral cancer particularly in epithelioma of the tongue. Many of these cases showed in their histories that they have also indulged in this habit for years although other sources of chronic irritation were usually found such as smoking, dental defects, etc. It is interesting to consider the fact that if cancer can arise from the mucosa of the cheek as a result of this type of irritation (betel-nut) it would be difficult to believe, that this same irritant cannot affect in the same way the other parts of the mucous covering of the mouth cavity including the tongue. In 1921 Dr. Aller G.Elles of Bangkok, Siam (now Thai), made an inquiry throughout the country on the frequency of cancer of the mouth in betel nut chewers. He received reports from 16 physicians ranging in experience from 3 to 35 years. These physicians reported having seen 93 cases of cancer of the cheek, 46 cases

of cancer of the lip and only 2 cases of cancer of the tongue.

It is also interesting to note that none of these physicians reported a single case of intraoral cancer among non-chewers of betel-nut. This is an indication that although the mucosa of the cheek is the site of greatest irritation in betel-nut chewing, the other parts of the oral mucosa are not spared from this irritation especially the lips and the tongue. It is very possible therefore, that this generalized habit of betel-nut chewing may be one of the many causes of intraoral irritations that make cancer of the buccal cavity very common in the Philippines and the resulting high mortality which is reported as second only to that produced by cancer of the stomach and liver. According to the monthly Bulletin of the Bureau of Health, May, 1940 (furnished us through the courtesy of Dr. Aycardo) the proportionate mortality due to cancer of the buccal cavity in both sexes is 17.% for every 100 deaths due to cancer and is second only to the death rate produced by cancer of the stomach and liver which registers 31.5% in both sexes. Considering that, with the exception of the tongue, the cheek is the most common seat of epithelioma of the mouth cavity, it is obvious that this disease plays an important part in the cancer mortality of this country. The same monthly Bulletin shows that except in Rangoon, Burma, the death rate due to intraoral cancer in this country is much higher than that of other countries. The proportionate mortality here being 17.9%; it is reported to be only 6.6% in the Federated Malay States; 5% in Singapore; 6.4% in Australia: 4.6% in San Francisco, U.S.A.; 5.6% in Massachussetts; 10.2% in Bombay, India; and 17.6% in Rangoon, Burma. The death rate due to cancer of the stomach and liver is the highest in all these countries. It is reported to be 31.5% in the Philippines; 46.7% in the Federated Malay States; 55.4% in Singapore; 35.8% in Australia; 35.1% in San Francisco,U.S.A.; 31.4% in Massachussetts; 25.7% in Bombay, India and 32.1% in Rangoon, Burma. It is evident from these statistics that the mortality due to intraoral cancer in this country being second only to that of cancer of the stomach and liver may well be attributed to the betel-nut chewing habit of our population. The same habit may also be responsible for the high incidence of this disease in Rangoon, Burma, and other neighbouring countries.—*The U. S. T. Journal of Medicine.*

Tuberculosis Notes

Even in the most disastrous wars it is clear that the casualties are trivial in comparison with the annual morbidity and mortality from wholly preventable causes suffered by the population. Along with the expenditure of dizzy billions to combat foreign foes, it would seem the part of wisdom to devote a respectable amount of our defence energies and resources to the conquest of the ever-present and very real foes within our domestic circle, if for no other reason than the fact that the first line of military defence is the health of the civilian population.—K. E. Miller, Med. Dir., U.S. Pub. Health Ser., *Amer. Rev. of Tuber.*, Dec. 1941.

The search for sources of infection in tuberculosis is an important part of tuberculosis case finding and may be almost as productive of results as the search for cases among contacts. G. E. Harmon, M.D. and Bruce H. Douglas, M.D., *Amer. Rev. of Tuber.*, Dec. 1941.

Tuberculosis as a cause of death among the wives of men who died of the disease is almost three times as high as it is for all women. Among sisters the relative frequency is 2.3 times as high. Antonio Ciocco, M.D., *Human Biology*, May, 1941—*Med. Woman's Journal*, Feb. 1942.

Utility of Butter-Milk

By G. N. AIYANGAR, *Vizianagaram.*

Butter-milk is a very common form of food or beverage in every Indian house-hold, and it needs no elaborate exposition. But, as it is consumed in the natural course, and in large quantities, unmindful of the beneficial results it confers on us, it would be desirable to know something of it.

Butter-milk is the liquid residue, after curd is churned with added water to any percentage, and the butter from it is removed. Though butter from it is removed, it is still called butter-milk due to the certain butter properties it has. It is sour to taste, and the more so in summer due to the presence of lactic acid in it which is derived from the conversion of sugar. The food value of butter-milk is all the more enhanced, due to the presence of casein. It is the cheapest of all the foods available, as a cupful of it does not cost more than a pice. Butter-milk is also a source of protein content. It is a very good drink with diuretic properties and appeases thirst to a great extent. During summer, rich persons distribute butter-milk free of cost to pedestrians, and it may be said that it is a form of charity which is "twice blessed".

Butter-milk vendor.
A typical case to be brought under the cognisance of the Madras Prevention of Food Adulteration Act III.

Butter-milk remains without putrefying for a considerable time, due to the presence of lactic acid in it. Lactic acid is an anti-putrefying agent. Curd is more easily digested than milk as the casein in it becomes easily soluble. Hence, curd is also a good food. Butter-milk has many good medicinal properties. Some cases of intestinal troubles, rheumatism, gout and nephritis had beneficial results by the administration of butter-milk. A dyspeptic friend of mine who was also very anæmic took buttermilk regularly and improved his health. Spurious dealers add dirty water to butter-milk which requires penalising. The Madras Prevention of Food Adulteration Act III of 1918 does not include "Butter-milk" as one of the *foods* under the interpretation clause, though *flavouring matter* and *condiments* come within its purview. A specific standard should be prescribed for butter-milk as well, to restrict the addition of maximum amount of water, and that too from road margin pools.

