

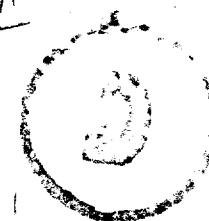
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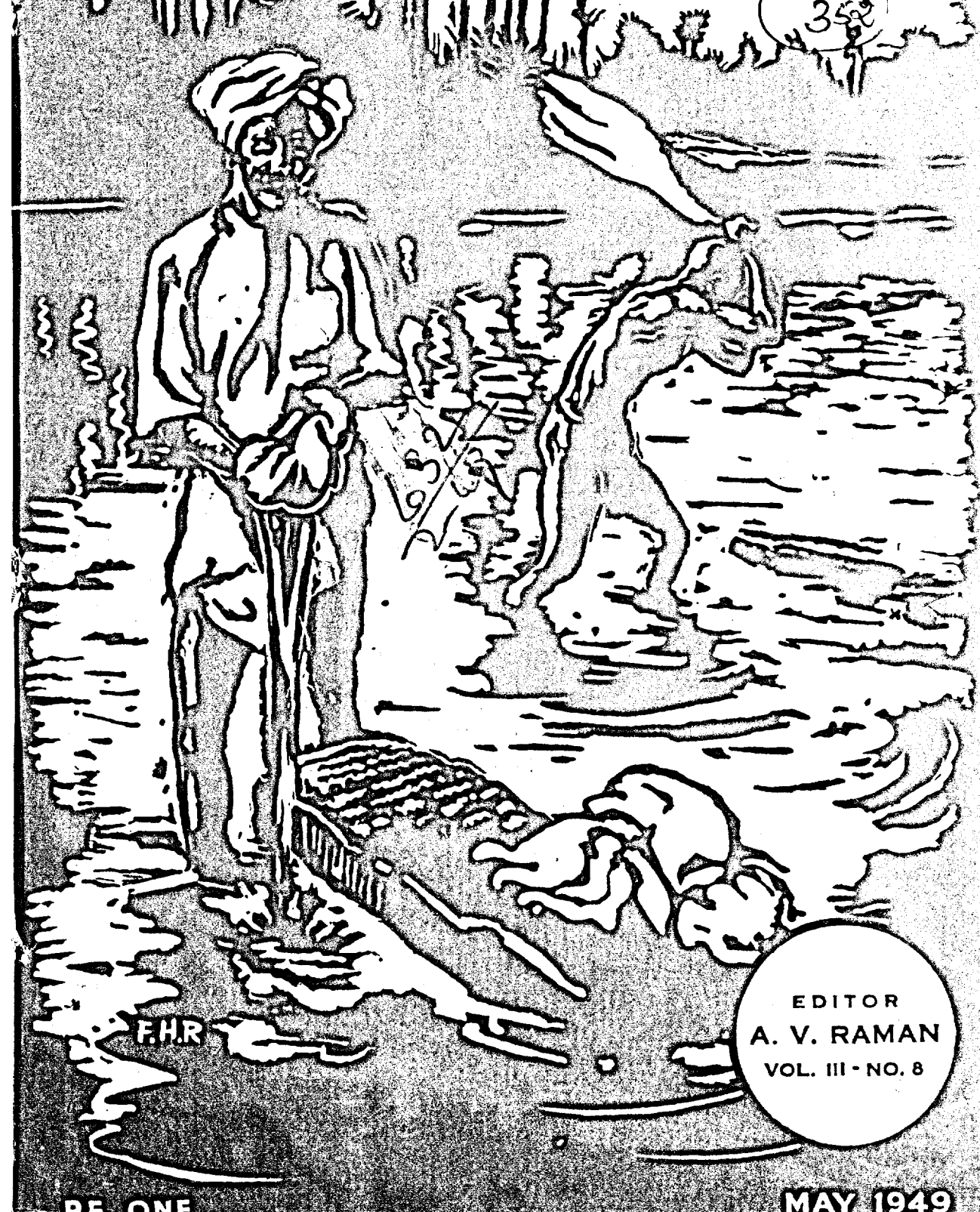
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PEOPLE'S HEALTH

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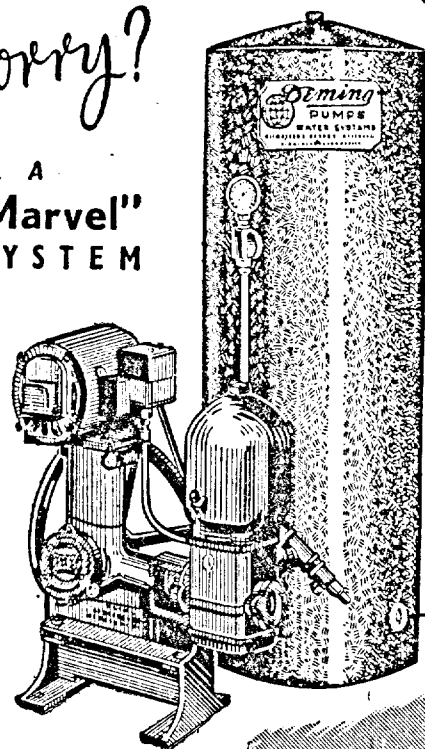
EDITOR
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VOL. III - NO. 8

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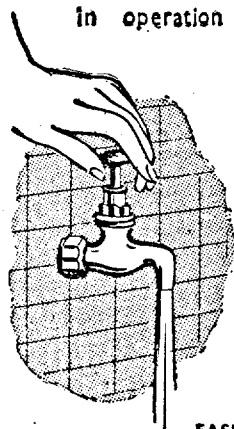
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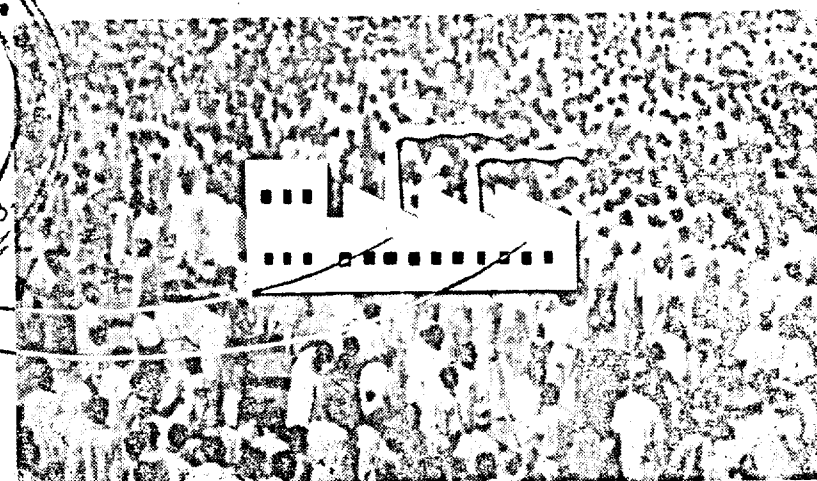
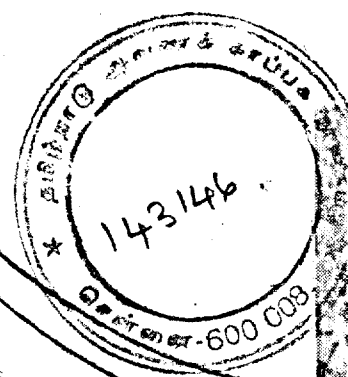
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TO OUR READERS.

Our readers are, doubtless, aware of the fact that *People's Health* is being published at considerable sacrifice of time and labour and above all money. It is primarily a propaganda magazine to educate the lay public and the experts alike on all matters pertaining to the health of the people. As C. R. put it in his message to *People's Health* it is an endeavour on the part of a crusader-spirited ex-permanent servant to help democracy in one of its important functions. *People's Health* is **not a commercial venture.**

The publishers appeal for assistance and cooperation of one and all. We invite suggestions from our readers to make the magazine more useful.

The annual subscription is only Rs. 12, commencing from October 1948 to September 1949.

ROYAPETTA,
Madras, 14.

MANAGER,
People's Health.

PEOPLE'S HEALTH

A Pioneer in the Field of Public Health

Vol. III

MAY, 1949

No. 8

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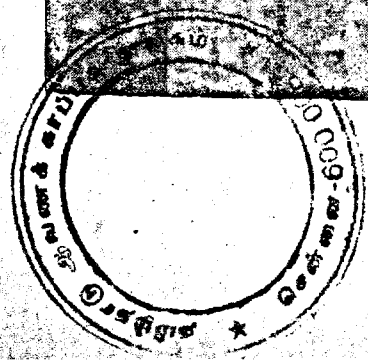
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Still, "Ministries of Health" Exist in Independent India!

Drinking water from the Ditches!



VOL. III No. 8

MAY, 1949

ISSUED MONTHLY

EDITORIAL . . .

"There is a great deal of advising and very little faithful performance. And, talk that does not end in any kind of action is better suppressed altogether."

—THOMAS CARLYLE.

ALNASHCHARS IN AUTHORITY

So early as 1866, Thomas Carlyle laid down this dictum in his valedictory address delivered to the students of the Edinburgh University. It holds good even to-day. The people talk much. Our ministers talk more, but little action ensues. This, to say the least, is sad.

WHY TALK?

The other day, the Madras Minister of Health, emphasising the importance of an organised venereal disease campaign, wanted the opening of clinics in district headquarter hospitals; extension of diagnostic and treatment facilities, sex education, upgrading of the venereal department and other measures.

We draw attention to Dr. R. V. Rajam's contribution to 'People's

Health' on the subject which appeared in pages 443—451 of No. 9 of Volume II—wherein he has laid considerable stress on the importance of the subject and chalked out definite and specific lines of action. The Bhore Committee also, in their report, have similarly outlined the measures that should be adopted by every Provincial Government in the organization of anti-venereal diseases work. The same points were again stressed at the public meeting by Dr. Rajam. These obviously should not have been new proposals or new ideas which the Minister came across for the first time.

Publication of articles of the nature of Dr. R. V. Rajam's contribution is not only calculated to educate public opinion but also to enlighten those in authority. The public having been

educated find themselves helpless for the simple reason that the State does not help them to practise what they have learnt. The State, on the other hand, if at all it gets the benefit of perusing such articles, should have taken *effective* and *immediate* steps to implement the practical suggestions put forward by eminent authorities. To talk at a public meeting, as though enlightenment had suddenly dawned on him, is cheating none else than the speaker himself. Why should a Minister talk at a public meeting that this should be done, and that should be done? Why not straight-away carry out what ought to be done? A record of achievements is more heartening to the people than a list of things to be achieved in an indefinite future.

DO IT AND BE DONE WITH IT

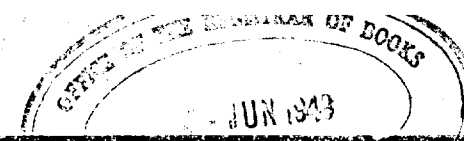
So far as our Madras Minister of Health is concerned, he is a man of excellent intentions; but intentions, though commendable, are not all. We are reminded of a story said of His late Majesty King Edward VII. The Professor who took him round an institution of preventive medicine harangued at length on how most of those diseases were preventible. His Majesty quietly turned round and asked the bemused doctor why not prevent them and be done with it, if they are preventible! So also, we turn round and ask the Minister of Health why not do it and be done with it instead

of saying it should be done, whatever 'it' may be.

V. D. AND PUBLIC HEALTH DIVORCED!

Again, we have pointed out that unlike the procedure in vogue in civilized administrations, the Public Health Department has not interested itself in educating the public on so vital a subject as venereal disease. We have drawn attention to the fact that the Annual Report of the Director of Public Health dismisses the subject with barely two unintelligible sentences! Why is it, we respectfully ask, that the little energy of the department is being dissipated on subjects beyond its competence?

The public would like to know why the Minister of Public Health, who has administered the department for two long years, has not yet opened venereal department clinics in headquarter hospitals? They are anxious to understand from the Minister why, for two years, he has found it impossible to order the maternity and child welfare organizations to take up the routine examination and treatment as suggested by the experts. Why is it that the Minister of Health has not done the obvious by entrusting the anti-venereal diseases campaign to the Public Health Department which boasts of the reputation of being the best organized in the whole country? The public would like to know what action the Minister has so far taken in sex education,



control of prostitution and other measures commended by the experts.

TALENT TO UTILISE TALENT

It has become the fashion of the day for ministers of state to explain away the inaction in this department or that, by saying that there had been lack of technical personnel and that there had been lack of materials and so on. We find, however, that the State does not utilise the services of the *available* personnel to the best advantage of the people. To utilise the available talent is, in itself, a talent, which is unfortunately lacking in those who have taken upon themselves the responsibility of steering the ship of state. Take for instance, Dr. R. V. Rajam, an acknowledged world authority in venereal diseases. He was recently superannuated; but the Government have been wise enough to retain his services. The proper thing to do would have been to entrust him with the anti-venereal disease campaign for the entire Province, giving him free scope and facilities, setting a time-limit and allowing him to implement the programme within the time allotted. That is the only way by which the Province as a whole can benefit by his special knowledge. Instead of doing this, the time and talent of the officer is wasted in the narrow field of managing the administrative side of a medical college, which requires no erudition in venereal diseases!

TALK LESS AND DO MORE

All we can do is to spotlight these subjects. It is for the ministers in power to take action. "Less talk and more work" should be the motto. We would also suggest that the Ministers' valuable time is not frittered away in addressing numerous associations, meetings, *symposia* and the like. The executives of such institutions should realise that the ministers of state are not there to afford amusement to the public but to serve them. The popular ministers, in their turn, should understand that they can be in the public eye more by achieving something than by erecting verbal castles in the air.

THE OLD GAME

Even our so-called popular ministry believes in playing the old game of the foreign administrators. We are constrained to point out that the Government in passing orders on the recommendations of the water supply and drainage committee in dribblets—nay, in homeopathic doses—have lost sight of the entire picture! This was exactly the game played by a foreign bureaucracy in sabotaging the recommendations of the rural water-supply committee, by splitting up the fabric of the report into shreds! Although popular ministers belonging to the Congress party, are in office, yet the man-in-the-street is unable to resist the feeling that he has been, as usual, left in the lurch. His living

conditions have not been improved even by an iota. A close study of the orders of Government, so far passed on the subject, betrays clearly the lower division *gumasta's* mentality—(we mean no disrespect to that class of hard-working permanent servants). The recommendations of committees of the kind ought not to start with the noting from the lowest clerk, filtering upwards stage by stage. Consideration of the recommendations should be at the highest levels, without being spoon-fed by voluminous noting, which only helps to cloud the clear issues. Such routine noting compels our ministers to move in blinkers in the narrow labyrinths created for them. Our ministry seem to be otherwise busy than giving their careful and anxious consideration to subjects of vital importance. At this rate, we feel that appointment of committees is deliberately calculated to be but an eye-wash to the public. There is no meaning in the ministers, appealing to the people to co-operate with them when they do not mean business. Self-respecting citizens, who are as keen to serve the country as the Ministers themselves, will no longer come forward to waste their time and labour in serving in committees of this kind.

AN APPEAL

We would appeal to our new Premier to take up the matter in his own hands

and impress on his colleague, the Minister of Health, that the *first* and *foremost* duty which he should discharge is, to provide safe and abundant drinking water to the masses and to improve their living conditions generally, instead of frittering away his energy, in doing propaganda for BCG vaccination and such similar futile activities. If the new Premier takes action in this direction, the masses would feel that something is being done to ameliorate their present deplorable conditions of living.

What applies to the Madras Presidency applies to the rest of the country. There should be a powerful agitation to provide *first* and *foremost*, safe and abundant drinking water to the people. Generally, their living conditions should be improved. Our Ministers of Health should not be left in peace till they take *effective* and *immediate* steps in this direction.

WASTEFUL!

