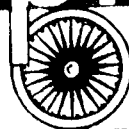


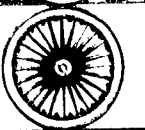
794



People's



Health



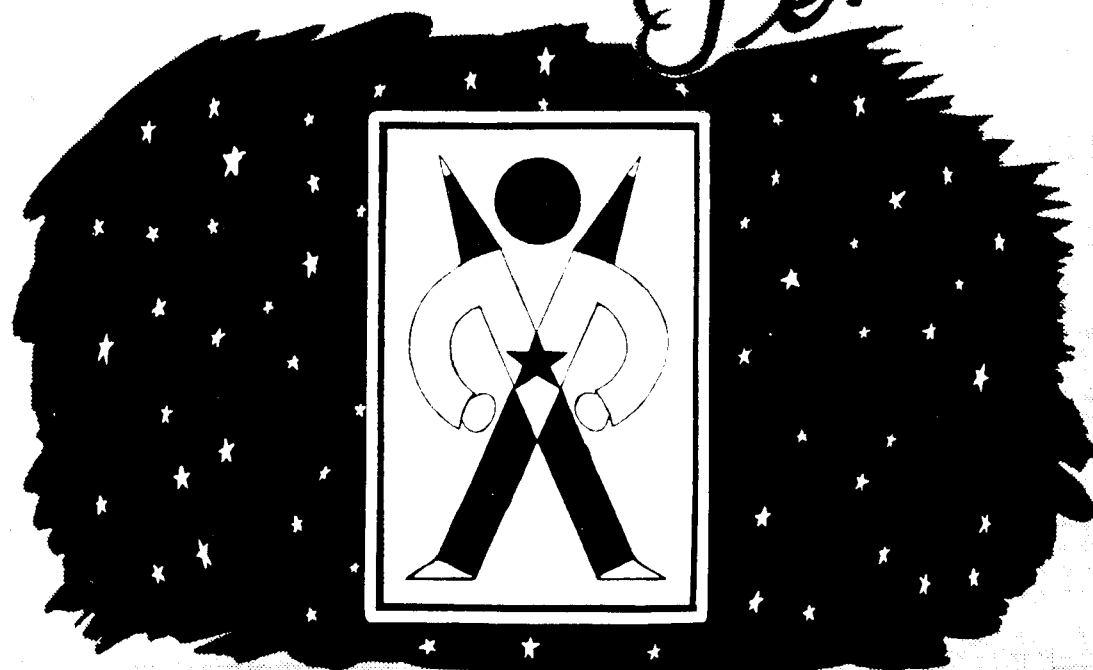
EDITOR: A.V. RAMAN

Vol. II - N



STAR OF INDIA

Pencils



THE MADRAS PENCIL FACTORY • MADRAS

68

Sundaram Motors Ltd.

MOUNT ROAD

MADRAS 2

Dealers in Buick, Vauxhall, Cheverolet

CARS AND TRUCKS

We are running a modern service station.

We undertake

automobile repairs of every description.

We carry a large stock of spare parts.

SPECIALISED SHELL - LUBRICATION

A SPECIALITY

'Phone : 86486, 86487, for Sales and Service—86661 for Spare Parts.'

Use

DDT

FOR THE CONTROL OF
MALARIA

Use

DDT **Geigy** DDT

MALARIA SPRAY

The only original Geigy
Product specially compounded
for the purpose.

For full particulars write to:
GEIGY INSECTICIDES LTD., BOMBAY.

Distributors:
South India excluding Mysore State and Ceded Districts
MESSRS. ADDISON & CO., LTD
MOUNT ROAD — MADRAS

Mysore State and Ceded Districts:
MOHAMED RAHIM
KHALEEL E'sq.,
99-B, OSMAN KHAN ROAD, BANGALORE CITY

Go

Her Health Habit

Adamin

HIGH POTENCY SHARK LIVER OIL

*The rules of health
are simple enough*

A DAILY DOSE OF **ADAMIN** WITH MILK
OR ORANGE JUICE THRICE A DAY

Government Oil Factory, Calicut

Agents for Madras Presidency and Adjacent States **MESSRS. PARRY & CO., LTD., MADRAS**

COTTON YARNS

5,00,000
Spindles

Put to the Highest Test of
Strength and Reliability

Madura Mills yarns have
proved the best by their
outstanding Quality

Counts
upto 80s

MADURA MILLS COMPANY LTD.

MILLS AT

MADURA, TUTICORIN & AMBASAMUDRAM

We supply Grey Yarns of all descriptions for Weaving
and Hosiery Factories. We do no Weaving ourselves.

Our Specialities :

**SINGLE YARNS — DOUBLE YARNS — CHEESE YARNS — WARP YARNS
CONE YARNS — CORD YARNS — COMBED YARNS Etc.**

"As at present, yarn distribution is controlled, application for
yarn requirements should be addressed to the Textile Control
Authorities of your Province or State."

Managers :

A. & F. HARVEY LTD.
MADURA

APPROVED BY GOVERNMENT OF INDIA (I. S. D.)

ENAMEL SIGN BOARDS
HOSPITAL WARE
HOUSEHOLD UTENSILS
— VITREOUS (PORCELAIN) —



Our well Equipped Modern Factory
can meet all the requirements of

ADVERTISERS, MUNICIPALITIES
DISTRICT BOARDS, HOSPITALS
RAILWAYS, ARMY & GENERAL PUBLIC

Madras Enamel Works Ltd.