WHAT IS FOOD?

By G. T. WRENCH, M.D., (LOND.), *Karachi.*

WHAT is food? The answer is, of course, rice, atta, vegetables, fruits and so on, which are bought in the market and eaten in the home. But this evening I want to consider food in a less obvious way, and to do this, I have to start my lecture at the other end, and to discuss what food is from an examination of sewage sludge and sullage water, such as is spread out over the Municipal Sewage Farm's land scarcely a mile away. The Karachi sewage and sullage water have not themselves been examined, but sludge and sullage have been frequently examined. Here is a list of the elements found in them compiled from two examinations, which I have on my files: nitrogen, oxygen, sodium, potassium, sulphur, carbon, iron, iodine, lead, lithium, magnesium, manganese, fluorine, zinc, phosphorus, silicon, cobalt, copper, arsenic, bismuth, aluminium, boron, chromium, barium, strontium, cadmium, tin, vanadium and titanium. That makes thirty elements. I have no doubt too that rare elements, like cæsium and rubidium must occasionally be found, but we will be content with thirty elements, conveyed into the body as food. The atmosphere with its carbon dioxide, oxygen and nitrogen, is also a source of food, but these three elements are included in the thirty.

Excepting the atmosphere as a source of oxygen, as well as of some of the nitrogen and carbon of plant tissues, where do these elements come from? They come from weathering or crumbling of rocks into soil. Some may come *via* the sea, but the sea also has its soil made from weathered rocks. This weathering is a very slow process. The geologist, Mr. T. C. Chamberlin, told a Conference held at the White House, the official home of the Presidents of the United States, that, without any pretensions to a close estimate, he would give the mean rate of soil formation as one foot in 10,000 years or 40,000 years for the common four feet of soil in many parts of the States. At any rate, this crumbling is very slow, in other words, the process of making rocks serviceable for food is very slow.

Normally, in nature, once the elements are in the soil, they are not lost to the soil, for, when taken up as food by microbic, vegetable and animal life, they are as constantly being returned to the soil as excreta or by the death of the living organism. Only in our present civilization are many elements lost in rivers and seas, because of the water-carriage system of modern sanitation. The amount of the elements lost by sanitation is so great as to become even serious. Wolff, Kellner and Carpenter calculated that, in the United States and Europe, countries lose from 5,794,300 to 12,000,000 pounds of nitrogen 1,881,900 to 4,151,000 pounds of potassium and 777,200 to 3,057,600 pounds of phosphorus per million of population, into the sea, lakes, rivers, or underground water. *This loss illustrates a hitherto unconsidered danger of that of which civilization is so proud, its hydraulic sanitation. It is a loss and waste of the elements of life.*

The soil itself in nature is no inert, dead thing. It is very much alive, swarming with microbes and fungi which use these elements as their food and break them down into the simple forms in which they become dissolved in the water of the soil and taken up in liquid form by the root-hairs. There, together with elements breathed in by the green leaves, they form the substance of plants. These substances in their turn, form the food

of animals. *Though animal may eat animal, all animals ultimately get their elements from the soil by way of vegetable life.* They may occasionally get some from the river, lake or sea, and they breathe in the oxygen of the air.

These thirty elements are, therefore, in a constant state of transition. When a man buys his foods in the market, he thinks of them as something static, something fixed, as they are for the time being, but in the larger picture the elements are in transition. At one time they form the food and substance of the microbic world of the soil, at another, the food and substance of the plant world, at another, the animal world and, from the last two, they pass back again to the microbic world. The gases of the atmosphere and of fermentation and putrefaction go through similar cycles. Everything in life occurs in cycles and every thing is in transition, as the Hindu philosophers long ago discovered. Now, it is interesting to see how innumerable are the forms that these elements can take in their transitions. Let us take the three commonest elements of food, carbon, oxygen and hydrogen. These three can group themselves in an uncountable number of ways and make a different substance in each group.

Nature does a further piece of her marvellous jugglery and turns these same three elements into the fats. Here for example is an arrangement, which makes a fat: C3 H5 (O. CO. C15 H31) (O.CO. C17 H33) (O.CO. C17 H35). So with these three elements, nature manufactures the large groups of food substances known as carbohydrates and fats. But that is not the limit of her power. From these same three elements she manufactures certain hormones; and again from them she makes most of the known vitamins, according to their present analyses, with the addition of nitrogen and sulphur to the original three, she makes one or two other vitamins and hormones, and with the original three, together with nitrogen, sulphur and phosphorus, she manufactures the amino-acids, which form the basis of the great protein group of food substances. The microbic world of the soil and the plant world of the soil, then, are but other phases of the animal and human world. The three phases form a trinity which is really one. And in the light of this great truth, it is clear that we shall only get the human phase right, if we consider its association with the microbic and plant phases of the soil. In other words, the state of the soil is the most important thing in the quality of living terrene man and agriculture by far their most important function. Here I want you to pause and reflect that we, who are gathered here on March 25th, 1941, have made probably several journeys back to the soil since March 25th, 1940. One can roughly guess at the rate of return to the soil by watching the growth of terminal things like the nails and the hair, and all our bodily substance is similarly renewed. Every terrene animal in nature returns as surely to the earth during life as it does after death. It forms one cycle, with the soil as its other phase. How all important then is the soil in terrene life?