In the name of the "Grow More Food Campaign," to the tune of about three crores of money has been already thrown away in the Madras Presidency. In the name of providing water supply to the rural areas, over a crore has been wasted. Last year, an amount of nearly thirty lakhs of rupees is said to have been spent on rural water supply. The funds of the 'Grow More Food Campaign' are administered by a

Special Officer Wells—an I. C. S. officer. On rural water supply, several agencies are at work, the Labour Department, the Firka Development Department, Harijan Uplift Department, Revenue Department and God knows how many more! Does it exhibit administrative ability to promote fruitful coordinated activities? We ask respectfully whether some intelligent co-ordination at the highest levels is impossible to serve the interests of both the "Grow More Food Campaign" and the rural water supply, while locating the sources of supply. The Rural Water Supply Committee attempted in 1939 to get precise information as to how many wells were sunk or dug, how many of them yielded water; how many yielded potable water and how many of them were actually put into use. Similarly, an attempt was made in vain in 1947 by the Water-Supply and Drainage Committee! It is dinned in our ears that we are poor. We have been made poorer by a province-wide prohibition programme. Should not therefore commonsense dictate that what little funds are available should be spent thoughtfully to serve public interest?

STOP THIS, PLEASE

We drew attention to the fact that in some cases, the A.I.R. talks are not given by properly equipped persons on technical subjects such as health,

engineering and medicine—(Vide *People's Health*, January 1949). We noted that generalizations were indulged in by speakers who were not by any means experts in their respective subjects. Recently from the Madras Centre of the A.I.R., a lady medical practitioner, while broadcasting in Tamil, advised her hearers that wells should be preferably exposed to the sun. This is a popular fallacy.

The speaker also advised her hearers that linens washed by the dhobi and brought home should be dipped in a solution of a particular disinfectant, dried and then only used. This suggestion is as impracticable and it is unnecessary.

Some months ago, a speaker from the Trichinopoly Station of A.I.R. said in a vernacular talk that the Provincial Government are taking steps to prevent tuberculosis by inoculating the *infected* with BCG. This is again absurd on the face of it.

Health education through the A.I.R. is full of potentialities but the script should be specially prepared by those who are specialists in their respective subjects. Dissemination of inaccurate and misleading information of the kind referred to above is fraught with danger. Instead of giving information of this kind, it is better that no information is given at all on these subjects through A.I.R.

In the selection of speakers on technical subjects, the A.I.R. authorities

would be well advised to approach well known and reputed experts in the field, instead of calling upon all and sundry to talk on these subjects. Be it also noted that script writing for the Radio is an art in itself. A homely chat stressing a few common important points will go across easily to the listener. Not all 'experts' are experts in script-writing too. In the choice of speakers, the authorities would do well to choose such 'double' experts only. The programme director cannot be a master of all subjects. If A.I.R. stations consult well chosen advisers on each subject before a script is accepted, inaccurate and impracticable ideas may be easily avoided.

If however, such talks are already being scrutinised by experts chosen by the A.I.R., there are only two reasons for the broadcast of wrong information. Either the A.I.R.'s choice of experts is not proper, or the so-called experts are taking their task easy. Would they go into the script in more detail?

WHY ENCOURAGE INDISCIPLINE?

Generally, there has been a progressive deterioration of discipline in the services. The popular ministers are making themselves far too cheap. The smallest minion of the permanent service, provided he has some political

pull somewhere, gets the opportunity of interviewing the ministers and representing (*misrepresenting?*) to them direct, behind the back of the head of the department or the departmental secretary. Popular ministers should no doubt make themselves available for representation by the public; but the rigid service discipline should be maintained, so far as the services are concerned.

We have come across instances where subordinate officers have interviewed ministers of state and represented to them matters which could not stand a scrutiny in the ordinary course. The ministers allow themselves to be biased or prejudiced one way or other by such representations! The officers who secure the privilege of interviewing the ministers in this manner, also go on bragging that the ministers told them this and the ministers told them that 'This' and 'that' on verification, however, are found untrue!

The Madras Finance Minister, while addressing the N.G.O's the other day, deplored the leakage of information from the Secretariat. He said such leaks should be plugged. We agree with him. But what about the ministers themselves, communicating information of a confidential nature *unintentionally* during such 'interviews' to subordinate officers and their 'favourite' non-officials?

OCCUPATIONAL DISEASES

by

Dr. M. N. Gupta,

M.B., B.S. (Pb.), D.P.H. (Lond.), D.I.H. (Eng.),
Deputy Chief Adviser, Factories (Medl.), Govt. of India.



This is the third of a series of articles contributed to *People's Health* by Dr. M. N. Gupta. The first two articles appeared in these pages—(Vide Vol. III—pp. 237—43 and 293—300). The author has placed the professionals and the public alike under a deep debt of gratitude by focussing attention on so important a subject as *industrial hygiene*. The author has lucidly dealt with the several aspects of the problem. We commend these articles to our readers.

—Ed., P. H.

It is necessary to approach the subject historically in order to show what has been achieved or what yet requires to be done.

From the earliest times it has been recognised that certain occupations constituted a more or less serious risk for those engaged in them.

Egyptian Period.—Very few details are known relative to the tragic conditions of workers in ancient Egypt. Stone and metal engravings, wall paintings, all bear witness to the gangs of forced labour dragging colossal statues of kings and overlords. The masterpieces of architecture which are today the admiration of the world give some idea of the cruel sacrifices demanded of

the free citizens of the Egyptian Empire. One cannot but pity the countless slaves, criminals and workers compelled to provide the forced labour to which they were subjected by brutal force in order to complete these titanic constructions.

Greek and Roman Period.—Aristotle speaks of the diseases of runners. Plato noted that the artisan's body is deformed by the exercise of his profession. Pliny refers to the dangers incurred in handling sulphur and zinc. Hippocrates (370 B.C.) recognised the toxic properties of lead. Galen refers to diseases peculiar to miners, and tanners. Nicander established a connection

between lead and pallor, stomach-ache and constipation.

Middle Ages.—In the middle ages there appeared certain orders emitted by health officials in regard to certain industries.

15th Century.—A certain amount of interest in occupational diseases commenced to make its appearance.

16th Century.—Paracelsus, a Swiss doctor and chemist, published the results of his observations made among Tyrolese miners.

17th Century.—Samuel Stockhausen published his work "Disorders caused by Smelter Fumes."

In England the first document dealing with the nature and results of occupations in dangerous processes are to be found in the "Transactions of the Royal Society of England."

18th Century.—It was not till 1700 that a comprehensive volume covering the whole field was published by an Italian physician, Bernardino Ramazzini, very aptly called as the Father of Industrial Medicine. His fame rests on his book called "Dissertations on the Diseases of Craftsmen." He was the first to realise the causative connection between occupation and disease, stating that the medical man even when aware of his patients' profession seldom attributes sufficient importance to it. His book deals with practically all trades and professions known in his day. His work has become the basis of the extensive literature which now exists on the subject of industrial hygiene.

In the course of the second half of the 17th Century there appeared several works relative to the occupational diseases and their treatment.

In 1775 Percival Pott was the first to study Chimney Sweep's cancer.

In 1792 there was instituted in Germany the Annals of State Medicine which also constituted a valuable contribution to the subject.

19th Century.—In the 19th Century with the rise of industrialism on the one hand and the concomitant development of biological and medical

sciences on the other, the knowledge of occupational diseases achieved rapid development. The dawn of the 19th Century witnessed the first attempts at improving these appalling conditions. There commenced in Great Britain and spread to the chief Continental countries a gradual movement towards legislative regulation of industry—limitation of number of hours worked, protection of women and children, and institution of factory inspectorates. In 1834, there was legalised in Great Britain, the appointment of regular "Certifying Surgeons" entrusted with the task of certifying the ages of children commencing factory work. In 1835, the demand for compulsory notification of certain industrial diseases was made. Thus, Great Britain was the first country to institute factory laws, and other countries soon followed the example of Great Britain. Concurrently with this grew up literature bearing on occupational diseases and writers began to specialise in the study of these diseases.

European progress in public health was greatly stimulated by a report entitled "The Sanitary Conditions of the Labouring Population" by Chadwick in 1833.

In 1821 was founded a French periodical "Les Annales D'Hygiene" in France which did more for the promotion of Industrial Hygiene in general than any other publication. A number of French writers provided valuable contributions relative to the effects of lead, copper, chrome, arsenic, phosphorous, on the subjects of skin diseases. Mortality and morbidity statistics amongst factory workers were published for the first time by French writers.

In German-speaking countries, much contribution was made by the Viennese School of Dermatology founded in 1840. Literature on Pathology and Prophylaxis, effects of toxic gases and dusts, fatigue, faulty posture and abnormal temperature was published. In 1870 Hirt published an extensive treatise on occupational diseases entitled "Die Krankheiten der Arbeiter." In 1884

Lehmann of Wurzburg carried out quantitative studies of upwards of 35 gases based on experimental evidence and observation in industry.

In Italy the movement developed in the same fashion.

In the United States, as elsewhere, the rise of machine production was accompanied by exploitation of child labour and enormous wastage of human effort and human life.

20th Century.—Germany and Great Britain stand first amongst the European countries as regards regulation of unhealthy trades. The statistical data provided by the German Accident and Sickness Assurance Associations have proved of great value in furthering research and investigations.

The first World War of 1914—1919 resulted in the formation in Great Britain of the Health of Munition Workers Committee which later on was converted into the Industrial Fatigue and later still into Industrial Health Research Board. Great credit is due to Sir Thomas Legge for having with the aid of Factory Inspectors and certifying surgeons, made important contributions to a great number of problems on industrial medicine. Leonard Hill investigated compressed air-illness in 1912. Collis and Greenwood in 1921 published, "The Health of the Industrial Worker, from the standpoint of Industrial Hygiene." In France, in 1925 was founded an Association called Society of Public, Industrial and Social Hygiene. Likewise the Paris Institute of Industrial Hygiene devoted its attention to study of problems of industrial pathology. In 1929 was started a periodical entitled "La Medecine du Travail."

In Germany special courses on occupational diseases were held in more than 10 German Universities.

The first Industrial Clinic was founded in Italy in 1910 by the town of Milan. It constitutes a highly important centre of Industrial Hygiene and Pathology.

Other European countries have made equally important contributions to the study of occupational diseases.

In America in 1884 a Bureau of Labour was set up in the Department of the Interior and in 1915 a division of Industrial Hygiene and sanitation was created with an office of Field Investigation into occupational diseases. In 1915 a Section of Industrial Hygiene was organised in the American Public Health Association.

Harvard Medical School was the first in the world to confer a degree in Industrial Hygiene (Session 1918—19) and publishes "The Journal of Industrial Hygiene."

The question of international protection for workers was raised for the first time in 1867. The first International Congress, however, was not held till 1890 in Berlin. The International Association for Labour Legislation was founded after 1900.

The Permanent International Committee for the study of Industrial Medicine was formed after the Milan Congress in 1906.

The I.L.O. Office by means of its Hygiene Service and its Advisory Committee on Industrial Hygiene brings out numerous publications on the subject.

Gradually the nations are coming to realise the truth underlying the words of Ramazzini, "It is but a poor profit which is achieved by the destruction of health."

Definition.—The Occupational Diseases exclusively affect certain classes of workers. They are created, so to speak, entirely by a given occupation or by the conditions under which such occupation is affected.

Industrial Diseases.—On the other hand are common to all workers and not related to certain occupations. They arise on account of the economic and social conditions in which the workers live and show a special tendency to break out amongst them.

Notification.—The diseases compulsorily notifiable vary in different countries. It is estimated

that there are about 2,000 diseases which can to some extent be attributed to a person's occupation and schedule III of the Workmen's Compensation Act, 1923, includes 12 such diseases.

Notification of cases of Industrial sickness is capable of considerable extension and is in fact being constantly extended to fresh groups of diseases. The value of such notification consists not so much in the collection of statistics illuminating as these are as in their enabling the central authority to investigate the conditions which are responsible for the production of the disease and to take the measures necessary for the prevention of sickness in the factory or the workshop implicated. In this respect notification of Industrial sickness is exactly comparable to notification of infectious diseases.

Countries where notification is compulsory are Argentina, Australia, Brazil, France, Germany, Great Britain, Italy, Netherland and Poland. The Factories Act, 1948, has made these diseases notifiable for the first time in our country.

Compensation.—At present public opinion is unanimous in its demand for a solution of the problem of compensating occupational diseases in a reasonable and conciliatory spirit.

List of Occupational Diseases.—Is laid down in the Factories Act, 1948.

Industrial Sickness Statistics.—It is important that we should have at our disposal a reliable method of comparing the "healthiness" of our occupation with that of another, and this problem is dealt with in detail in the standard occupation mortality tables for England and Wales published by the Registrar-General which may be considered as the most trustworthy source of occupational mortality.

There is an utmost urgency of standardising the methods of occupational sickness investigations. The Factories and the Trade Unions in our country should be induced to adopt statistical methods from the medical point of view. There is a wealth of material susceptible of critical

analysis, which should be made available to those who are directly concerned with occupational disease investigations.

The continuous record of the occurrence of ill-health for each employee affords a sound and thoroughly practical method. It is in line with the principles of scientific research. The sickness record of an employee is a dependable measure of his health.

Method of Industrial Sickness recording.—The above considerations lead us to think of a standard method of Industrial sickness reporting. This can be done as follows:—

By providing for an individual personnel card which is kept for every employee (APPENDIX A). Many firms in our country employ the physician to treat sickness when it arises, and also expend considerable sums of money on measures intended to benefit the health of their employees, but take no steps to control the results of the measures they adopt. Such control is afforded by the use of sickness statistics, the data being analysed according to age, sex, occupation and form of sickness.

Conclusion.—The statistics of occupational diseases have to be built up in this country. The fact that they are non-existent should act as a spur to extend such knowledge and make it as complete as possible. How can we proceed to achieve this end?

The provisions of section 89 of Factories Act, 1948, should be made known to persons concerned as widely as possible.

Hazardous Occupations.—Special risks are associated with particular trade processes as the term "Hazardous occupation", implies and special rules have to be framed to protect persons under these rules.

Classification.—Occupational hazards may be classified as follows:—

(a) abnormalities of air pressure.

(b) abnormalities of temperature and humidity.

(c) Dampness.

(d) Defective Illumination.

(e) Dusts—Pneumoconiosis.

(f) Infections — Anthrax, Glanders, Tetanus.

(g) Radiant Energy.

(h) Repeated motion, pressure, shock.

(i) Poisons.

Major Groups of Occupational Diseases.—Occupational diseases fall into 6 major groups when classified according to causative agent.

(1) Toxic metals—arsenic, zinc, lead, phosphorous, cadmium, manganese, radium, mercury.

(2) Dusts—Pneumoconiosis, Silicosis, Asbestosis, Anthracosis.

(3) Gases, vapour, fumes—Hydrogen Fluoride, Nitrous fumes, SO₂, CS₂, H₂S, HCN, CO, N₂CO, Halogenated hydrocarbons, Methyl-alcohol, benzene.

(4) Occupational skin hazards—chrome, oils, cutting compounds, ephtheliomatous ulceration due to pitch tar, bitumen.

(5) Infectious Agents—Anthrax, glanders.

(6) Physical Agents—compressed air illness, Radio-active substances, glass blowers cata-ract, impaired hearing caused by noise.

Industrial Poison are either (1) Gases or fumes, (2) Liquids and (3) Solids or dusts.

Three channels of entry to system.

(1) Lungs—gases, fumes, dust (the commonest).

(2) Digestive track by swallowing (rare) Arsenic.

(3) Absorption through skin (rare) Mercury.

Action two-fold:

(1) Local—skin, irritant and corrosive, strong acids and alkalies, bichromates, tar, etc.

(2) Absorption into blood or system—CO., lead, dusts, and silica, etc.

Remedies:

(1) Protect the body by protective clothing and under doctor's orders, use some skin barriers.

(2) Prevent contact generally by protection from breathing the dust, fumes and vapours.

Legge's four points—

(1) "Unless and until the employer has done everything and everything means a good deal—the workman can do next to nothing to protect himself, although he is naturally willing enough to do his share." Wherever possible exhaust ventilation through hoods must be applied at the point of origin of the dust or fume, or use general ventilation in dope rooms. In dusty trades like manufacture of white lead use the hose pipe freely to keep down the dust or substitute a wet method for the original dry screening, grinding, milling and mining processes. Use wet drilling method in coal cutting or use respirators.