Yet I need not tell you that in the present day the care of the soil is not a dominant, but a very subordinated function, because you all know that. Our own profession shares the general intellectual disregard towards agriculture and the soil. It does not, for example, deal with nutrition in terms of a cycle, but with our food and its constituents, as found by analysis, as separate things in themselves. In other words, it deals with them individually and fragmentarily. It secures a number of striking individual successes in this way, but by work that is unquestionably based on a fragmentary and not a cyclical outlook. The fashionable furore for vitamins, while the agricultural soil degenerates from lack of the proper return of the elements, is typical of

the fragmentary outlook of the profession and its nutritionists. It is, indeed hard for the medical profession, with its hereditary position as guide and guardian of the public health and its wonderful individual discoveries in its own realm, to realise that the true source of that health lies outside it in sound farming.

Let me sum up. Food is composed of elements of the atmosphere and those of the earth. Through the art of agriculture man has made for himself a special use of those of the earth. These terrene elements pass into the plant, then into animal life and then back from plant and animal to the microbic life of the soil, in an unceasing cycle of transitions. To keep its quality this life must keep its cycle intact. For our own human quality to be good, we must think of it as a phase of a whole, 'whole' being itself but another form of the word 'health'. We must see that each part of the cycle is respected and that human life is no longer permitted to maltreat and rob what is really itself in another form, the soil. In other words, if man is to treat himself rightly, he must first treat the other living phases of his substance, those of the plant and the microbe, rightly.* — *J. I. M. A. Dec. 41.*

* A lecture delivered at the Sind Branch of the Indian Medical Association, March 25, '41.

SOME COMMENTS ON THE POSSIBLE CAUSATION OF DENTAL CARIES

By C. DOSWELL WALLIS, L.D.S., R.C.S. ENG.,
Past-President, Dental Group, Society of Medical Officers of Health.

ANY hypothesis or theory must explain logically all known facts and phenomena and stand the test of clinical observation and experience.

The causation of dental caries is not so great a mystery as many seem to think when looked at from a commonsense point of view.

That it is a product of civilisation is incontrovertible. It has been the result and companion of every increase in ease, luxury and artificial modes of living, from the times of the most ancient civilisations of Babylon, Egypt, Rome and Greece, all of which have left records and evidence of the prevalence of this affliction. Primitive native races, when introduced to civilised methods of living and diet, invariably show serious and immediate deterioration in the condition of the mouth and teeth, c.f. Eskimo, Maories, Africans, etc. Even animals, living in captivity or domesticated, fall under this baleful influence, and the more removed from natural standards their diet becomes, the worse the oral condition.

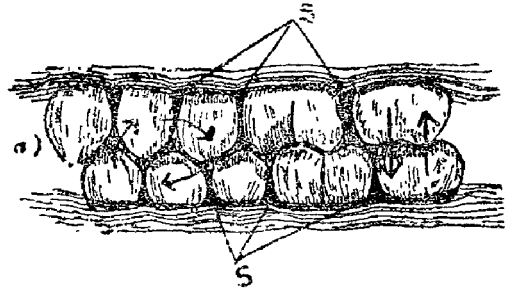
The pernicious effects of an artificial civilised diet are clearly shown even in this country, where the better-off classes suffer to a greater extent from dental affections than those less able to afford a rich diet, and the only ones to preserve a high degree of freedom from oral disease are those living in isolated and inaccessible places where the "blessings ?" of civilisation are not readily obtainable, or where extreme poverty limits diet to the simplest necessities, *e.g.* the Isle of Skye, and many remote rural districts.

There would appear to be no good reason for supposing that dental caries differs fundamentally as to its ætiological aspects from other diseases, always bearing in mind that this condition shows little or no tendency

towards spontaneous cure and that no immunity is produced by previous attacks.

It is, therefore, reasonable that an exciting cause and a predisposing cause (or causes) should be sought.

The picture one gets from a survey of literature dealing with this matter is of attack primarily by a specific mifco-organism—*bacillus acidophilus odontolyticus*—which not only produces substances capable of disintegrating the hard tooth substances, but has the peculiarity that it can only flourish and proliferate in an acid environment—this is the exciting cause.



Teeth—A diagrammatic representation of part of the left side of the mouth, showing the spaces [s] between the necks of the teeth and the gum where a tooth pick or gloss silk is necessary to remove the food debris. A circular as well as an upward and downward motion should be used when brushing the teeth as indicated by the arrows.

This acid reaction in the mouth is the outcome of, and favoured by, the unnatural modes of life and diet peculiar to civilisation — this is the predisposing cause (s). This acid condition arises from such items as excessive and concentrated quantities of sugar, carbohydrates and other fermentable foodstuffs, lack of correct and sufficient mastication and general neglect. Other factors, such as faults and crevices in the tooth-crowns and fissures, either normal—providing lodgment for fermentable material, bacterial plaques, etc.—or due to slight local arrests of development—giving, if sufficiently marked, access to the dentine of the tooth structure—or due to the after-effects of disease, *e.g.* the exanthematous fevers, providing lodgment places that may extend through the enamel, or from damage produced by the effects of overcrowding and pressure, effecting crushing and bruising of the enamel prisms locally, which are thereby weakened and more readily penetrated or disintegrated.

The condition and composition of the saliva also have a determining effect on the problem. And this again is dependent on constitutional factors largely linked with modern diet, modes of life, endocrine metabolism, etc. Movements of the lips, cheeks and tongue, which produce and accentuate currents and tides in the flow of saliva, influence the solution of this problem.