(2) "If you can bring an influence to bear external to the workmen (i.e. one over which he can exercise no control) you will be successful; and if you cannot or do not, you will never be wholly successful." See that the protective apparatus is fool-proof and cannot be mishandled by the worker.

(3) "Practically all Industrial lead poisoning is due to the inhalation of dust and fumes; and if you stop their inhalation you will stop the poisoning."

(4) "All workmen should be told something of the danger of the material with which they come into contact and not be left to find it out for themselves—sometimes at the cost of their lives."

In this connection—

(i) Insist on teaching the workman to take an interest in himself.

(ii) Teach the importance of clean habits.

(iii) Make him understand the principles of dust suppression.

(iv) Use cautionary placards and illustrated notices in workrooms.

(v) Give a warning notice and Individual Card to workers in Anthrax for prompt treatment.

(vi) Train men in safe methods of artificial respiration.

Explanation of these.—(1) Worker cannot give his time and attention; he has his work to do.

(2) (a) Get rid of the dangerous substance from the process by the substitution of a safe substance.

Classic Example.—Prohibition of yellow phosphorus in the making of matches by substitution of Sesqui-sulphide of Phosphorus. Accepted by Berne International Convention 1906 and abolished "Phossy Jaw."

Safe substitutes for Benzene in rubber.

Removal of Tetra-chlorethane ($C_2H_2Cl_4$) from the dope of aeroplane wings.

(b) kill the danger by disinfection; anthrax infected wool.

(c) make the dangerous ingredients safe.

Pulp white lead ground with oil without intermediate dry grinding.

Use low solubility glazes in pottery.

Rubber—lead incorporated in a "mother batch."

(3) Exhaust draught—removal of fumes and dust at the point of origin by the "Fume Cup-board" method.

(4) Methods not completely effective because not extended to the workmen. Respirators, gloves, goggles, washing conveniences.

(For Appendix A, see next page)

FACTS ABOUT FATIGUE

(*Industrial Health Bul.*, Ottawa, Can. August, 1947.)

The article declares that fatigue is an important problem for industry which merits serious attention from management. The health, both physical and mental, of an employee is often the basic cause for fatigue, and therefore it should be the purpose of management to help the worker maintain good health at all times. This can be accomplished by preplacement and periodic medical examinations, health education, and general supervision of workers' health. There are many environmental factors which also contribute to fatigue, among which are temperature, illumination and noise. All of these factors are controllable, and an effort should be made to correct them. Other factors contributing to fatigue are the hours of work, method of work, boredom, and morale of the workers. It is important, too, to consider not only one physical aspect of a man but to remember that each worker has his own personal problems which by causing mental strain also enter into the fatigue picture. Along with this, to successfully combat fatigue, it is necessary to take into account not only the hours spent by the worker on the job but also those off the job.

(P. H. Engg. Abts.)

APPENDIX—A.

MODEL FORM FOR PERSONNEL AND SICKNESS CARD.

Name of Employee.	Date this record begins.	Date employment ended.	Sex.	Year of birth.	Marital condition.

DEPARTMENTS AND OCCUPATIONS IN PLANTS.

From	To	Months.	Department.	Occupation.	Possible injurious conditions.

FORMER OCCUPATIONS OUTSIDE OF PLANT.

From	To	Months.	Occupation.	Industry.	Possible injurious conditions.

REMARKS

RECORD OF ABSENCE FROM SICKNESS AND NON-INDUSTRIAL INJURIES.

(Reverse)

DATES OF ABSENCE.		Days lost through illness.	Sickness or non-industrial injury causing disability (Diagnosis).	By whom Diagnosed.
Beginning.	End.			

REMARKS.

THE X-RAYS: INTERESTING FACTS ABOUT—

by

Rao Sahib

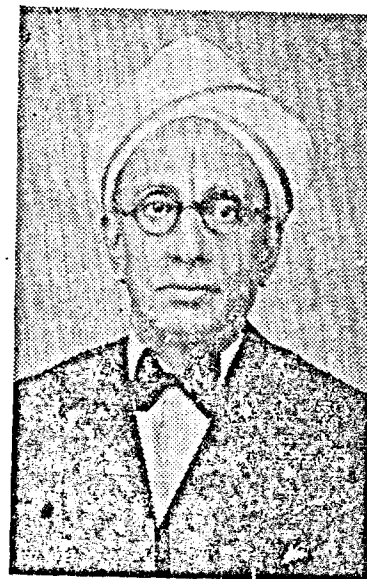
Sri T. N. S. Raghavachari

Public Health Bacteriologist, King Institute, (Retired.)

The year 1895 saw the coming into being of two of the most important and valuable discoveries in the field of electrical research—wireless telegraphy and the X-ray.



The Bettmann Archive
PHYSICIST ROENTGEN
Help from the hand.



In June 1895, Marconi an amateur electricity enthusiast, aged 21, working in a small village near Bologna, succeeded in transmitting messages with out wires, over a distance of about 2,000 yards. One does not need to be reminded, today of the tremendous expansion that radio communication has undergone during the 53 years that have intervened. What was never dreamt of as feasible a century ago, and what appeared strange and astounding fifty years ago, have now become quite commonplace in the radio field.

USES OF X-RAY

People have not, however, become quite as familiar with the uses to which X-rays have been put and many of them still find them strange and astonishing. In reality, there is nothing more mysterious or unusually strange about X-rays than there is about radio waves. As the application of the X-rays have largely and strictly been limited to the hospitals, and clinics, the practical benefits derived from the use of the X-rays are less widely known and still less appreciated. The latest developments in this field—and they have been many and varied—have not been brought continually to the attention of the general public.

The X-Rays: Interesting facts about—

ROENTGEN FINDS THE RAY

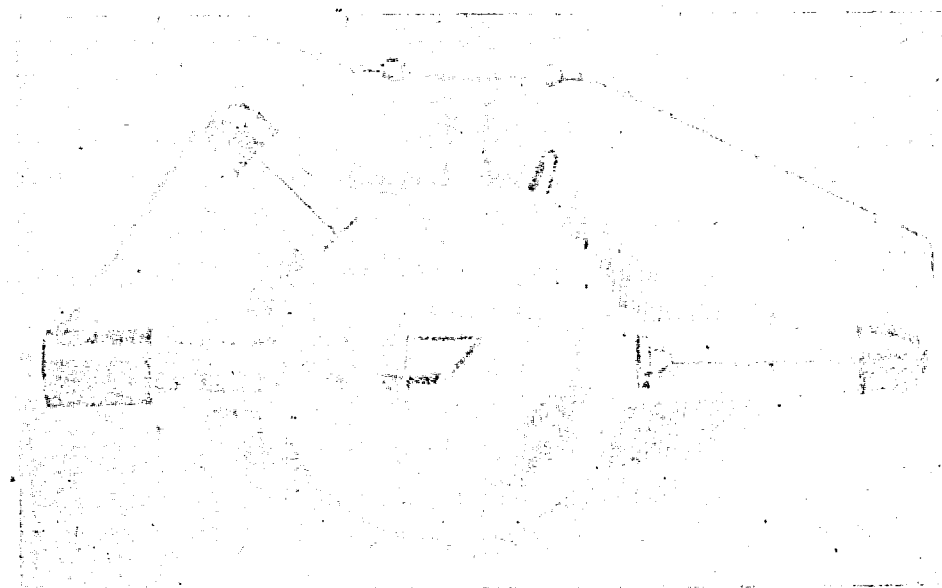
Wilhelm Konrad Roentgen, a physicist, working in the department of physics of the Würzburg University in Germany, was the discoverer of this wonderful ray. The events leading to this great discovery were beautifully reconstructed from the available but meagre facts, by an American doctor about twenty years ago. He said:

"The equipment for the exploration that took place on November 8, 1895, in a darkened room of the Würzburg University buildings, is a large but crude induction coil supplied by a battery of wet cells and capable of making noisy sparks between the two rods at its terminals. Wires from the coil extend to a pear-shaped glass bulb from which the air has been removed. In a vacuum, a stream of electricity passes between the terminals to which the coil is attached. A yellowish-green light is generated in the bulb, streaking the glass with flickering bands of colour. This type of bulb, commonly called a "Crookes Tube" had already been used by many investigators who studied the light emanating from it. If a piece of paper coated with certain metallic salts, e.g., Barium platino-cyanide, is held before the lights, the coating on the paper glows with a curious glimmering fluorescence. In this room, is a man of fifty—the physicist Roentgen. He watches the tube for a

while; then starts his explorations. Momentarily he interrupts the electrical discharge, while he folds a sheet of black cardboard about the tube to prevent the escape of light. When the bulb is fully covered, he restarts the flow of current. He looks toward the place where the tube is situated but no light leaks out. There is nothing visible to his eye in that direction; at the same time, however, he is conscious of a glow of light somewhere in the room. He turns to the table where he has placed the barium-platino-cyanide-coated paper. It glows; its surface shines with a mysterious ghostly light. It shines as brightly as it did, before he covered the vacuum-tube with cardboard.

"He takes the glowing paper in his hand and turns its coated surface away from the tube—it continues to glow! An invisible ray is passing through the cardboard and through the paper, lighting up the metallic salts. The now-excited-explorer has found the unknown he sought for. He quickly holds a piece of heavy metal between the tube and the paper; the metal casts a dark shadow, while a book held there, casts a barely appreciable one. The explorer next holds his hand before the paper; again a shadow appears—such as no one had seen before—the shadow thrown by the bones of the hand."

The discovery had been made. Days and nights of feverish anxiety followed and long hours of close experimentation which opened up another discovery: viz., these rays though



The Wonderful Tube in which the X-rays are made

invisible to the eye, affected photographic films and plates and could be recorded. Crookes and others, who had previously experimented with the vacuum tubes, had often found the photographic plates kept in their laboratories, fogged and unfit for use. Instead of attempting to find out what spoiled these plates, they returned them to the manufacturer as defective. If they had suspected that the use of the vacuum tubes caused the fogging of the plates, they probably would have discovered the X-rays before Prof. Roentgen did. Roentgen had the breadth of vision which the others lacked.

During the Christmas vacation of the College in 1895, Roentgen wrote a paper, being a preliminary communication entitled "On a new kind of Ray." Before he had an opportunity to make a formal report to the local scientific society of his discovery, the news had leaked out. On the 6th January 1896, it was flashed through wires to every part of the globe.

This startling discovery caught the popular fancy very rapidly. And very soon exaggerated tales were told about the X-rays. They were, so some newspapers said, designed to make feminine modesty a thing of the past, unless X-ray-proof clothing were made available; or again, college education was to be reduced to the simplest terms by penetrating even the thickest of skulls with the X-ray and projecting diagrams, charts, and pictures directly into the brains of students.!!

The badly garbled accounts published by irresponsible newspapers led to still greater misunderstanding of the true nature of the X-rays. Readers gathered the idea that these rays would be used anywhere and at any time. Certain timorous ladies were greatly shocked at the thought of the possibilities thus created; an English milliner promptly advertised the sale of *X-ray proof* underclothing. A Bill was introduced in the State Legislatures of certain states in U.S.A. prohibiting the use of X-rays in opera-glasses at

theatres!! Whether this proposal had its origin in the modesty of the actresses or was designed to preserve the morals of the spectators, one cannot now very well guess.

PRACTICAL USE OF X-RAY

Even while the waves of spectacular interest and ardent admiration for the latest scientific curiosity were still rising, a group of practically minded men sought ways and means to put this new ray to practical use in the field of medicine. Here, was a method to make visible things formerly hidden in the body and thereby render diagnosis of disease more accurate and less of empirical guess-work.

Coils and tubes, quickly assembled, soon began to cast their flickering lights in nearly every city and hospital. But in the early days, the technical aspects of radiology were somewhat crude. The feeble rays generated by makeshift apparatus necessitated prolonged exposures. A statement in a medical journal published in April 1897 refers to the need for exposures being often as long as one hour and the liability of the gelatin on the photographic film to melt away under the body heat due to such long contact.

These technical difficulties have all been overcome; efficient tubes and powerful transformers to supply them with electricity at very high voltages have been built. Screens have been invented to intensify on the film the action of the rays and new types of films have been devised, which give clear and detailed reproductions with very short exposures. These help in accurate interpretation. With modern equipment, radiography of any part of the body, including the skull, is accomplished in a fraction of a second with considerable precision and certainty of result.

The speciality of this science goes far beyond the mere technique of making X-ray exposures. *The interpretation of the records requires consummate skill, wide experience, and a detailed*

knowledge of the structure of the body, perhaps to a greater extent than that needed in any other branch of medicine.

During the early years, the X-ray was largely used to detect broken bones, bullets, or foreign bodies in the flesh. Since then the part that X-rays play in medical practice has developed enormously. (It is now used not only for diagnosis but also for treatment of disease.) Methods have been developed whereby the modern physician can examine and inspect every part of the body—the lungs, the heart, the gall bladder, the stomach, the intestines, the urinary tract, the sinuses, the brain and even the unborn child in the mother's womb. As a result of the X-ray examination, he can detect disease and abnormalities before they give rise to outward symptoms. Apparently healthy people are also examined to detect disease in the early stages. Having an X-ray examination, so far as the patient is concerned, is simple, harmless and without pain or sensation. Formerly, the doctor was called only after disease had made its presence known and felt by pain and disability and the attention of the physician was necessarily directed towards treating well advanced cases. In short, the patient called the doctor only when he was driven to do so, by suffering, when he wanted relief. This attitude towards the doctor still persists with most people, but the consciousness is just dawning in their minds that, it is far simpler to prevent suffering or serious disease than it is to cure it, and that it is far easier to prolong life by

preventing disease than attempting to save life by treating disease.

The average person who has not followed closely the trend of modern medicine is likely to raise the question: "Why should people in apparent good health be examined by the doctor and why should X-rays be used on them?" The answer to this is simple enough: Modern medical studies and experience have shown that in reality such symptoms become evident only when any disease is far advanced, and that the aim of the doctor should therefore be to detect disease before definite ill-health has set in, and while it is still in those stages in which it can be speedily and readily diagnosed and controlled. This modern personal preventive medicine, relies on the X-rays to a large extent, in detecting incipient disease.

AN ANNUAL HEALTH AUDIT

Every person even while he is in normal health, should choose a competent qualified doctor and ask him to give himself and the other members of his family a thorough physical examination once every year. A record should be maintained by every family of this annual health audit. This audit should and would naturally include, besides a thorough physical examination of the entire system, X-ray pictures of the lungs and teeth.

Medical science has thus secured in these wonderful rays, a most valuable helpmate, that not only detects the dangerous intruder in time, but also often furnishes the means of punishing and driving him out of his hiding place.

A man went to his doctor and requested treatment for his ankle.

After a careful examination, the doctor inquired: "How long have you been going about like this?"

"Two weeks."

"Why, man, your ankle is broken! How you managed to get around is a marvel. Why didn't you come to me at first?"

"Well, doctor, every time I say something is wrong with me, my wife declares I'll have to stop smoking."

FOOD SANITATION—MAKING EATING-HOUSES SAFE

by

THE PROPAGANDA SECTION, HEALTH DEPARTMENT, BOMBAY CORPORATION

Due to certain socio-economic factors, the practice of eating away from home is growing among the city-dwellers. Thousands frequent restaurants and eating-houses as their crowded conditions at tiffin or meal time testify. This calls aloud for the perfect sanitation of the public eating-houses in the city.

It is, therefore, more important than ever before that such establishments be conducted in a sanitary manner in the interest of public health. Restaurants and eating establishments must be safe, otherwise they literally become the releasing houses of deaths ammunition—the disease germs such as bacteria and microbes. Many dangerous diseases as for example, tuberculosis, cholera, typhoid, dysentery and diarrhoea—not to talk of the alarming increase of cases of food poisoning—spread through infected food. The contamination is caused by a single food handler and is often responsible for the illness of many people.

It is indeed sad that the city can boast of having only a limited number of good hotels. The condition of very many hotels is not only far from satisfactory, but it is at times shocking. The proprietors have both the eyes fixed on the profit side instead of having one eye on the profit and the other eye on the safety and health of the numerous clients. The dirty habits still go unchecked and the most elementary principles of sanitation are not observed. Food is exposed to man's most dreaded enemies and disease carriers like flies, cockroaches, rats and other vermins, and also to dirt and dust. Dirty

dishes are dipped in a bucket of dirty water or put underneath a running tap. No attention is paid to the preparation of clean food and decent serving of it. The root cause of this



RIGHT—Scalding of used utensils in hot water.



WRONG—Used utensils dipped in a bucket of dirty water.

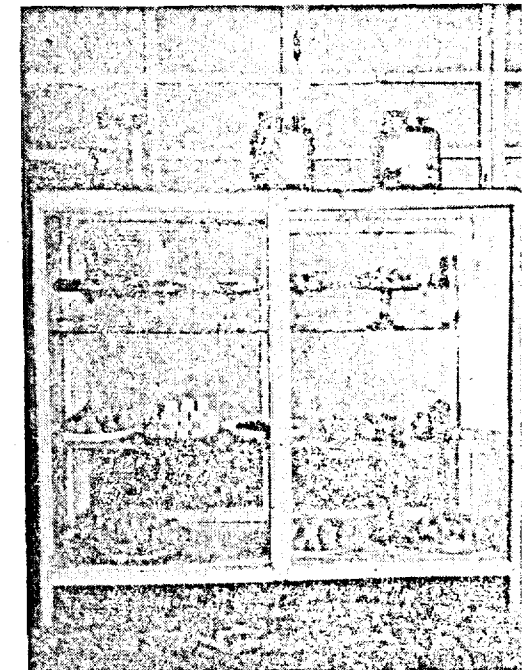
evil that has persisted is the lack of health knowledge on the part of both the proprietors and the employees. They hardly realise that actually it is the dirt or the invisible germ that is most dangerous.



WRONG—No proper facility for disposal of refuse.



RIGHT—Keeping a dust-bin with cover.



RIGHT—Food kept covered in glass cases.



WRONG—Food kept exposed.

Persistent efforts have therefore got to be made to make the eating-houses safe. This could be done by enforcement of sanitary rules, persuasion, health propaganda and finally by strict legislation.

The five cardinal points for food sanitation are :—

(1) Sterilization of eating utensils at 180° F. to kill germs. Disease is conveyed from person to person *via* utensils, use of the same dishes,



The employee must wash his hands, before attending duty, after W. C.

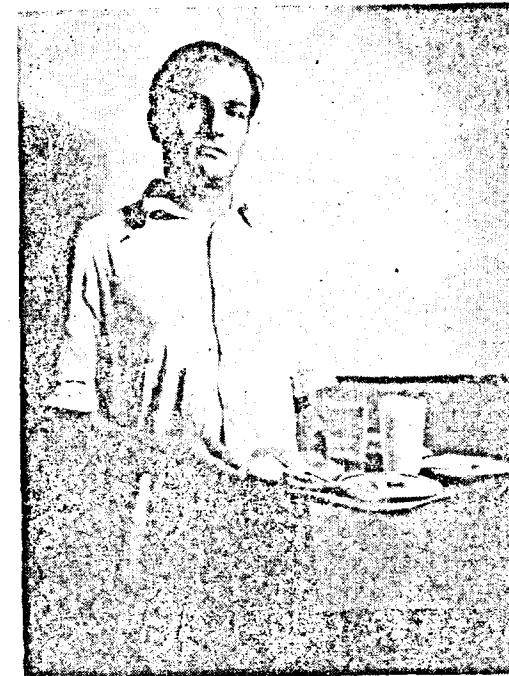


The employee must wash his hands, before attending duty, after W. C.

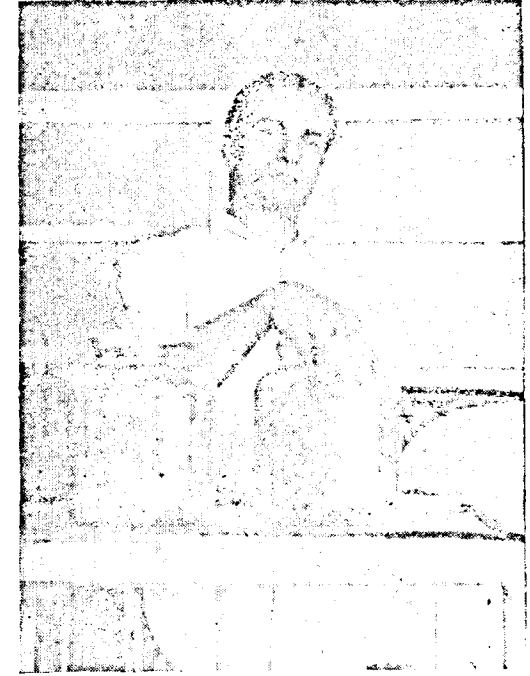
glasses, forks, spoons, in the course of the day by many persons.

(2) Keeping refuse tins tightly covered to prevent flies and other disease carrying insects from feasting and subsequently contaminating the food.

(3) Keeping food articles covered preferably under glass cases and thereby protected from flies and sneezes and coughs of the food handlers.



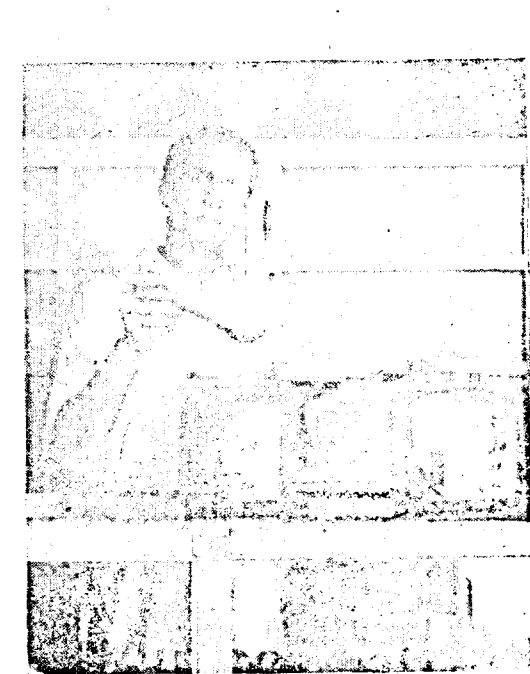
WRONG—No uniform, no clean naphin, no head dress.



WRONG—Taking out food with hand.



RIGHT—Suitable uniform, clean naphin and head dress.



RIGHT—Taking out food with spoon.

(4) Demanding health examination certificates before the engagement of an employee. Usually food handlers are often carriers of typhoid fever. This would rule out tuberculosis, V.D. and skin diseases also.

(5) Insistence of the proprietors from the employees upon certain standards of personal cleanliness and habits.

Cleaning of hands with soap and water before preparing food and after coming from W. C. and wiping them with a clean napkin are absolutely necessary. For this the proprietors must make arrangements for their employees, lavatory, hot water, soap and towels.

Other little points of great value may well be remembered also.

(1) Taking anti-fly measures. (2) Keeping fingers off the food and dishes.

(3) Keeping the head of the servant covered.

(4) Using a fork or a pair of tongs for taking out solid foodstuff, etc.



To serve food, under cover

(5) Keeping dirty dishes off the counters and tables, and keeping them spotlessly clean.

(6) Allowing the clean dishes to dry on clean racks or shelves and not wiping it dry by towels.

(7) Forbidding an employee to handle food when he is sick.

Remember that the proprietors of eating establishments hold an important position both in public health work and civic life, and as such, must rise to the fullest stature in making their hotels safe and aid the health authorities to maintain public health at a high level. Remember that the health of your customers is in your hands, and is your first concern.

VISIT TO THE TAJ BY SOUTH INDIAN HOTEL-KEEPERS OF THE CITY

Monday the 24th January, 1949.

The following points are of interest to the hotel-keepers, who should make changes and improvements in their small hotels in the light of insight and experience gleaned from the above visit.

1. Food untouched by hand and served under a suitable cover.

2. Scrubbing and washing facilities (soap, bowl of potassium permanganate solution) provided for cooks, servers and other servants.

3. Dustbins kept covered.

4. Filtered water used for drinking purposes and boiled water used for cooking.

5. Periodic medical inspection of servants—servants not allowed to work when sick.

6. Dining room washed every day. Swabbing of the floor done twice or thrice a day.

7. Painting walls six-monthly or annually. Cleaning walls, ceilings, etc., twice a week.

8. DDT sprayed periodically.

9. Servers issued clean uniform at every service which includes an apron and instructed to put on a cap completely covering the head.



WRONG—Dipping fingers in glasses.

10. Special provision for cleaning dirty utensils. Different troughs with hot and cold water taps for cleaning and scalding them.

11. Supplying clean napkins for drying the washed vessels to workers—Dining plates introduced in specially prepared hot chamber. This assures thorough cleaning.

12. Separate and closed racks and almirahs provided for keeping the washed vessels.

13. Vegetables washed thoroughly well before cooking.

14. Clean habits insisted upon from servants by the authorities.

15. Spitting and smoking strictly prohibited in pantry, kitchen and other sections.

16. Clients with skin diseases or whooping cough or any apparent symptom of disease asked to stay out.

17. Separate lavatories, etc., provided for servants, which are away from the cooking and food storage places.

18. Water heated separately for preparing tea, etc.

19. Fresh and clean foodstuff used in preparation of dishes—bread, cakes, biscuits, pastry, etc., done by them under the supervision of a trained and qualified chief and steward.

20. The whole place was spotlessly clean, as a result of which the environs appeared to be free from domestic pests, viz., flies, mosquitoes, cockroaches, lizards, rats and such other vermins.

21. Clean and peaceful atmosphere is as necessary in eating-houses as clean food.

NEW APPROACH TO FOOD SANITATION

The Propaganda Section, Health Department, Bombay Municipality, has launched a new move for making the eating establishments in the City safe. The new approach to food sanitation is through health education.

Social and economic conditions force more and more citizens working in offices and factories to



RIGHT—Right way of carrying glasses.

143446.

eat in public restaurants, whose number has enormously increased, consequent upon the inflation in city's population. This practice calls for the improvement in the sanitation of eating-houses, many of which are not run along proper hygienic principles. Fresh clean food is essential to the health of the city and the health of the citizens would be jeopardised if cleanliness is not maintained in the kitchen and servants do not conform to clean habits.

It is, therefore, necessary that better knowledge of health and cleanliness be spread both among proprietors and their employees. Lack of health knowledge is one of the main factors which has brought about the deterioration in the sanitary condition of the hotels in the city. Hotel-keeping is a profit-yielding profession and consequently more and more people have taken to it, and the proprietors have not devoted as much attention as is necessary to the sanitary aspect of the trade.

As a first step in this drive, a meeting of the South Indian hotel-keepers was organised at Matunga in December 1948. The Executive Health Officer presided and explained to them the need for maintaining cleanliness and suggested improved methods of work. The Propaganda Officer also told them how health knowledge would be disseminated both among proprietors and their employees via sound films, posters, leaflets, talks and inspection visits, etc.

As a second step in this direction, the hotel owners of the South Indian group of hotels, were taken to the Taj Mahal Hotel, which is regarded as one of the best in the East, in January 1949 and shown the various methods of work involved in maintaining sanitation.

The reason for selecting this group first is that the hotels of this group are comparatively clean and as such improvements could be effected quicker and in an easier manner. When their hotels become cleaner still, they would serve as "models" for other hotel-keepers.

The following points of importance are enumerated for the guidance of the hotel-keepers:—

1. Sterilization of used utensils 180°F to remove grease and kill germs. ("Lip-marks" are visible on utensils carelessly washed and the germs deposited there spread infection.) The washed utensils must be wiped dry with a neat towel and placed on a covered rack.

2. Keeping cooked food under glass cases and raw foodstuff in closed containers to protect them from being contaminated by flies, cockroaches and such vermins as lizards and rats.

3. Taking anti-fly measures—use of fly-rolls, fly-traps, DDT spray, etc. The fly is a great disease carrier and it contaminates food. The dustbins must be kept covered.

4. Proprietors must insist upon clean habits from their servants. They must provide facilities for washing—a nail-scrubbing brush, soap, water, solution of potassium permanganate and a clean napkin for the use of servants. They must see that no servant resumes work unless he washes his hands after nature's call and that no servant touches food or serves it when he is sick.

5. Proprietors must insist upon a medical certificate from their employees before employing them. Hotel servants usually suffer from infectious or contagious diseases of which the proprietors are not aware.

6. Proprietors must supply clean uniforms to their servants, which must include a cap and a napkin which must be changed daily.

7. Brass and copper vessels must be tinned at the slightest sign of wearing out of tin to avoid food poisoning.

8. Walls and ceiling of dining room must be whitewashed or painted at least twice a year and those of the kitchen thrice or four times a year.

9. Avoiding the use of cups, saucers and glasses with corrugated surfaces—these do not permit easy and thorough cleaning.

10. The kitchen must be kept spotlessly clean as food is likely to be contaminated during

preparation. Food may also be contaminated after preparation and servants must be instructed to keep their hands off cooked food. The kitchen should not be a "black spot" of the hotel.

11. The place for washing soiled vessels must not be near latrines nor should latrines be near the kitchen.

12. Spitting and smoking must be prohibited.

13. Proprietors should see that their servants bring fresh vegetables and good stuff from the bazaar, and that they are cleaned well before cooking.

14. Servants must be instructed not to keep their chappals, etc., in the kitchen.

The above points would help the proprietors in improving the sanitary condition of their hotels.

To-day Bombay is a city of many hotels and you must make Bombay a city of many good hotels. If every proprietor takes on to himself to improve his hotel, automatically all the hotels in the city would improve. When you feel confident to throw open your kitchen for public inspection, you may take it that all is well.

ROACHES AS PASSIVE VECTORS OF PATHOGENS

Philip N. Albright. *Texas Jour. Pub. Health*, Jan. Feb. 1948.

"There is summarized herewith a major portion of the material in this book dealing with the carrying of pathogens by roaches. Practically all of this material has to do with the carrying of the organisms internally.

"Most of the work has been done on the Oriental roach, *Blatta orientalis*; but work has also been done to considerable extent on the American roach, *Periplaneta americana*; the Australian roach, *Periplaneta australiasiae*; and the German roach, *Blattella germanica*.

"All of these species of roaches are found in Texas although the German roach is by far the most common. All of them are quite at home in our dwellings and our food establishments. Life histories of these roaches have a great similarity; habitats are similar, and food habits are nearly identical."

The article lists "the pathogens that have been found to be carried in the roach and that have been passed unharmed through the digestive system of the roach. . . . Probably several other pathogenic types of virus, which may or may not be carried as inclusion particles, are associated with other pathogenic organisms or with various symbiotes.

"With this list to guide us there seems to be little doubt that the roach, of whatever species, should be vigorously condemned as an inhabitant of food handling establishments and of human dwellings. It may rightfully be considered as one of our major public health problems in the field of environmental sanitation."

—WALTER BREEDLOVE
(P. H. Engg. Abstracts)

FILARIASIS IN PALACOLE

by

Bureau of Malariology

Public Health Department, Madras.

We are all familiar with the condition known as elephantiasis. Elephantiasis is but one manifestation of a group of disease falling under the term filariasis. Under this term are included elephantiasis of the arms, legs, genitalia, breast, lymphangitis, elephantoid fever, enlargement of glands, chyluria, etc. Of these several manifestations, elephantiasis is common and the solid swelling of the affected parts is easily noticed. This disease causes gross disfigurement of the unfortunate victim. As the very name indicates, the affected parts assume elephantine proportions resulting in considerable physical and mental agony to the patient. One affected by this condition, is a burden to himself and the rest of the society. The person affected is rendered physically incapable of any active work.