The fact of the lesser liability of the lower incisor teeth to decay is simple, being obviously due to their being constantly bathed and standing in a pool of saliva, the effect of which is two-fold.

1. The normal, alkaline reaction of the saliva discourages the growth of caries producing bacteria and neutralises acid produced by them or by fermentation (c.f. the formation of tarter in this location).

2. The action of the tongue tends to keep these teeth more free from food debris than other parts of the mouth less favourably situated.

A study of comparative anatomy, physiology and biology leads to the conclusion that the function of teeth is not confined merely to mastication but to the capture or acquisition of food as well. In a word, they are developed for and adapted to fighting, not only to obtain food, but to protect the individual's life (or that of the

family or herd), and in sexual combat, as well as for the main function of mastication.

The principal object of the possession of teeth is clearly connected with food, and it is astonishing to reflect that, owing to the development and so-called progress of civilisation, the very food they are specially designed to seize and masticate should prove their deadliest enemy and cause their destruction, more especially as they are the most resistent structure in the whole body, to time and natural forces, as witness the fact that fossil remains, at times, consist of little else than the teeth, all other structures having been destroyed.

The Mellanby school of thought, however plausible the reports of their research and investigations may appear, entirely fails to establish, either logically or clinically, that the deficiencies upon which they base their theories actually exist in a sufficiently marked degree amongst some 95 per cent. of the population of civilised countries to produce the results ascribed to them.

A diet high in vitamins, indeed over-rich (an infinitesimal quantity only being necessary for the maintenance of health), does not lead to any appreciable reduction on the incidence of caries, whereas a diet approximating somewhat to that recommended by the Wallace school, and which was forced upon numbers of people during those lean years at the end of and immediately following the conclusion of the last Great War, and which diet was further markedly deficient in foodstuffs having a relatively high vitamin content, actually produced a definite reduction in dental disease, as shown by clinical observation at and by the statistical returns of, the school dental services.

The Sim Wallace school of thought maintains not only that caries is due to lack of exercise and functional activity and to unsuitable diet, but also to the fact that a modern, civilised diet fails to maintain physiological cleanliness in the mouth.

The secret of immunity or of comparative freedom from dental disease and caries would seem to lie in this matter of physiological cleanliness. Not merely mechanical cleanliness, most emphatically not surgical cleanliness, but that state of cleanliness that Nature designs as a necessary adjunct to the preservation of the teeth, and which can best be attained, perhaps only be attained, by eating the right kind of food in the right way.

The presence in the mouth of bacteria, which are normal to all the mucous cavities of the body, is most beneficial. This normal, indigenous flora, resists the invasion of extraneous growths, tending to keep the mouth free from disease germs, and should not be discouraged by the use of antiseptic mouth-washes or dentifrice, unless such is indicated by and prescribed for some definite diseased condition in the mouth.—*The Medical Officer.*

Fee Splitting: "I guess you're getting a good thing o' tending the rich Smith boy, ain't ye, doctor?"

Doctor: "Well, yes; I get a pretty good fee. Why?"

"Well, I hope you won't forget that my Willie threw the brick that hit 'im."—*Royal Arcanum Bulletin.*

*** *** ***

"I can't quite diagnose your case. I think it must be drink."

"All right, doctor, I'll come back when you're sober."

THE OVERWEIGHT CHILD

BY LIONEL M. LINDSAY.

(From "The Canadian Medical Association Journal", May, 1941.)

In a paediatric practice many children are encountered whose chief complaint is that of being considerably overweight.

For practical purposes, any child may be considered overweight who is more than 20 per cent. above the average weight for age,height and sex when compared with standard tables. All grades may be seen, even to those who are double their expected weight. Some observers claim that obesity may be gauged more accurately by clinical inspection than by height and weight tables, for then the distribution of fat and general physique may be taken into consideration.

It is generally assumed that the increase in weight of this type of child is due largely to an increase of adipose tissue. This is not always the case. Overweight children are frequently above the average in height. Their bones appear to be larger, and it has been shown that their weight is due as much to increase in muscle as to fat. Sexual development occurs somewhat earlier than in the average child. In short, the overweight child is often bigger and stronger than his slimmer companion. But the greater strength is sometimes counteracted by the greater load he has to carry, and so he may become somewhat cumbersome or complain of a variety of symptoms, such as dyspnoea, flat feet, or pains in the back or legs.Such symptoms would make the child less active, and so a vicious circle is established. He becomes indolent and lazy, and so heavier. But generally speaking, stout children are particularly cheerful and bright and their round, rosy faces are a pleasure to behold.

The onset of obesity may be quite rapid, beginning usually when the child is between 8 and 12 years of age. Sometimes the onset dates from an illness or operation, at other times it developes more insidiously. The cause may be difficult to ascertain, and the pathogenesis is uncertain. Heredity is a very definite factor. Often one or both parents is decidely large or obese and the offspring may be strikingly large, even in early childhood. Such children may have an abnormally large appetite especially for carbohydrates, but this in itself does not necessarily lead to obesity. Many a "skinny" child will consume a comparable amount of food without noticeably increasing his weight.

When the obesity appears to be caused by overeating or lack of exercise it is said to be of exogenous origin. When it occurs as a constitutional abnormality (probably hormonal), it is designated as endogenous. Authorities on the subject differ widely in their opinions regarding the relative importance of these two causes.

It would seem that while some overweight children fall definitely into the exogenous category, and some are obviously the victims of endocrine disturbance, the majority may be grouped between these two extremes. All are the result of a peculiar metabolism, which in the last analysis is probably governed by glandular action. This would seem to account for the tendency of boys and girls to put on excess weight at the time of puberty, and later, as the glands become hormonized, the adolescent assumes more normal proportions.