Filarial disease is caused by a hair-like round-worm about 2" in length. The worms are female, sexually differentiated into male and these usually inhabit the lymphatic vessels and glands of the infected human being. The female worm produces an endless stream of embryos known as microfilariae which appear periodically in the peripheral blood usually at nights. These are minute organisms and can only be seen with the aid of a microscope. When seen in fresh blood they appear as snake-like organisms wriggling about actively.

The disease is spread from one individual to another through the agency of certain types of female mosquitoes. The embryos are taken in by the mosquitoes while feeding on the human blood. The embryos undergo developmental

changes in the body of the mosquitoes and finally the young one of the future filarial worm gets lodged in the biting organ of the mosquito. This development takes about 10 to 12 days. Such an infected mosquito when it bites a healthy human being transmits the young worm which gets into the human body either through the puncture made by the mosquito or by an independent puncture made by the young worm itself. Once inside the body, further growth takes place until the worm becomes mature. This takes usually from 6 to 12 months.

This disease is prevalent in coastal areas and parts of many districts, including the Circar districts, especially East and West Godavari districts and particularly in Narsapur taluk of West Godavari district. A survey of Palacole was done by the Regional Malaria Organization, Vizagapatam, in July 1948, with a view to ascertain to what extent this disease is prevalent, what type of mosquitoes act as spreading agents and what measures are necessary for the control of this loathsome disease. The survey revealed many interesting facts. A brief account of the survey is given below:

Palacole is a town, two square miles in extent, with a population of about 25,000. The country is flat and situated in a water-logged area. It is surrounded by a number of irrigation canals, and is studded with a number of tanks of various sizes, many of which are covered with aquatic plants—pistia, water hyacinth, lotus, etc. There is no drainage system for the town. The sullage water is drained partly into the tanks and partly on to the roads.

The chief occupation of the people is cultivation of the wet type. There are rice fields all round the town. The town abounds in coconut, plantain and citrus fruit gardens. Palacole is also an important trading centre.

HISTORY OF FILARIASIS IN PALACOLE

Available evidence shows that the disease has been in existence in this town since several years—50 or more. From enquiries it was gathered that several places in the West Godavari district, mainly Narasapur, Bhimavaram, Mariteru, Achanta, Veeravasam, etc., are endemic for filariasis, but which of these places would have acted as the starting focus for the disease, is not known. The ancient history of the disease in this locality is by no means clear.

SURVEY

The survey covered a population of nearly 6,000 people. Elephantiasis of legs and arms was noticed in 377 of whom 229 were females. Elephantiasis of genitals was noticed in 88 males. Lymphangitis and glandular enlargements were observed in 29. In all 8% of the people surveyed showed filarial manifestations.

556 night blood specimens were taken from apparently healthy people and examined. The examination revealed the presence of filarial embryos in 83 giving a percentage of about 15. These persons may or may not develop filarial disease in due course but they are a potent source of danger to the community, in that they serve as reservoirs of infection for the spread of the disease through the agency of the mosquitoes. Filariasis is thus seen to exist in about 23% of the population.

TYPES OF MOSQUITOES

There are two varieties of mosquitoes which spread this disease. These are known as culex and mansonioides. The modes of breeding of

these two types are essentially different from one another.

CULEX

The eggs are laid on the water-surface. The larvae emerging out of the eggs frequently come to the surface of water to breathe. Similarly the pupae—the stage next to larvae in the life history of the mosquito—float to the surface of water to breathe.

MANSONIOIDES

But in the case of mansonioides variety there is no direct relationship between water surface and the different aquatic stages of the mosquito. The eggs are laid on the under surfaces of the leaves of the aquatic plant known as Pistia or water lettuce. The larvae emerging out of these eggs attach themselves to the rootlets of the plant by their breathing tubes and obtain their air-requirements from the air cells in the roots. Similarly the pupae breathe by attaching themselves to the roots of the plant. Thus they seldom or never come to the water surface as do the culex type. These mansonioides larvae and pupae had hitherto escaped detection in our Province. Their presence in association with Pistia plants was for the first time detected in Palacole in July 1948. Both the types of mosquitoes (culex and mansonioides) are prevalent in Palacole, but in varying densities—1,826 mosquitoes are captured. Of these 740 were mansonioides, 210 culex and the rest were anophelines which are not concerned with filariasis. 250 mansonioides and 72 culex female mosquitoes were dissected. 31 mansonioides and 1 culex were found infected with young filarial worms. The percentage of filarial infection is considerably more (97.0%) in mansonioides than in culex (3.0%). The spreading agent for filariasis in Palacole is mainly the mansonioides type of mosquitoes.

Knowing as we do, the mode of living of this type of mosquito it is easy to eradicate them. The

measure consists in complete removal of Pistia plant from all water collections. The greatest incidence of the disease is between the ages of 30 and 50—a period of life when maximum out-turn of work is expected. But persons suffering from this disease are rendered incapable of hard, physical work. Thus, this disease contributes to considerable economic loss to the country.

Filariasis is an entirely preventible disease. The prevention in Palacole consists in the complete removal of Pistia plants which are essential for mansonioides mosquito breeding. This measure should be supplemented by weekly spraying of drains and sullage collections with 1% DDT in oil to control the culex mosquito also.

(Courtesy, Madras Information)

We wonder why the author of this article has chosen to hide his face behind an imaginary "Bureau of Malariology." The public are not aware of the existence of any such bureau in the Madras Public Health Department. Be that as it may.

We were rather amused on perusing this article. We referred it to a top-ranking specialist in the field in our country. We publish hereunder his comments. The inference is obvious. Like the author of the original article, the critic prefers to remain unknown, quite naturally.

—Ed., P.H.

Filariasis is an important problem in Madras Presidency. Extensive areas are affected by this disease. In the early stages of filarial infection, no symptoms are apparent. At a later stage, external manifestations appear, such as, fever, swelling of the glands, and inflammation of the limbs or genitals. With the progress of the disease, a condition known as elephantiasis sets in, and the size of the limb increases progressively with every attack of fever. For this disease which causes so much of sickness, suffering and even incapacitation, no safe and reliable cure is yet known.

On the other hand, prevention is easy. Here is a disease against which the medical practitioner is powerless, while the sanitarian could easily hit the target. As the infection is transmitted through the agency of mosquitoes, a properly planned scheme for the control of the particular

kind of mosquito involved (based on precise studies) would achieve remarkable results. That it is possible to control filariasis by such measures has been demonstrated in India and elsewhere.

We welcome the publication of the note on "filariasis in Palacole," issued by Bureau of Malariology of the Madras Public Health Department. We hope that this would serve to focus the attention of the public and of the authorities on this important problem.

We must however express our disappointment at the superficial manner in which this subject has been dealt in this report. Filariasis control, to be effective, should be based on precise knowledge of the species of Filaria parasite involved, the species of mosquito responsible for the spread of the infection and the breeding habits of mosquito carrier. As far as we are aware, there are two types of filarial infection in

India, the *bancrofti* type and the *malayi* type, both of which give rise to elephantiasis. The two infections are transmitted by two different kinds of mosquitoes. If the infection is the *bancrofti* type, control measures should be directed against the *Culex* mosquito which breeds in sullage; if it is the *malayi* type, they should be directed against *Mansonioides* which breeds in tanks and ponds. Thus the particular control measures to be adopted would depend on the type of infection involved and the breeding habits of the carrier mosquito concerned. This fundamental information as to the type of filarial infection in Palacole is unfortunately wanting. In consequence it would be difficult to formulate effective control measures.

From the material presented in the notes referred to, we have tried to ascertain the types of infection in Palacole, but without success. There is contradictory evidence as to the species of Filaria in Palacole. The fact that a greater incidence of infection was observed in *Mansonioides* mosquitoes would point to the infection being of the *malayi* type. On the other hand, the high

incidence of genital affections would indicate that the infection is of the *bancrofti* type.

This lacuna in our knowledge of the causative parasite in Palacole must be filled before attempting to formulate measures for filariasis control in that area. A defective scheme formulated on insufficient scientific data is likely to do more harm than good. Should such a scheme fail, it would be a serious set-back to the efforts of sanitarians genuinely interested in the improvement of public health.

We are also astonished that an important and well recognised measure for the radical control of mosquito breeding, namely drainage, has found no place in the recommendations made in this report.

We cannot too strongly emphasise on the importance of accurate scientific data in such investigations. We trust that Government will engage staff with specialised training and experience in this type of work and also enlarge their scheme so as to include more extensive investigations and measures for filariasis control in the province.

MOSQUITO ABATEMENT, A MODERN COMMUNITY SERVICE

"The aquatic phases of the life cycle of the mosquito offer a vulnerable spot to attack for control of this pest. Permanent drainage of breeding areas is most desirable, although temporary measures using toxic sprays or dusts are very effective. A well-planned long range program can be brought within the means of any size of political unit. A well-balanced ratio of permanent to temporary work will give protection while the breeding places are gradually eliminated."

—(P. H. Engg. Absts.)

CAUSE, SPREAD AND CURE SYPHILIS GONORRHEA

by

U. S. Public Health Service

SYPHILIS IS A DISEASE

It is caused by a germ.

It is spread, like other germ diseases, from one person to another.

It has many names, "the pox," "stiff," "lues," "bad blood." They all mean syphilis—a dangerous, catching disease.

About 3,200,000 people in the United States have syphilis today.

About 220,000 more catch it each year.

SYPHILIS IS DANGEROUS

Syphilis can cause insanity.

Syphilis can cause blindness.

Syphilis can cause heart disease.

Syphilis kills thousands each year in this country.

Babies very often catch syphilis before they are born if their mothers have the disease.

Syphilis can cause miscarriages, dead babies, or crippled, sickly, and insane children.

SYPHILIS IS SPREAD FROM ONE PERSON TO ANOTHER

Because syphilis is caused by a germ, it is caught when this germ passes from an infected person to one who is not infected. Syphilis is caught from infected people, usually by having sex relations with them, or through other close physical contact, such as kissing.

The syphilis germ cannot live long away from the human body. So syphilis is almost never caught from door knobs or toilet seats.

SIGNS OF SYPHILIS

1. PRIMARY SYPHILIS

The first sign of syphilis usually is a sore. The sore appears in about 3 weeks at the point where the germ entered the skin.....on the sex organs, or on the lips or fingers. The sore is called a chancre. It may look like a pimple, blister, or large open sore. But, at times there is no chancre. Sometimes it is not noticed, or, if the patient is a woman, the sore may be inside the sex parts.

2. SECONDARY SYPHILIS

The sore disappears even without treatment—but, without treatment, the germ that causes syphilis will not disappear and syphilis remains in the body. Three to six weeks after the first sore, a rash may appear on the body. Sores may occur in the mouth. There may be fever, headache, sore throat.

This is the second stage of syphilis. Sometimes these symptoms are so slight they are not noticed. But the disease is very catching in this stage.

3. LATE SYPHILIS

The sores, rashes, sore throat, may disappear without treatment. But the germ is still there—hidden. After a few years it may invade the brain, the spinal cord, the liver, the spleen, the heart, the blood vessels, and other parts of the body.

SEE A DOCTOR

Many people have syphilis and do not know it.....only a doctor can determine whether you have syphilis. If you think you may have been exposed to syphilis, see your own doctor or the doctor at a clinic.

The doctor will examine you carefully. He will give you a blood test. This means that he will take a small sample of your blood and send it to a laboratory where special tests will be made to help the doctor find out whether you do or do not have syphilis. In some cases, the doctor may send a sample of your spinal fluid to the laboratory for a test. You may have to return to the doctor several times for additional examinations and laboratory tests.

Every man and woman should have a blood test before marriage.

Every woman expecting a baby should have a blood test as soon as she knows she is pregnant.

SYPHILIS CAN BE CURED

Most cases of syphilis can be cured if treatment is begun early.

New, rapid treatments for syphilis can be completed in about 2 weeks in a Rapid Treatment Center or in a general hospital. Even older cases of syphilis may be helped by treatment given by a doctor in his office or in a clinic.

Only doctors can treat syphilis. If you have syphilis.....do not try to treat yourself.....don't expect syphilis to cure itself.....and don't take a chance on giving it to someone else. Stay away from quacks and so-called men's doctors.....they take your money for fake cures.

If you cannot pay for treatment, go to your local health department.

People with syphilis who complete treatment live longer than those who have the disease but fail to take complete treatment.

If you have been treated for syphilis, be sure to return regularly to your doctor for check-ups.

DON'T TAKE CHANCES

There is only one sure protection against syphilis.....don't expose yourself to the disease.

But if you think you may have been exposed, give yourself the best possible chance.

See your doctor at once.

Stay away from quacks.

Never try to treat yourself.

Have a blood test and complete physical examination now and whenever you have any doubt, so you will know for sure.

GONORRHEA

Gonorrhea is a DISEASE.....it is CATCHING.

You may know gonorrhea by such names as "clap," "gleet," "morning drop," "running range," or "a dose."

Each year more than a million people catch gonorrhea.

Gonorrhea is caused by a germ.

Like many other germ diseases, gonorrhea is spread from person to person. This means that gonorrhea is a communicable or catching disease.

Gonorrhea is caught when the germ passes from the body of someone who has the disease to another person.

The germ which causes gonorrhea grows on the moist inner parts of the sex organs. Gonorrhea is usually caught through sexual intercourse with someone who has the disease—it is *not* caused by lifting heavy objects, it is *not* caused by strains.

SIGNS OF GONORRHEA

The first symptoms or signs of gonorrhea appear from 1 to 8 days after a person catches the disease.

Any unusual discharge from the sex organs may be a sign of gonorrhea. Another early symptom is a burning pain while urinating.

A man usually will notice these signs or symptoms if he has gonorrhea. But a woman with gonorrhea may not have a burning sensation, or the discharge may be so slight she will not notice it.

RESULTS OF GONORRHEA

Gonorrhea may start mildly and sometimes may not do any serious damage to the person who has it.....but if not treated, it sometimes makes its victim an invalid.

The germ that causes gonorrhea may cause great damage and pain in the sex organs. It may attack the heart. It may settle in the joints and cause rheumatism or arthritis. If the gonorrhea germ gets into the eyes, it may cause blindness.

Untreated gonorrhea is one reason why many men and women cannot have children.

SEE YOUR DOCTOR

If you think you may have caught gonorrhea, go to a doctor at once. If you can't afford to pay a doctor, go to a free clinic. Ask your health department.

Painful urination or a discharge does not always mean gonorrhea—it can be something else. So do not try to decide for yourself whether you have gonorrhea.

CURE OF GONORRHEA

Penicillin will cure most cases of gonorrhea.

The treatment requires only a short time in your doctor's office or in a clinic.

Never try to treat yourself. Only a doctor knows how to treat gonorrhea.

Stay away from quacks—they take your money for fake remedies.

If you have gonorrhea, keep seeing your doctor until he says you are cured. The signs

of gonorrhea may disappear and you may think you are free of the disease. But it takes careful examination, especially of women, for the doctor to know there are no more gonorrhea germs.

And if you have gonorrhea, *don't* take a chance on giving it to anyone else.

PROTECT YOURSELF

The surest way to avoid gonorrhea is to avoid sexual intercourse with any person who has the disease. You can't tell by a person's looks whether he or she has gonorrhea.

Before marriage, go to a doctor for a complete health examination. Some States require blood tests before marriage. The blood test is a test for syphilis. But gonorrhea is different from syphilis, even though both diseases are usually caught the same way.....and sometimes at the same time. So, a medical examination is necessary to make sure that there is no gonorrhea.

CHECK FOR SYPHILIS

If you have been treated for gonorrhea, your doctor will tell you to come back to make sure that you did not catch syphilis at the time you caught gonorrhea. Be sure to follow this advice, because the signs of syphilis do not appear as soon as those of gonorrhea.

Remember, if you have been treated for gonorrhea, return to your doctor to make certain you do not have syphilis.

Gonorrhea is *CATCHING* it may be *PAINFUL* *CRIPPLING* *DANGEROUS* it may cause *STERILITY* but it usually can be cured quickly. You can get complete treatment within a few hours in your doctor's own office, or at a clinic.

THE CONQUEST OF VENEREAL DISEASE

by

Charles Walter Clarke

Penicillin has changed the outlook for conquering syphilis and gonorrhea. Today, without danger to patients, penicillin enables us to make syphilis non-infectious within 10 days in 85 to 90 per cent of all cases. One injection of penicillin will cure gonorrhea, rendering it non-infectious, in about the same proportion of cases. Private physicians, public clinics, hospitals in practically all communities can give penicillin treatment. We have more accurate methods of diagnosis and more effective methods of treatment and prevention for syphilis and gonorrhea than for any other disease of equal gravity, and yet in the first six months of 1948 749,540 new cases of these two diseases were reported in the United States, to say nothing of those that remained unreported. Syphilis and gonorrhea cases together far outnumber those of any other communicable disease and either alone is among the highest in prevalence. Perhaps three million people in the United States suffer from syphilis and five times as many from gonorrhea.

Why is it that syphilis and gonorrhea, though we have effective weapons against them, continue to spread to several million people each year? Partly because only about one-third of all syphilis patients seek treatment while the disease is in its early highly, communicable stage. For every case that comes for treatment at any stage there is believed to be at least one that goes entirely untreated. Gonorrhea is ignored or neglected in the majority of cases. There are thus vast reservoirs from which infections keep on spreading and spreading.

Yet the VD problem is far from hopeless. In the first place, centuries of simple observation and vague surmise have given place in the last 50 years to scientific methods and accurate

knowledge. We no longer think as did Diaz de Isla in 1516 that venereal disease is spread by "syphilitic cabbages"; we know now that it is spread principally by sexual contact. We do not believe like Paracelsus that it is caused by "miasma"; on the contrary, we are well acquainted with the pale, spiral germ which is the true cause and which can be seen under a microscope. In spite of their many mistakes, these early physicians slowly built up a sound body of information as to how syphilis spreads. As early as 1495 a German physician warned against contact with "postulous women." Only a few years later kissing was recognized as a way to spread syphilis and an Italian physician noted that an infected woman could pass this disease to her unborn child. Within 100 years after syphilis was recognized in Europe all the common methods of its spread were known to physicians.

In ancient times strange efforts were made to control the venereal diseases, which were not differentiated one from another, and to prevent their spread. Frederick Barbarossa in 1158 tried to protect his soldiers by cutting off the noses of prostitutes. This was intended to discourage these camp followers and make them less attractive to Barbarossa's fighting men. In the Middle Ages the Scottish kings decreed that Edinburgh subjects having venereal diseases were to be exiled to an island in the Firth of Forth. Napoleon is said to have ordered infected female camp followers thrown in the river Nile. It is not apparent that these vigorous measures prevented the spread of VD.

Modern scientific methods have been used here and there with so much success that we feel sure that in time syphilis and gonorrhea can be eradicated. By vigorous campaigns Sweden by 1935

actually reduced its syphilis incidence rate to only 7 cases to the 100,000 population, a world record. Norway and Denmark achieved comparable low rates. Between 1918 and 1935 England cut her syphilis rate in half. We in the United States for the first time in our history in 1938 began a persistent, systematic effort to control venereal diseases and by 1941 could show encouraging progress. The venereal disease rates in Great Britain and the Scandinavian countries continued downward until the outbreak of the second World War.

We then saw demonstrated again one of the lessons taught us by history. Whenever deep social disruption occurs—wars are the best example—there is always a sharp rise in the prevalence of venereal diseases. Families are broken up, young people are cast adrift, moral barriers are relaxed, sexual promiscuity becomes rampant and as a consequence syphilis and gonorrhea spread rapidly in the affected population. During and after World War II the rates of infection mounted to high levels throughout the world but especially in those countries most disturbed in their normal social life. The rise in the United States was appreciable but small compared to the countries directly and violently disturbed by devastation and enemy occupation.

The experiences of the U. S. armed forces clearly proved that direct measures vigorously applied sharply reduce the venereal diseases among military personnel in wartime. During the first World War medical, educational and law enforcement measures reduced the rate to the lowest point in Army history up to that time. Similar but more widespread efforts during World War II reduced the venereal disease rates to the lowest point in wartime military history, so far as known, namely, 28 new cases per 1000 men per year. This is probably a lower rate than existed among civilian men of military age.

Whereas the venereal diseases had previously been one of the principal causes of lost time in the

armed forces, the introduction of rapid treatment methods saved the American Army, Navy and Air Forces millions of man-days during and following World War II. Of course, since similar treatment is available to civilians, a similar saving in man power is the result of modern treatment.

Syphilis and gonorrhea, like other contagious diseases, occur in local outbreaks which we call epidemics but these epidemics are unlike those of many acute communicable diseases. An outbreak of measles or influenza in a city will attack thousands of people within a few weeks. Epidemics of syphilis or gonorrhea are comparatively small and slow-moving. The germs of these diseases do not travel through the air on droplets propelled by coughs and sneezes. They thrive only in the human body or under laboratory conditions and die almost immediately when exposed to cold, heat, drying, soap and water, antiseptics or any other condition outside the human body. This means that food and drink, cups, towels, doorknobs and toilet seats hardly ever spread venereal diseases.

Close contact as in sexual relations and kissing is practically the only way to be infected with syphilis, except in its congenital form which is transmitted directly from mother to child. Gonorrhea spreads almost exclusively by sexual contact. Since the number of such intimate contacts by one infectious person is limited, venereal diseases spread, not like influenza or measles to everyone near him in a bus or train, but to his intimate associates, his wife and children or his sexual partners if he is promiscuous.

Even within such limits, however, the number of infections can run high. In a study made by the armed forces, from 51 to 57 per cent of the sex "contacts" named by a large group of infected soldiers were found to have syphilis or gonorrhea. In a small New England city 48 new cases of syphilis within two or three weeks were reported to the health officer. This was an unheard-of situation in that place. A special

investigation traced all of these new cases to three persons—a woman and her two daughters who had recently moved in.

Most significant is the fact that venereal diseases can be prevented in almost every single case. The only completely satisfactory and sure means of prevention is to avoid exposure to infection—that is, to live according to the moral standards which time and society have found lead to health and happiness for most people. With regard to this point science and religion are in entire agreement. In wartime and other periods of social unrest, however, normal standards are often upset; also there are always some poorly adjusted people who are promiscuous, and unfortunately a large number of people who are ignorant. For such people there are preventive methods known to physicians which, if used correctly and promptly, will minimize the danger of infection. Since anyone who attempts to use these methods should have personal instruction in their application, they cannot properly be described here. Anyone wanting to know about personal prophylactic methods should consult his or her family doctor, who will in most cases advise against trusting to them as a means of health protection.

The outstanding fact in the medical as distinguished from the moral and social attack on syphilis and gonorrhea is that treatment renders these diseases non-infectious almost immediately; if treatment and observation are continued, the infected person becomes permanently non-infectious—unless reinfected. Thus the chain of infection is broken as soon as the patient goes under treatment. With the older treatment methods at least a year was needed to cure syphilis. Only 30 per cent of the patients persisted in treatment to the finish. Many more, however, went far enough so that they were at least not dangerous to their families. Under the old plan of treatment reinfection was very rare. With penicillin, however, treatment can be

accomplished so quickly that almost all cases complete it. Unfortunately, reinfection with syphilis occurs more frequently with the rapid method than with the slower methods.

A person can, and some do, acquire gonorrhea over and over again. As a matter of fact, one can be cured today and come back the next week with a new infection. All treated cases need watching by a physician for several months after to make certain that cure is complete and, in the case of gonorrhea, that treatment has not masked syphilis infection as it can when both diseases have been acquired.

One of the greatest obstacles to wiping out VD is that in many people and especially in women syphilis or gonorrhea is so inconspicuous that they have no idea that they are infected. Such people, if promiscuous, spread their infections to others.

Even more tragic is the fact that, if untreated, the syphilitic woman can pass her disease to her baby before its birth. Of such babies some are born dead, others die soon after birth, and still others survive to become crippled, blind, deaf, paralyzed or insane, unless treatment is administered to them. Thirty-eight states now require every physician attending a pregnant woman to include a blood test in the prenatal examination. One study of 19,411 cases showed that 70 times as many cases of syphilis were discovered by testing every pregnant woman as by testing only those whose history or symptoms suggested the presence of syphilis. *If a pregnant woman who has syphilis is treated by modern methods, she is almost sure to bear a child free from syphilis.* Even though a woman may know she is a perfectly safe mother, she should still welcome universal blood testing of all pregnant women in order to help protect those who are less fortunate.

It would, of course, be even better to prevent any introduction of syphilis into family life. For this reason 36 states now require a premarital examination for syphilis including a blood test.

Studies show that about three-fourths of those found infected were quite ignorant of this condition. Most premarital examination laws prevent the marriage of a person who has syphilis in a communicable stage. After treatment has rendered a person permanently non-infectious that person can marry. With modern methods this means that the premarital law does not permanently bar marriage of persons having syphilis but only requires postponement.

There are so-called screen tests for syphilis where everyone in a group has a blood test, regardless of history or symptoms. About 66 per cent of large industries having medical services make routine syphilis tests of all applicants for employment.

This leads to discovery of many previously unknown cases. Nearly 20,000 cases of syphilis are discovered every year by means of premarital, prenatal and screening tests.

Health authorities sometimes carry on promotional programs which result in a large proportion of the whole population of a community voluntarily receiving blood tests for syphilis. In a three years' experiment on Staten Island, New York, it was found that the largest number of patients applying for VD diagnosis and treatment came as a result of popular education. Newspaper articles, motion pictures and radio talks give the public the facts about these infections and where to go for examination and medical care. No one wants to suffer the disastrous effects of neglected syphilis and gonorrhea, and few indeed willingly pass infection to others. The great majority, if they know the truth, will seek medical care which protects them, their families and their close associates. The health authorities and social hygiene societies continually carry on popular instruction regarding VD.

A patient with proved venereal disease has a grave responsibility to his fellows. Most doctors and clinics ask him to give information regarding all intimate contacts during the period when he

may have incurred the infection or may have infected others. Remembering the serious results that can follow untreated syphilis or gonorrhea, it is only decent to help save others from tragedy. No one will hesitate, if he realizes in addition that information so given is absolutely confidential and that trained professional workers from the health department will persuade the endangered persons to receive examination and treatment if necessary.

Nearly every state has laws that require infectious cases of venereal diseases to receive treatment. If they refuse treatment or cannot be trusted to continue it until non-infectious, they can be quarantined until the physician in charge of their case considers it safe to dismiss them. Other laws help to eliminate prostitution, which scientific research and experience show cannot be made medically safe; quite aside from the fact that it is morally and socially abhorrent.

Physicians, health authorities and individual patients can accomplish only about so much unless they get general public support. About 200 communities in this country have local social hygiene societies which help in public education, back up intelligent sex instruction by parents in the homes, help assure adequate diagnostic and treatment facilities, encourage vigorous law enforcement and work with the other groups interested in health and welfare. The American Medical Association and the American Social Hygiene Association, a national voluntary association fighting the venereal diseases have for many years worked together to stamp out these infections. They have worked for the high standards of diagnosis and treatment in these infections and adequate health services to combat them, and have striven to instruct the public in the simple, hopeful truth about them. They have provided aids to help parents guide and instruct their children in wholesome knowledge of the sex factor in human life.

(By Special Permission of HYGEIA—The Health Magazine)

FOOD HANDLER EXAMINATIONS OR THE EDUCATIONAL PROGRAM IN LOS ANGELES

by

T. Ross Williams, B.S., R.S.,

Director, Division of Training and Investigation, Los Angeles City Health Department.

The routine physical and laboratory examination of food handlers has proven disappointing. Training of food handlers in the fundamental principles of personal hygiene and environmental sanitation offers one practical approach to the control of food borne diseases.

The most common offender traced to commercially prepared food products or food prepared by professional food handlers has been food intoxication due to staphylococcus. Milk, custards, pastries, salads, sandwiches, ham, tongue and similar meats are the foods most commonly contaminated and usually by infected human beings.

The upper respiratory and droplet borne diseases, the common cold, influenza, tuberculosis, diphtheria, scarlet fever, measles, meningococcic meningitis, whooping cough, mumps, poliomyelitis, septic sore throat, etc., may be spread by direct transfer of the infectious material to other persons.

These as well as enteric infections may be spread by contaminated utensils used in serving of foods. Many of the intestinal diseases as well as scarlet fever, septic sore throat, and diphtheria, may be spread by the infected individual contaminating food and the multiplication of the infectious organism therein. Thus infectious agents may be transferred from food handlers by coughing, by talking in the presence of others, by coughing into the hands then handling food or utensils, sneezing, or talking over foods or utensils, by direct transfer of the secretions of

the nose or open body lesions to foods or utensils, or by contamination of hand and then handling food or utensils.¹

Since upper respiratory infections may be transferred either from the food handler to the public or the public to the food handler, these diseases are seldom traceable to a food handler in a commercial restaurant.

The results of physical and laboratory examinations of food handlers has only strengthened the need for more food educational programs. In New York in 1934, after eleven years of experience, that city discontinued the practice. The cost of detecting a typhoid carrier was found to be \$50,000 when the work was accomplished by public health officials, and \$130,000 when done by private physicians.²

Geiger concludes: The routine physical examination by the official public health agency of all food handlers, since the study must be complete and frequent to be of value, is not justified by the results obtained, at least in San Francisco. The same money spent in rational educational activities would probably produce more tangible results.³

The Los Angeles County Health Department abandoned the practice in 1942 after a three-year trial.⁴ Terrell (Fort Worth) does not favour routine examination of food handlers.⁵

Hawley (Los Angeles), states:

Certification that a food handler is non-infectious is analogous in some respects to certifying

that a prostitute is non-infectious. Either may be non-infectious on the day of examination but highly infectious at a later date despite a certificate of health from an official health agency.

According to Wynns,⁶ the examination to be effective should include a careful history, complete physical examinations, nose throat cultures, X-ray of chest, cultures of urine and feces (three cultures at 48 hour intervals) for typhoid, paratyphoid, and the dysentery group, and a wasserman. If the costs of such examinations are so prohibitive, the public can best be protected from contaminated food by (1) education of food handlers, (2) impressing upon physicians and public the necessity of reporting communicable diseases—then if a food handler is suffering from such disease, he can be brought under adequate health supervision, (3) epidemiological follow-up of typhoid and other communicable diseases. Wynn concludes that no amount of food handler examinations will compensate for filthy, careless personnel handling food, and lack of proper facilities and equipment for food handling.

Los Angeles City does not conduct routine physical or laboratory examinations for food handlers except upon request, then only as extensive as the case history indicates.

If physical and laboratory examinations will not protect the public from untrained and potentially dangerous food handlers, training and education in the fundamentals of hygiene and sanitation together with a well integrated follow-up inspectional program will present a more efficient and effective means to control food borne diseases and maintain a high degree of sanitation.

There are in Los Angeles approximately 6,000 restaurants⁷; the responsible personnel of each are invited and urged to attend the cities' food handler program known as The Food Sanitation Institute. This institute is conducted in seven one-hour meetings: (1) principles of food sanitation; (2) construction, maintenance and equipment; (3) dishwashing; (4) "pestology";

(5) food poisoning and its prevention; (6) soda fountain sanitation; (7) tavern sanitation.

Some of the points stressed throughout the school are:

1. Construct establishments so that rats, flies, cockroaches, and other vermin are excluded.

2. Purchase and install equipment that can be easily cleaned and maintained in a clean condition.

3. Refrigerate all foods that may cause food poisoning at a maximum temperature of 50°F. or keep at a minimum temperature of 140°F.

4. Use proper methods to pre-wash, wash, sanitize, and store eating and drinking utensils.

5. Control vermin by good sanitation on the premises and by a professional pest control operator.

6. Personal hygiene:

(a) Allow no employee to work with or around foods while suffering from a respiratory disorder,

(b) Insist that hands and arms be washed thoroughly with soap and water before handling foods and after using the toilet,

(c) Prohibit smoking while handling foods,

(d) Provide clean washable outer garments,

(e) Instruct employees to keep fingers out of food and food receptacles,

(f) Provide forks, tongs, or other implements for handling all foods whenever possible.