It has humorously been suggested that the obese child may be classified as, the enviable, the comical, and the

pitiable. Obviously those in the first class would require no treatment. The others require some consideration. The fat boy in "Pickwick" might be considered both comical and pitiable.

It is necessary then before undertaking treatment to consider the individual case in all its aspects. The heredity and physique of the child's forbears indicate the child's possible tendencies. The eating habits of the child must be ascertained, especially in regard to the nature of the foods which he likes and dislikes, and his habit of eating between meals. An estimate of the amount of exercise he takes is also necessary. The age of onset of his obesity and the manner of its development may suggest a clue to its underlying cause.

The physical examination will reveal the child's general physique, the distribution of fat, the texture of his skin and hair, and the sexual development. If the condition seems to warrant further investigation one may require a basal metabolic rate, X-ray films of the sella turcica and centres of ossification. A determination of the sugar tolerance, specific dynamic action, and the creatinine coefficient may also be required. Yet it is surprising how seldom one finds any abnormality by these tests.

However, by such means a certain number of cases will be found which can be classed as due to endocrine dysfunction. One must bear in mind that the basal metabolism rate of the overweight child cannot be measured by the same standards as the average child. The most accurate readings are perhaps obtained when computed on the basis of height rather than on the usual surface area.

Hypofunction of the thyroid or the pituitary gland are by far the commonest disturbances which lead to obesity of more or less characteristic type. The term Frohlich's syndrome, or dystrophia adiposo-genitalis, is rather loosely used to designate an overweight child with particularly small genitals. True instances of this are not common. The syndrome is probably caused by some lesion in the hypothalamus associated with impaired function of the hypophysis. Occasionally one encounters obesity resulting from tumours or hypertrophy of the adrenal cortex or of the gonads. Other glandular disturbances may be associated with these and the pattern becomes intricate.

Before advocating treatment still other things must be taken into consideration. In the first place, if the child is strong and healthy, and is not concerned with his or her appearance, and not suffering from any complaint that might be attributed to his weight, it would seem advisable to be conservative, and to keep the case under observation. Natural growth and development may bring about an amelioration of his condition with the minimum of interference. But, if normal activity is hampered, and the child complains of dyspnoea, pains in his legs and feet, and, particularly, if he is sensitive about his appearance, some effort should be made to improve the condition. The importance of the psychological factors in this regard have been stressed by Dr. Bruch of New York. The child often resorts to eating as a solace to his wounded pride or handicap in not being able to compete with his fellows.

The first essential in the treatment is to secure the co-operation of both parent and child. Without this one can hope to accomplish little. Eating is a pleasant pastime which may become pathological. The indulgent mother may develop in her child the habit of stuffing himself with ice-cream and cake at all times of the day. To break this habit will be a real struggle. The child should be protected from the temptations of the pantry. Tact will be necessary and the child may be allowed an apple or pear between meals in order to

appease his appetite. It is understood that lapses from grace are apt to occur and must be condoned.

Whether the obesity is considered as due to exogenous causes or endocrine disturbance, reduction in the amount of food consumed will produce a loss of weight. Discretion must be exercised in restricting the diet of children, especially at the period of rapid growth and development, when normally large quantities of food are consumed. It would be unwise and perhaps detrimental to advise any drastic cut in calories at this time. But the total calories may be considerably reduced by limiting the consumption of fats and carbohydrates, provided a liberal amount of protein and green vegetables is allowed. These not only satisfy the appetite but also supply the physiological needs of the patient. Moreover a high protein diet tends to stimulate metabolism and thus prevents the storage of fat. There is a tendency in obesity for the tissues to hold an abnormal amount of water, and so it would seem rational to restrict the quantity of water and salt consumed by the patient.

General rules for the regulation of the diet are usually sufficient, at least in beginning treatment. The following have been found satisfactory.

Do not eat: Fried food, sausages, pork, salt fish, cake, candy, jam, syrup, ice cream, pastry.

Eat small quantities of bread, potato and butter. Eat largely of green vegetables, salads and fresh fruits, lean meat, cheese and fish. Take 30 ounces of milk daily, but no cream. Buttermilk or skimmed milk is sometimes preferable. Take only one small glass (six ounces) of water before or during the meal. No table salt should be added at meals. Additional fat-soluble vitamins should be given.

If these instructions are carefully followed and do not bring about an improvement a more specific diet providing for 1,500 or 2,000 calories may be prescribed. By such means a stationary or even reduced weight will produce the desired results, for the child will continue to grow in height and so assume more graceful proportions. The importance of an adequate amount of protein, calcium, and vitamin D at puberty must be stressed. The development of slipped epiphysis and epiphysiolysis at this age has been attributed at least in part to an insufficiency of these elements in the diet.

Secondly. Increased activity should be encouraged, beginning with gentle exercises and increasing in proportion to the child's tolerance. Swimming and bicycling are perhaps two of the most suitable forms of exercise for those children whose weight definitely hampers their movements.

Some of these patients may be indolent and lazy, and may require a certain amount of urging to keep at their exercises. They may be discouraged by their lack of skill and success in games and by the derision of their playmates. To these, small doses of Benzedrine Sulphate may be given with benefit. This drug not only stimulates physical activity but is said to have a definite effect in depressing the appetite. Small doses may be given once or twice daily, preferably in the forenoon.