The success of a food educational program revolves around efficiently training or "selling" to the food handler how and reasons why he should protect his and the public's health, and secondly, a well-organized inspectional program to insure that knowledge learned in class is being applied at the restaurant.

Frequently results from the food handler educational program are not immediately apparent; however, it is noted:

1. Citations to the City Attorney by a "special detail" (which inspects food establishments at all hours solely for sanitary violations) have decreased from 70% of the establishments

inspected in 1944, to 10% of the establishments inspected in 1947, a decrease of 60%.

2. It is assumed, if legal actions are less frequent due to insanitary violations, that methods of handling foods and the cleanliness of the establishment must have improved. Of the 5.8% of our establishments cited to the City Attorney's Office in 1947 for violations of food ordinances, establishments employing one or more food handler graduates represented .08% of the estimated 6,000 restaurants in the city, and establishments not employing food handler graduates represented 5.6%. There were no graduates among those establishments whose permits had been suspended, and none were among those whose permits were revoked.

3. During the four year period, 1940—1943, an annual average of 221 cases of food poisoning were reported, compared with the 1944—1947 average of 139, a decrease of 38%—despite the fact that 173 of the cases reported during 1947 were due to contaminated soya sauce which originated outside the city through no fault of local food handlers.

CONCLUSIONS

1. The most modern food equipment will not protect the public from a potentially infectious food handler who lacks knowledge in the principles of food sanitation.

2. Food establishments in Los Angeles employing graduates of the Food Sanitation Institute were involved in significantly fewer legal actions than others.

3. The food educational program contributes to the overall control of certain communicable diseases.

4. Physical and laboratory examinations are time consuming, expensive, relatively ineffective and tend to impart a false sense of security. A more economical and effective preventive measure is the training of food handlers in the fundamentals of hygiene, proper construction and sanitary methods of storing, preparing and serving food and drink.

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(By special permission from "The Sanitarian"
Journal of Sanitary Technology).

An epidemic of chicken-pox swept through the small western town, but little Jimmie had kept free from the disease.

One morning he ran downstairs excitedly. "Daddy! Oh, Daddy! I know I have the chicken-pox. I just found feather in my bed!"

BCG VACCINE EFFICACIOUS

by

Dr. B. C. Roy and Eleven others

THE following statement on BCG vaccination has been issued by Drs. B. C. Roy, Jivraj N. Mehta, K. S. Ray, K. C. K. E. Raja, R. B. Billimoria, A. C. Ukil, R. B. Lal, B. B. Yodh, K. Vasudeva Rao, K. L. Wig, S. K. Sen, and P. V. Benjamin.

We have already pointed out for good reasons, that people cannot give face value to these statements. We have also brought to public notice that one prominent among them admitted to us that he was *personally* against BCG vaccination, although he was a signatory to the first statement.

While appealing for the whole-hearted support of the people for the popularisation of BCG vaccination, the authors *at the same time stress the importance of simultaneous adoption of other measures*. Obviously, this is the kind of *lip service* which our prominent medical men render to improve the living conditions of the masses! No administration has taken up the *other measures referred to*. Why?

We are convinced that those who have vested interests in tuberculosis should not have been entrusted with an immunisation campaign of this kind. Legitimately, any immunisation programme should be in the hands of the public health (medical preventive) organization. No explanation is forthcoming as to why the so-called public health department has not been entrusted with this duty. It looks as though the authorities are more concerned in opening new avenues to encourage those who have vested interests in White Plague!

—Ed., P.H.

BCG vaccination was started in India in August 1948, and had been in use at Madanapalle in South India and at Delhi in North India since then. Plans are being made by the Government of India to extend the use of this vaccine to all Provinces and some of the States in the near future. In the Press Communique published by Government of India in June 1948, a review was made of the tuberculosis position in India and

the place that B.C.G. vaccination can have in the campaign against the disease was discussed. Since then there have been a number of articles in the Press, some advocating the use of the vaccine and others raising doubts in the minds of the people regarding the efficacy of BCG vaccination and its harmlessness. Doubts have also been expressed as to whether the Government and the people will be led into a false sense of security against the disease because of the vaccination and thereby neglect attention to the other aspects of the control of tuberculosis such as improvement of environmental hygiene, housing, nutrition and sanitation as well as a direct attack on the spread of the disease through the isolation and treatment of infective cases by the provision of an adequate number of clinics, hospitals, sanatoria and after-care colonies. Such doubts were expressed when smallpox vaccination was first introduced but truth prevailed. In view of the likely public criticism we felt desirable to place before them our considered views on BCG.

BCG vaccine (Bacillus Calmette Guérin) was developed by Calmette in Pasteur Institute, Paris, after 13 years of careful experiment and work. It was used on human beings in 1921. Proper technique and dosage have been carefully worked out by Calmette and workers from other countries since that date. By the end of 1948 more than one million people were vaccinated in Denmark, Norway and Sweden alone. The vaccination has also been practised in other countries like the U.S.A., Canada, South America, Russia and more recently in most of the other European countries and it is estimated that over 10 million people have been vaccinated up-to-date all over the world.

WILL REDUCE TB MORTALITY

As the result of a careful study of the literature on the subject we are convinced (1) that BCG vaccination is efficacious and that, if it is carried

out on a mass scale, it can be expected to reduce tuberculosis mortality in India very considerably, (2) that it is entirely harmless, and (3) that segregation of the vaccinated is not essential.

We are also convinced that BCG vaccination is only one of the many measures to be employed for the control of tuberculosis and that other steps such as improvement of the standard of living including better housing, improved sanitation and adequate nutrition are equally necessary. The establishment of institution for the early diagnosis and treatment of tuberculosis, and particularly for the isolation of infected tuberculosis cases is also of great importance. Paucity of funds and lack of trained personnel stand in the way of a rapid advance in the carrying out of these measures and the place of BCG vaccination in the tuberculosis campaign for promoting the resistance of the people against the infection becomes all the more important. We believe that, if wholehearted support is given for the popularisation of this vaccine a very real advance in the control of tuberculosis would be achieved at a comparatively cheap cost. We would at the same time stress the importance of simultaneous adoption of other measures.

It may be noted that even in Western countries with a high standard of living and an advanced state of improved environmental hygiene and better nutrition, it has been found necessary to adopt BCG vaccination as one of the anti-tuberculosis measures to be promoted actively by the Governments concerned. The need for using the vaccine in India as an important measure to supplement other steps taken to fight the disease is all the more important.

WHO EXPERT'S SUPPORT

The following is the statement from Dr. Edgar Mayer, Tuberculosis Expert for the World Health Organisation, South-East Asia Region:

My attention has been drawn to statements in the Indian Press asserting that BCG

vaccination is not being used in the United States of America on an extensive scale because further experiments as to its efficacy and harmlessness have to be carried out. As an American working extensively and intimately in the field of tuberculosis for over 35 years, and as a professor at Cornell University, New York City, having taught tuberculosis for many years, I can state the following.

BCG is perfectly harmless vaccination and cannot produce tuberculosis.

It has been shown in America as in other countries that it markedly reduces the development of tuberculosis and tuberculosis mortality.

It is being regularly employed to-day on a large scale in New York and in many other parts

of the United States. It is not being used in the United States on a still larger scale only because tuberculosis has been kept under control there by other methods introduced into the country, even before the discovery of BCG vaccine.

Conclusions of the World Tuberculosis experts at present are that in highly infected areas such as post-war Europe, India, China, etc. BCG vaccination should be used on a mass scale as one of the most potent agents against fresh tuberculosis infection in non-infected people. The urgency is greater because other measures necessary to the control of tuberculosis cannot adequately be introduced in a short time because of limited resources.

(INDIAN EXPRESS, 28th April, 1949.)

T B INOCULATIONS

On Monday the Bombay Corporation considered a resolution requesting the Commissioner to prepare a scheme for anti-T.B. inoculations on a mass scale. The statistics of the incidence of tuberculosis quoted by the sponsor of the resolution are alarming. About one lakh of people are said to be suffering from this disease in Bombay alone. The facilities for treatment available in the City are also very limited. So mass inoculation is suggested as the best means of preventing the spread of the disease. The drug to be used in these inoculations is BCG Vaccine. The resolution has been sent for report to the Medical Relief and Public Health Committee of the Corporation. The Committee should consider all relevant factors when considering the question. Recently when mass inoculations were started in Madras there were many protests from members of the medical profession. They pointed out that BCG Vaccine was still in an experimental stage and no one could say what its reactions would be. Has anything more been discovered about the effect of this drug since then? Large scale inoculations should be started only after ascertaining full facts.

(THE FREE PRESS JOURNAL, Bombay, dated 11th May, 1949.)

CAN WE GET YOUNGER?

The desire to remain young is universal. Women are spending huge sums annually in beauty parlours not only to improve their appearance, but to check the signs of passing years. Tons of lotions, tonics and creams are used to improve complexions and make hair more attractive. This great campaign to fight the effects of the passage of time is nothing new; it has been carried on for ages. In recent years it was reported that by implanting animal glands by means of a simple operation involving no danger to life, old men could be rejuvenated.

Professor Metchnikoff, a colleague of the great Pasteur, thought that old age was due to the formation of toxins in the intestinal tract, the result of the putrefaction of food residues and body wastes. He was of the opinion that by changing the intestinal flora, the blood stream can be kept free from poisons and thus senility would be postponed indefinitely. He noted that the longest lived people were found in Bulgaria where large quantities of "yougurt" or "Bulgaricus Milk" were consumed. "Yougurt" is prepared by fermenting milk with cultures of "Bacillus Bulgaricus", known as bacillus of long life. When "Yougurt" is consumed, the toxin-producing bacteria are replaced by "Bulgaricus" type, which produce large quantities of lactic acid by fermenting carbohydrate foods and thus prevent the former from thriving. Metchnikoff, therefore, concluded that life can be prolonged by consuming "Yougurt."

In this connection it is interesting to note that the medicinal, cosmetic and food value of fermented milks—"dahi and lassi"—has been mentioned in Hindu scriptures such as the Vedas, long before the Christian Era, as far back as 1500—2000 B.C. The nutritive value of these products is now recognised in this country as that of par excellence.

Many factors contribute towards longevity and help us to remain young. One of them may be

heredity. Diet is one of the most important factors. Others are habits, climate in which we live and the soil in which the food is grown. Science has not discovered the elixir of youth yet. It has, however, revealed some elements that exercise a potent influence upon the human organism and keep it fit and young for a considerable length of time. These substances not only possess the power of neutralising to a certain degree some of the toxins of the body, but also perform the function of activators. It is on these substances secreted by the thyroid, pituitary, superarenal and other glands, that the scientists have been especially directing their attention in their efforts to fight old age. However, the results have been disappointing. Hormones might whip up for a short time some of the vital organs of the body but they cannot remove the degenerated tissue in them nor can they build up new healthy tissues.

The merit of modern science consists in revealing the real causes of senility as well as how the various bodily organs may be kept intact and functioning normally for a maximum length of time. What has been achieved in this respect is much more valuable than the elixir of youth so eagerly sought by the alchemists of the Middle Ages.

Science has shown that the best means of preserving youth and combating old age is not to be found in a bottle or through surgery. The human body, like an automobile, is a machine, but far more complex and delicate than any apparatus ever constructed by man. A good car, if properly looked after, renders service for a long period but breaks down if it is neglected and not cleaned and repaired at periodic intervals. Similarly the life of the human body may also be reduced by abuse, for instance, a young man jeopardises his chances of retaining his youth for a maximum length of time if his dietary does not contain all the elements needed for good nutrition.

His chances may still be reduced by the free use of alcohol, tobacco and meat. Worry and jealousy are also harmful because they stimulate the ductless glands to secrete hormones that poison the body and age it prematurely. Sedentary life predisposes men and women to be subject to a variety of disorders.

Where shall we seek for the fountain of youth? It is folly to look for it in glandular extracts or chemical substances. The onrush of time cannot be turned back. No artificial means can repair the damage to the vital organs on which good health, youth and longevity depend.

Dr. John Harvey Kellog found the best answer to this question and proved the correctness of his hypothesis in his own life. He developed

a system known as the system of Biologic Living. At ninety-one his face was free from the tell-tale signs of old age, was still able to ride a cycle, write books, and direct his charitable enterprises and, in fact, do far more work than many of his associates one-half his age. He believes that the human body is very rarely damaged by work but is worn out by the unnecessary onerous burdens placed upon the heart, liver, kidneys and other vital organs. By the use of tobacco, alcohol, stinging and burning condiments, overeating, especially the free use of meat, and neglecting to remove food residues and body wastes from the body before they have a chance to attain an advanced state of putrefaction, many persons decrease their expectation of life.

(Courtesy—Food and Nutrition)

NIGHTMARE FOR RATS

That much-quoted piece of advice, "Build a better mouse-trap and the world will beat a pathway to your door," finds little favor with Major Gary Bricker of the U. S. Army. The 38 year-old officer recently built a better trap-for rats-but the pathway to his door is still unbeaten.

A trap for rats would appear to be a sure-fire proposition, with the U. S. against the rodents (*Doomed Rats*, SI, August, 1948).

Major Bricker's trap is a multiple-catch device; it can snare any number of rats without rebaiting or resetting. The catch is limited only by the size of the trap's "jail".

It works this way: The rat, scenting the bait, steps through the open door. His weight trips a balance mechanism, shutting the door behind him has another open before him. The frantic rat dashes through it, finds a second compartment. Another balance mechanism slams that door behind him, opening the first door at the same time to lure more unwary rodents.

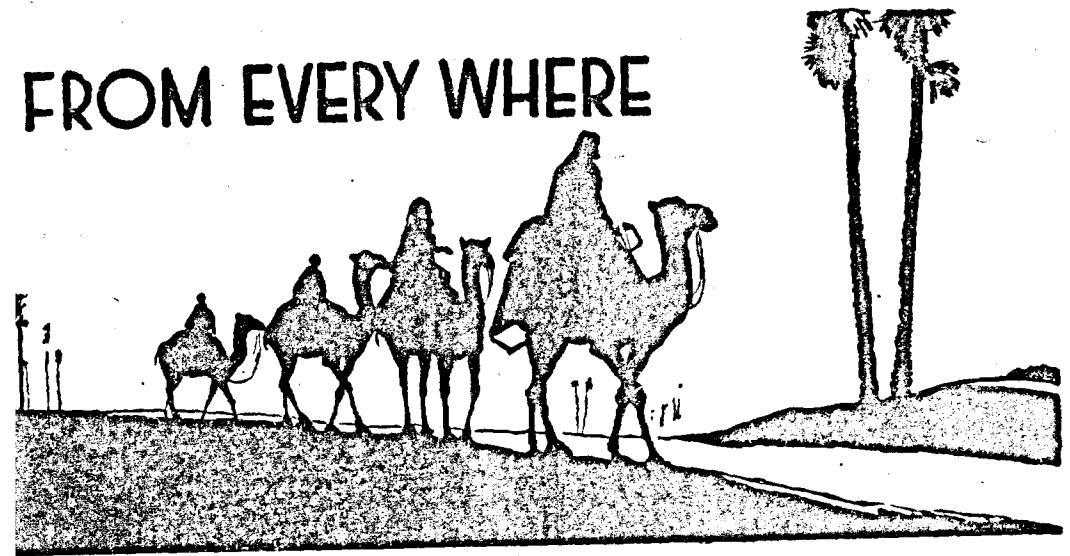
But the original rat, who now must feel it's all a nightmare, has more travelling ahead of him. Prowling around the second compartment, he will find a one-way door which leads him to a larger compartment—the "jail". Here he awaits his friends, and execution by poisoning or drowning. So far, Major Bricker has not found a financial backer. Professional rat killer J. L. Nicholes may have the reason why.