Perhaps the most widely used remedy for reducing weight is thyroid extract, irrespective of whether there are signs of hypothyroidism or not. Thyroid does increase the rate of cell oxidation and so burns up fat. It also tends to withdraw water from the system. Usually, it has very little effect in raising the basal metabolic rate in cases which are not frankly myxoedematous. Nevertheless, small doses under controlled conditions can be given certainly without harm, and often with benefit, especially at puberty. Pituitary preparations have their advocates, but the accredited results are not always convincing. Given by mouth, they have little effect, while the trouble and expense of giving them hypodermically is only justified under very exceptional circumstances.—*General Practitioner.*

Russians Get Vitamin C from Walnut Shells

WALNUTS may be one source of vitamin C available to Soviet Russia, as a result of experiments which were reported successful recently.

The Institute of Biochemistry at Moscow announced that the soft outer shell of unripe walnuts contains a large supply of this vitamin, which can be extracted and robbed of its bitterness and reduced to a vitamin concentrate.

Since walnuts grow abundantly in Soviet areas, the new process, described as simple, was expected to yield large quantities of vitamin C.—*Science News-Letter.*

Watch Those Teeth.

ACCORDING to certain dental statistics, the average person has four teeth missing at the age of twenty-five, seven missing at thirty, ten missing at forty, and fourteen or fifteen of the original thirty-two teeth missing at the age of fifty. Few of us remain entirely free from dental decay during adult years, for the teeth, under modern conditions of life, do not last so well as most parts of the body. Why is this so?

The answer to this question, like the answer to so many others affecting our health, is to be found in nutrition. The teeth, no less than the muscles or bones, are able to repair and renew themselves as long as they receive the raw materials for this work in the shape of the necessary food elements.

ROBBING PETER TO PAY PAUL.—When essential tooth-building elements are missing or in short supply, the body, in its own interests, diverts these elements for use in more vital parts or more important operations concerned with improving the life of the human machine. This is because the elements most beneficial to teeth are also very important to other functions.

In modern life, Nature dispenses with the least vital first. We soon loose such things as hair and teeth when our nutrition is not sufficient in quality and variety to provide all the elements we need. Although we are able to run along pretty well with several parts of the body moribund, we are like the early models of cars, still functioning—minus our former good looks and tiptop efficiency, and constantly threatened by a major breakdown.

In wartime, dental decay tends to increase. The strain on heart and nerves alone uses up calcium, phosphorus and teeth-essential vitamins more quickly. To this must be added the additional deficiencies of essential nutrients likely to arise through the food difficulties of wartime.

DIET AND GOOD TEETH —The first step in preventing decay is to overhaul the diet. The chief tooth-building minerals needed are calcium, phosphorus, silica and iron. We get these elements in milk, cheese, eggs, vegetables, fruits and whole cereals.

Each morning and night we should place a little tooth paste or Eucalyptus oil on a finger tip and vigorously massage the gums both back and front with an up and down movement for about two minutes. The effect of this exercising is to tighten the gum tissues, stimulate circulation and nerve activity, and to help the teeth.

CLEANLINESS IMPORTANT. Provided the diet is rich in the foods which build strong teeth, we have little to fear from mouth acids or decay from without. Sugar, sweets and cakes are not dangerous for their teeth-rotting properties, but because they often supplant the more essential foods, and also by reason of the fact that sugar, as such, depletes the body reserves of calcium in its assimilation.—*Good Health.*

Racial Purity and Individual Health

COMMENTING editorially on "The Psychology of Race" by J. A. Musgrane, L.R.C.P., S.I., D.P.H. in *The Medical Officer*, the editor in the end remarks,

"It is in our opinion fantastic to try to divide us into racial types, but each of our characters can be referred to some type, and we are concerned in tracing what connection, if any, exists between these individual characters and conditions of health."

Suspecting, perhaps rightly, of some connection between racial characters and conditions, the editor has given one or two following facts justifying such a suspicion.

"Japanese Women" he writes "rarely suffer from cancer of the breast. "This relative immunity is not limited to Japan, but is enjoyed by women of Japanese extraction, who have never been in their home land....." "This immunity we cannot detect, but to some extent we can tell Japanese women from women of other nations. Because, the Japanese are more racially pure than most other nationals."

"Jews who are more a race than a nation are relatively free from cancer of the reproductive organs." And with regard to the British, among whom cancer of the reproductive organs stands second in the list of causes of death, he says, "We, British, are not a race, and as a people have no racial characteristics. As individuals, we are mongrels of many races and we carry the characteristics of all."

Thus, the racial purity may be the cause of health and immunity of reproductive organs, even according to the writer, though not accepted finally. But, in India, racial purity is valued higher than anything else. The main and the worldly purpose of marriage and chastity is the purity of the race. That

being ensured, health and progress take care of themselves.

That is why divorcing of married couples is strongly condemned and contemptuously treated in India. For, chastity on which the racial purity depends, is the purity of reproductive life, and outlook. In the case of a woman who lives for long periods with different husbands, of course faithfully, there is no such thing as purity of generative life or outlook. She may be faithful in the business sense. But in the sense of a generator, she has lost purity though not the faculty. Thus, the nations and races that allow and encourage divorce system are deprived of their racial purity by their own unscientific system and not by the blood of the historic foreign conquerors of their countries in bye-gone days. And the divorce system itself is nothing but legalised and socialised debauchery and is the worst enemy of racial purity on one hand and individual and social health on the other. —ED.

Good Homes Aid Longevity

IN an investigation conducted by Drs. Louis I. Dublin and Herbert H. Marks, a favorable home environment was found to be more important than heredity in promoting long life. Their findings were reported to the annual meeting of the Association of Life Insurance Medical Directors of America, held in New York City (*New York Times*). They studied the records of 118,000 insured men for the period 1899 to 1939, and learned that the single most influential factor in determining life expectancy was whether one, both, or neither of the parents was living when insurance was applied for.

Mortality was lowest when both parents were alive; it was 88.4 per cent of the expected figure. When one parent was dead, the ratio to the expected mortality was 97.7 per cent; when both were dead, the ratio was 110.8 per cent. It was said in explanation that "children in all broken families where either or both parents have died are, on the whole, much more poorly housed, badly fed and poorly clothed than other children, and more of them are compelled to go to work at an early age; consequently, more engaged in unskilled labor and other poorly paid work than the children in normal families."

Moral restraint would probably be less for orphans than for other children. They would be more likely to fall into slovenly or vicious habits which would in the long run shorten life.—*Good Health.*

Some Points on Communal Feeding

ACCORDING to the WAR-TIME NUTRITION BULLETIN for Oct.—Novr. '41, some interesting experiments have been made in Aberdeen School canteens towards educating children to eat more wholesome food. The "Oslo breakfast" was instituted without much success, but it was found that various foods, at first unpopular, could with a little discretion be made acceptable. For instance, haricot beans, which were rejected when served whole in vegetable pie, vegetable stew, and haricot mutton, could be made more palatable by mincing. A few tins of small beans in tomato sauce were also successfully added to haricot mutton. It was found that the children enjoyed fish pie when it was made with white fish, such as cod or ling, but not with salt fish; so salt fish was added only gradually to the pie, and in this way the children accepted it without complaint. Potted herring was also a complete failure until it was gradually mixed into a popular white-fish kedjeree. Experiments with fish flakes and powder have also been successful.

Vegetables, especially green ones, have been mixed with meat on the plate, so that they could not be picked out and felt on one side. Stews have been made with plenty of carrots and turnips, and shepherd's pie with alternate layers of mashed potatoes, mashed vegetables, and minced meat. No difficulty was experienced with milk puddings or with whole or wheat-meal bread. It is curious that lemon and pineapple were not favoured as flavourings, though pineapple tartlets were liked. It is pointed out that the attitude of those serving the meal is of importance. If such people are tactful they may be able to persuade children to try new dishes more readily, and they can also inculcate pride in cleanliness.—*British Medical Journal. Jan. 17th, 1942.*

Civil Defence News

Prevention of Fires at Cathedrals

THE Ministry of Home Security is obtaining from all parts of the country particulars of cathedrals and other ancient buildings where adequate fire prevention arrangements are specially difficult. Wide parapets and gutters are liable to hold incendiary bombs, which would burn through and set light to the roof timbers before they were detected, and the wooden furniture inside would rapidly become ablaze. In many cases the problem arises from the height of the roof.

The regional authorities have been asked to provide the Ministry with full reports and with suggestions for meeting the requirements of each building where special arrangements are necessary.

* * *

Heavier Raids Likely

A WARNING that we must be ready to meet heavy air attacks during the winter was given by Mr. Herbert Morrison.

Civil defence could not stand still. During and after every "Blitz" they had looked out for new lessons, and had been ready to pounce upon imperfections. The lessons of the "Blitzes" had been circulated promptly to the regions as they had been learned. "We must be ready for further and possibly heavier air attacks by the enemy," continued Mr. Morrison. "Even if they do not come, we should be foolish not to take all precautions. Let us assume and get ready for the worst, and spend money in getting ready for it".

"Everything would not be perfect in the winter. They could not have heavy raids and expect things to be spick and span by noon the next day. A heavy air raid was a devastating act of brutal war and its consequences were bound to be serious and unpleasant. "All I promise", he said, "is that we are examining and preparing, so far as that is humanly practicable, for all the possibilities that we can foresee."

* * *

Training Fire Guards

ALL members of the new civilian Fire Guard should receive individual training, followed by team training and finally tactical training This is the main point of a memorandum issued from the Ministry of Home Security to the civil defence regions.

Many fire guards will already have learned a great deal individually about dealing with incendiary bombs and fire-fighting generally, but the Ministry's training memorandum lays great emphasis on the training of stirrup pump parties and on the combined work of numbers of parties in properly covering a a given area. Volunteers will, of course, be expected to display the same standard of training as fire guards compulsarily enrolled and training officers must satisfy themselves that the existing volunteer parties are efficient, and that the districts in which they operate are properly protected.

Particular importance is attached to every fire guard receiving practical training in smoke, "for", the memorandum points out, "if members of teams are to have full confidence when tackling a fire, this part of their training is essential."

Besides individual training, the Ministry directs that arrangements should be made for fire guards to receive instruction in such matters as the general organization of the wardens' service, to which the Fire Guard is to be closely linked, and particularly about the duties of wardens which directly affect the work of fire guards themselves, such as reporting incidents.

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Under Raid Conditions

AS soon as fire guards have received their individual and team training, tactical exercises are to be organized and held at regular intervals on an increasing scale, with all the teams of a locality in action together. Not only are tactical exercises "good fun" for those taking part, but they help to accustom parties to working under raid conditions; to make them familiar with the area in which they have to operate; to train them to handle typical situations which may arise during a raid; and to practise co-operation with the wardens and the police.

It is pointed out that most members of the Fire Guard will be available for training only after working hours, so every advantage should be taken of Saturdays and Sundays. It is of the utmost importance that all members of the Fire Guard should be fully trained before the period of long nights returns and renders training, except at week-ends, difficult and inconvenient.

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Body's Resistance To Blast

THE effect on the human body of blast from bombs is being studied by Professor S. Zuckerman, of the Department of Human Anatomy at Oxford University.