In his book, *Vandals of the Night*, Nicholes writes:—"Rats are suspicious of traps, and very few are caught in this manner". The 83 year-old Nicholes should know. He has been fighting the pests for 35 years, and he claims to have erased 25,000,000.

Nicholes, who conducts rat-killing campaign in cities over 50,000 relies on poison. But the poison must be placed in three different types of bait (meats; fruit and vegetables; cereals and cooked stuff) set out separately. Rats are suspicious of one bait, may be tempted by two, but will climb over each other getting at three.

(*"Science Illustrated," March, '49.*)

FROM EVERY WHERE



WHAT DO THEY SAY ABOUT IT?

Readers can contribute to this section. They are requested to send extracts of current literature which, in their view, would interest the people. —Ed., P.H.

THE HUMAN PROBLEM OF URBAN DISPERSAL

Men are not so much moved by self-interest as they are by the possibility of development. Give them a goal big enough and no sacrifice will be too painful for them to make. For what they need after the first requirements of the flesh are satisfied, is the sense that their work and their days are spent for a good purpose and are ultimately significant.

Spiritually speaking, dispersal is essentially an effort to relieve modern man of his littleness and his helplessness and his insignificance, to restore the human scale, and to enable our whole civilization to find the path to a fuller development. The building of New Towns points to a stage beyond that process: to the creation of a harmonious and self-renewing life in which mankind as a whole will eventually participate. That is the peaceful path for which Ebenezer Howard found the right name: Tomorrow.

(Lewis Mumford in "The American City")

SANITARY AND PHYSIOLOGICAL ASPECTS OF FLOORING MATERIALS

—Joseph M. Dalla Valle.

Public Health Rpts., 55, 1884—1892 (Oct. 18, 1940).

While attempts have been made to relate the health of the individual to the kind of floor construction used in the home, the author feels that the variables involved are so numerous and complex that a direct relation is difficult. Certain sanitary and physiological implications, however, can be evaluated in terms of known physical properties of floor coverings. Dustiness is associated with the rate of disintegration. Fatigue or comfort may be measured in terms of resiliency; coldness by means of heat-transmission co-efficients; noise in terms of acoustical properties. The author includes tables giving the wearing qualities, and the resiliency of different types of floor coverings, together with brief discussions of coldness and noise.

—G. K. HENDRIX
(P. H. Engng. Absts)

WHAT IS PUBLIC HEALTH ENGINEERING ?

The terms Public Health Engineer and Sanitary Engineer have been used synonymously, but there is a growing tendency to differentiate. In the past engineering attention was focussed primarily upon water supply and sewerage as being the vital problems of the cities. Practitioners of these branches of engineering were called Sanitary Engineers. They usually had no connection with the other public health activities of the cities that they served. Later the State Health departments found it necessary to inspect the water supply and sewerage facilities of cities, particularly in the smaller ones, and to correlate water and sewage treatment with stream pollution. To accomplish these aims bureaus of sanitary engineering was set up. The bureaus, however, speedily found a multitude of widely diversified problems confronting them. Some, such as rural water supply and excreta disposal, required the fundamental scientific knowledge of the Sanitary Engineer. Others required engineering knowledge but necessitated additional information before it could be efficiently applied, such as the habits of the mosquito in connection with malaria control work. This greatly widened field has been called public health engineering. It includes, therefore, municipal and rural water supply and sewerage; stream pollution; refuse collection and disposal; the control of various insects, particularly mosquitoes, in the prevention of malaria and yellow fever; industrial hygiene; air-conditioning; plague prevention by rodent control; housing improvement; and their application to certain situations as schools, dairies, swimming pools, and recreation centres.

The preceding description of the field of public health engineering leaves to the Sanitary Engineer only a narrow field of specialization—water supply, sewerage and stream pollution. A practical knowledge of the subjects of public

health engineering is, however, almost a necessity for the present-day Engineer who makes any claim to familiarity with modern sanitary problems.

(Water Supply and Sewerage—By Steel)

NUTRITIVE QUALITIES OF GUR

In these days of "Save Sugar" campaign one is inclined to find substitutes for sugar. In *Gur* or *Shakkhar* there is a good substitute for sugar. Even before sugar was manufactured in India *gur* and *shakkhar* were consumed in large quantities in villages as well as towns. What is more, on the basis of experiments conducted to find out the nutritional value of *gur*, it has been found out that *gur* contains more iron as compared with white factory sugar. It also contains considerable amount of copper. Both of these elements are required to maintain health and vitality and their absence results in the lack of red corpuscles in the blood.

Experiments conducted by Dr. Kalidas Mitar of Patna in feeding animals on *gur* (*jaggery*) have resulted in finding vitamin B1 and B2 in palm *gur* and cane *gur*. Vitamins of B group are essential for growth. It has been found out by experiments conducted in Hawaii that cane molasses is a good source of vitamins B and E and is of value in preventing and curing nutritional anaemia in animals. Other experiments also prove that *gur* is superior in nutritive value to sugar. *Gur is in no sense an inferior food to sugar.*

(Speakers' Digest of the Government of India)

GATHERING GROUNDS: AFFORESTATION

Though the primary purpose of a gathering ground is to collect water for storage, it can be utilised for other purposes as well. Afforestation is considered at all hands to be the most satisfactory method of utilisation of such waste areas as the gathering grounds. The nature of

the soil, of course, governs the possibility of planting trees. Non-utilisation means waste.

"Sheep grazing is held to be the least objectionable form of farming on gathering grounds, but it is not above criticism, for there is always the danger of the catch-waters being polluted by a dead sheep. This contingency may be overcome by fencing and if possible, the additional protection of catch-waters by belts of trees is advisable."

"To ensure that gathering grounds are kept free from pollution the whole area should be in the ownership of the water authority, who is then in a position to enforce its requirements and, if necessary, do away with objectionable habitations or drainage works."

ADVANTAGES OF AFFORESTATION

1. Beneficial to the interests of water supply as regards quantity, quality and regularity. In many instances, it is recorded that measures to promote the growth of forests have led to the increase of the total runoff of the gathering grounds, with a reduction of flooding at times of intense rainfall.

2. Rapid-runoff, resulting in floods, causes to be lost over the spill-way water which would have been retained in the reservoir if the same quantity of water had runoff over a larger period.

3. Floods cause silting and consequent reduction in capacity of reservoirs.

4. Mud and silt from flood waters which remain in suspension may cause filtration troubles.

5. Trees are known to reduce evaporation of water from the soil, but they themselves transpire large quantities which they draw from the soil.

6. Local increase of precipitation of rainfall due to forests has been actually recorded and it has been determined that the effect is much more marked at high altitudes than at low levels. For example, records taken over a period of ten years

from more than two hundred stations in Prussia gave the following figures :

			% excess of rainfall at stations in forest over other stations.
Upto 300 feet	..	..	1.57
330—650	..	..	14.4
780—1,300	..	..	7.3
1,970—2,300	..	..	19.2
2,300—2,600	..	..	43.8
3,000—3,250	..	..	84.5

On high and steep lands forests do most useful work in preventing rapid runoff. Forests reduce the rate of melting of snow, thereby reducing danger of flooding.

The effects of forests on water supplies in low-lying and level country is probably generally negligible.

Detailed descriptions of kinds of trees suitable for growth on catchment areas are given by Augustine Henry in "Forests woods and trees in relation to Hygiene." (1919).

(Regional Planning. By L. B. Escritt)

FLY CONTROL

Of the many species of flies, only a few are implicated in the carriage of disease. Flies spread diseases either mechanically or by inoculation through biting. The former is the method of the house fly while the latter is illustrated by the tsetse fly of Africa which transmits sleeping sickness through its bite. The biting stable fly is an American example of flies which spread disease by biting.

It should be clear to the well-informed health worker that house flies would be of no importance as health menaces if human excreta were disposed of properly, and if flies were excluded from sick rooms and prevented from coming in contact with infectious discharges. Until such conditions have been attained, however, the house fly should be included among the enemies of man.

THE HOUSE FLY AS A DISEASE CARRIER

The house fly, as mentioned before, is a mechanical carrier of disease. That is, it does not bite and therefore cannot inoculate a person directly. However, its hairy body and legs become covered with the filth on which it delights to crawl and feed. This material, which may be infected with pathogenic bacteria, is frequently deposited later on human foods. Furthermore, in the fly's alimentary canal bacteria live unharmed until they are discharged in the excrement or regurgitated in small drops which are known as "vomit spots". When it is considered that the flies which are on the dinner table may have been feeding upon the discharges of tubercular patients or upon human excreta which possibly contained typhoid and dysentery germs, it is apparent that fly control is a matter of importance. This is particularly the case where there is no sewer system.

House flies are also implicated in the spread of small-pox, ophthalmia, and parasitic worms, in addition to the intestinal diseases, enteritis, cholera, and infantile diarrhoea.

(Mun. & Rural Sanitation. By Ehlers & Steel)

THIS PICTURE AND THAT!

One young man, a citizen of this country (America) who graduated from one of our Western Universities, has spent the last six years in India. He points out some fundamental differences:

Whereas most American boys have had some experience in athletic activities before they are given much of a physical education program in the school, most Indian boys of high school age know little about jumping, throwing, running properly, wrestling, handling a ball (except kicking a soccer ball), or other skill fundamentals. Indian boys are much less able to organize activities for themselves. They naturally follow authority and do what they are told without expressing their own desires. They need to be taught to do things for

themselves, start their own games, and taught enthusiasm for sports and physical activity.

Other factors that need to be kept in mind in relation to Indian schools are: (1) equipment available for use in schools is extremely meagre by our standards, (2) Indian boys are smaller on the average than our boys, (3) climate in the summer restricts strenuous physical activity.

General recreational programs are all but lacking except for some sports activities, save in a few foreign schools. Pioneering work in co-recreational activities among school youth is being done. Until very recently activities of this type were greatly frowned upon by Mohammedans and Hindus. There is still much prejudice to overcome in this matter.

This young man, who has seen a great service opportunity in India, hopes to supplement his liberal arts education:

I have not had any training in physical education nor in recreational leadership. All I can claim is an interest, through the years, in this field. I have taught in a mission school here in India but I will return home to America sometime this spring where I hope to get training in physical education and recreational leadership after which I will return to India to work in secondary schools where so much needs to be done.

(The Journal of Health and Physical Education, U.S.A. Vol. 18.)

SANITATION PROGRAMME FOR FOOD HANDLERS

(Univ. Mich. School, P. H. Am. Arbor.)

This paper contains the opening remarks to the representatives of industry and public health in attendance. Mention is made of existing insanitary conditions in restaurants and that the public is aroused. Education should be provided continuously, and the old story given by restaurant operators that personnel move too frequently to be instructed has little foundation. In the author's opinion the weak link in sanitation in the food business is the human element.

(P. H. Engg. Absts.)

Alagappa Textiles (Cochin) Ltd.

Managing Director:

Dr. RM. ALAGAPPA CHETTIAR, Kt., M.A., D. Litt., LL.D. (Bar-at-law)

Alagappa Nagar P.O. COCHIN STATE

40,000 Spindles: (Manufacturing 60s-80s.) 250 Looms with latest bleaching mercerising and finishing Plants

Alagappa Textiles Ltd. ALWAYE (Travancore State)

12,000 Spindles and latest automatic looms and finishing plant to be erected as part of post-war development

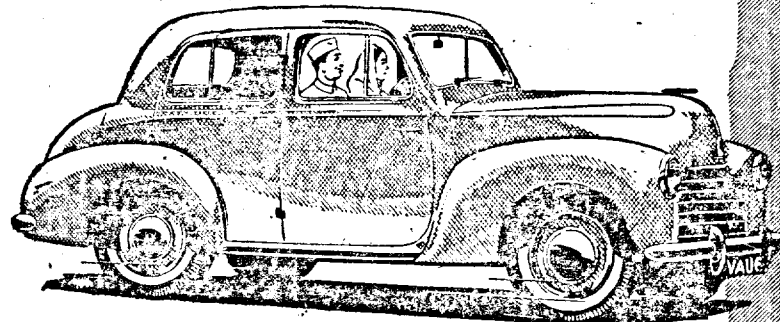
Ravivarma Hospital for the Workmen

ALAGAPPA NAGAR (Cochin State)

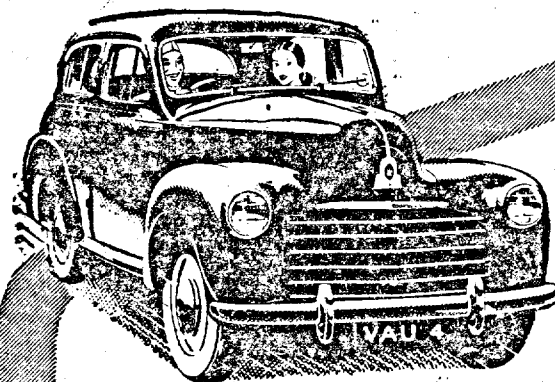
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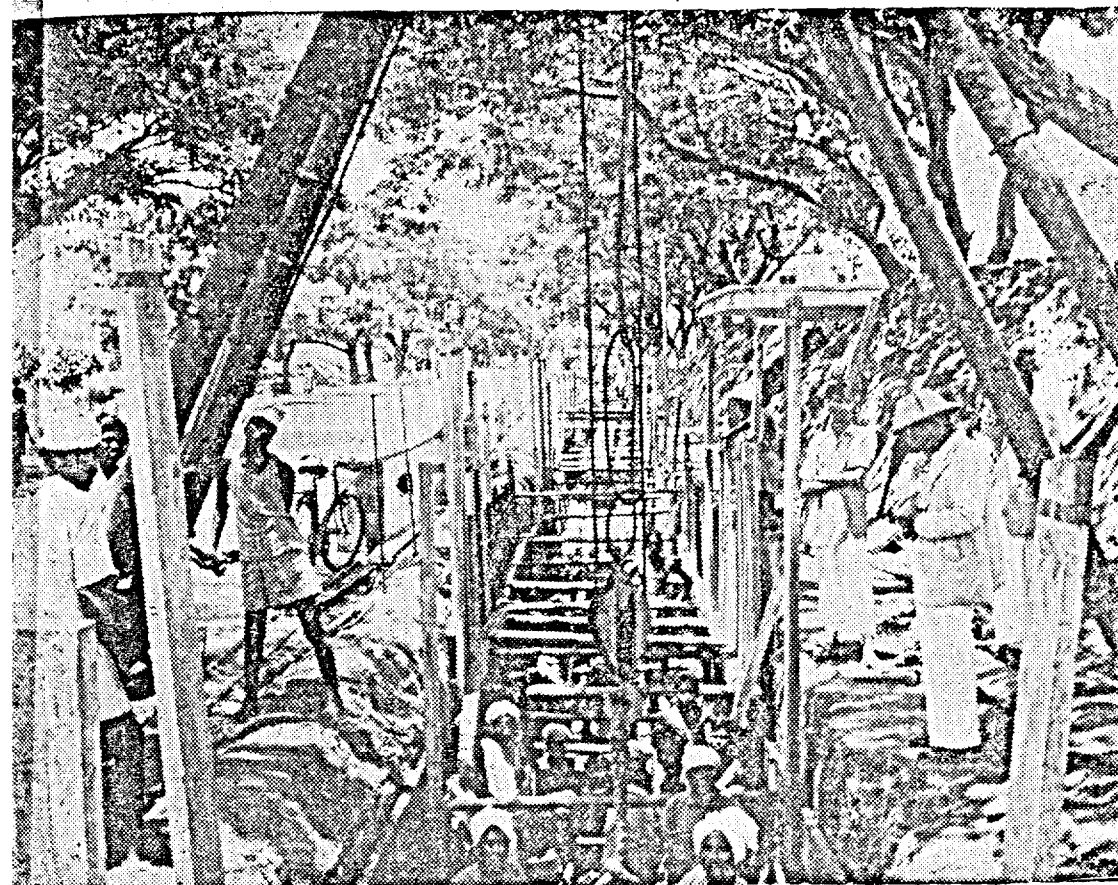
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