Air raid incidents are studied intensively; every person involved is traced, if necessary through hospital and after discharge. The general conclusions about blast are—up to a point—comforting. The surveys have effectively laid the bogey of blast as a source of injuries or death at any considerable distance. In Professor Zuckerman's words, "the human frame has much more resistance"—to blast, that is—"than bricks and mortar."

It has been found that one must be almost "sitting on the bomb" to be severely injured by blast. Blast was supposed to force its way into the body through the nose and mouth or to suck the air out of the nose and mouth. Experience has shown that this is not true. It hits the whole body for a few thousandths of a second, causing bruising similar to that caused by a heavy fall from a horse.

The chief thing to be guarded against, therefore, is the direct impact of the wave of air-pressure from the bursting bomb on the outside of the body. A sufficiently strong wall affords protection against such a wave.

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Wearing War Respirators in the Presence of Ammonia

THERE is reason to believe that the fact that Service, Civilian Duty and Civilian Respirators are not designed to give protection against ammonia is not always fully appreciated, and as the use of these respirators in concentrations of ammonia may give rise to serious danger, the following additional information on the subject is given :—

It has been established that these respirators give a certain degree of protection against immediate danger from ammonia; that when they are worn subsequently the ammonia is liberated from the container in concentrations which might give rise to serious discomfort or even danger. This effect is produced even when gas free air is drawn through the container, but if it should occur in the presence of a war gas, the wearer is completely deprived of protection. He will be unable to wear the respirator because of the ammonia given off as he breathes through the container, and so will be exposed to the full effects of the war gas.

War respirators should not, therefore, be relied on for protection against ammonia but if in emergency they have to be worn while escaping from an area seriously affected by ammonia, fresh containers should be substituted as soon as possible for the old ones.

* * *

Artificial Respiration

IN wartime, the probability of people becoming asphyxiated is greatly increased, due to many possibilities, such as gas leaks into

cellars and shelters, contact with broken electric wires, dense smoke from burning buildings, burial under sandbags, pressure on the chest by debris from demolished buildings, drowning in flooded cellars, blast from bombs. etc. On all sides countless opportunites, some foretold and some unexpected, for use of artificial respiration will arise only too frequently in these disturbed times. If it can be applied with precision and knowledge, a very important section of communal service will be catered for.

Being alive to these possibilities, numbers of First Aid workers take the examination of the Safety First Association for proficiency in Artificial Respiration.

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Deep Shelters

WHILE satisfying the quite natural desire of the public for company and apparent security in the face of danger, deep shelters are not as safe as many imagine. The main objections, summarised by a competent observer, are as follows:—

1. The appalling danger of a direct hit from a large H. E. bomb on a large shelter holding several thousand persons. Such an 'incident' causes more casualties and more work for the various services than the whole night blitzes have so far created.

2. The possibility of entrances being blocked by falling dobris. Experience has already proved that, with concentrated bombing over quite small areas, the provision of several alternative exits is no certain guarantee against persons being trapped.

3. Flooding of shelters in districts where water mains have been broken, or where the banks of lakes, canals or reservoirs or underground streams have been damaged by high explosive.

4. Gas from damaged mains or sewers entering the shelters.

5. The possibility of epidemics of serious diseases, already stressed by such authorities as Lord Horder and other prominent medical writers.

6. Panic in a crowded place. Fortunately, the morale of the public in this country has so far shown no sign of cracking; but the question goes far beyond the expression of more physical courage under trying conditions. It is common knowledge that the intensity of modern warfare can shatter the nerves of highly-trained troops, and that only superb training and discipline can prevent a general panic under tha strain of a heavy bombardment. If this is the case with men of proven courage and endurance, hardened to the peak of physical fitness by training and actual warfare, it is obvious that the danger of panic is indefinitely greater in assemblies where a large number of men and women of all ages and different states of health are congregated together.

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Chemical Extinguishers

A CORRESPONDENT draws our attention to the fact that the author of the article "Chemical Extinguishers for Incendiary Bombs" which appeared in the January 1942 issue, has evaded one big issue with regard to chemical extinguishers in that, whatever their type, they have certain inherent defects for incendiary bomb fire fighting, which the stirrup pump has not. *i.e.*

difficulty of handling,

expense,

and limited capacity.

He concludes that all things considered, the the stirrup pump is on the whole better than the chemical fire extinguishers for incendiary bomb control.

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Shelter Protection

"DANGER is good for the morale in bombing raids," declared the Minister for Home Security, Mr. Herbert Morrison. "Every thing may have crashed about the people, but their spirits remain high for many hours. But they must be looked after and provided for within that time."

Emphasising that each country must decide its own methods, Mr. Morrison gave the following points of experiences:—"The Anderson Shelter has proved very good and the Morrison Table Shelter protects occupants from everything but direct hits. Steel-framed reinforced buildings are the safest buildings. While New York's idea that the first two floors and top floors should be avoided seems pretty sensible, experience has been that it does not matter much whether you are in the basement of these buildings or on the second or third floor if the building is a high one. New York should not have to worry. Reinforced concrete will prove a very good friend to America.

"Surface shelters have stood up very well and the basements of substantial buildings have done good work. Earth trenches are reasonably good but remember as much damage has been done by earth tremors as by direct hits. Deep shelters have become less attractive. We have had the tube fractured at 66 feet depth. New York's sub-ways might be very dangerous spots. A blast goes a long way in the tubes. The best glass protection is muslin firmly pasted, backed by wire netting. Communal kitchens are a cure for broken gas mains. A great thing is to look ahead and be ready."—*Reuter.—Safety News.*