65, Sydenhams Road - Park Town, Madras
Grams : Enamelsign Phone : 2646

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 Workman

ALAGAPPA NAGAR (Cochin State)

To which is being added a modern Maternity Ward and Baby Creche for Workmen's children



Complete Weaving Unit with Bleaching Mercerising and finishing process, is being set up part of post-war development

“UMAYAL FABRICS”

For QUALITY TEXTILES

ENCOURAGE HANDLOOM INDUSTRY



Manufacturers of :

Best “Umayal” Handloom Fabrics, Bedspreads, Table Linen, Furnishing Fabrics and Curtain Cloths, Dress Materials for Ladies and Gents, Fine Egyptian and Silk Shirtings and Suitings in up-to-date designs and Charming Colours, Turkish Bath Towels, Bath Mats, Bath Gloves, Mufflers, Dhories and Sarees, etc., etc.



Umayal Weaving Establishment, Limited

CANNANORE, N. MALABAR

Distributors :

SRI UMayal STORES

363, AVENUE ROAD — BANGALORE CITY

POWER
INDUSTRIAL FOR PLANNING

GENERATION

STEAM
&
DIESEL

WE OFFER COMPLETE ENGINEERING SERVICE

TRANSMISSION

OVER HEAD
UNDER GROUND
H. V. & L. V.

DISTRIBUTION

OUT DOOR
INDOOR
H. V. & L. V.

EASUN ENGINEERING CO.,
POST BOX NO 95, MADRAS.

AN APPEAL

COMPLAINTS continue to pour into this office about non-receipt of monthly copies of our Magazine and suggesting that the copies are probably pirated in transit. It is utterly impossible for us to despatch copies by registered post, unless the subscribers are prepared to incur extra cost. May we repeat our appeal already issued in these columns that those who are curious to know what 'People's Health' is like but at the same time would not pay for it, would kindly apply to us and we will gladly send them a specimen copy at our cost? Our readers know that 'People's Health' is being published at considerable sacrifice of time, labour and above all money. We therefore hope that subscribers will understand our inability to send duplicate copies free of cost.

To the Postal authorities also, we reiterate our appeal to see that deliveries of Magazines may be checked to prevent miscarriage during transit.

Manager,
"People's Health"
Madras, 14.

PEOPLE'S HEALTH

A Pioneer in the Field of Public Health

Vol. II

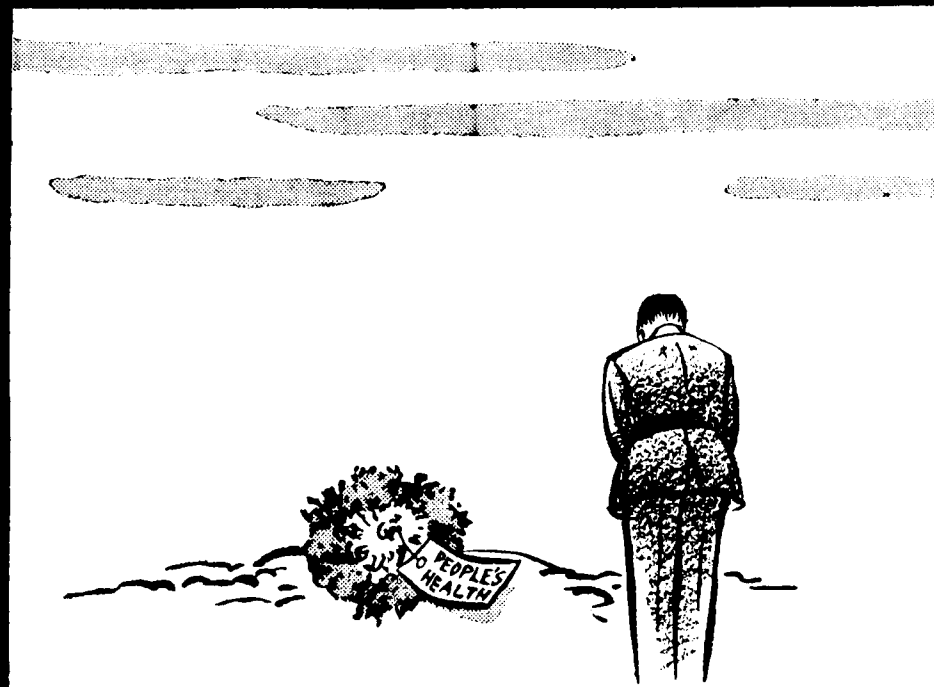
FEBRUARY, 1948

No. 5

CONTENTS

Subject and Author

	PAGE.
Contents	219
Cartoon	220
Editorial	221
Insanitary Gaya—by Mahatma Gandhi	231
Our Sanitation—by Mahatma Gandhi	233
The Ideal Bhangi—by Mahatma Gandhi	235
Volunteer Bhangis—by Mahatma Gandhi	238
Dr. Jivaraj Mehta's Address— Contributed	240
Reclaim Malarial Tracts: Solve Food and Population Problems—by Sonti Dakshinamurthy	244
The 'Herl' Smokeless Stove for the Masses—by S. P. Raju	255
What do they say about it?	263



WE SHALL ENDEAVOUR TO THE BEST OF
OUR ABILITY TO SPREAD THY MESSAGE-
'CLEANLINESS IS NEXT TO GODLINESS'



VOL. II No. 5

FEBRUARY, 1948

ISSUED MONTHLY

EDITORIAL . . . IN MEMORIAM

We take our place in the long and unending queue which has been filing past, paying varied but inadequate, though sincere, tributes to the matchless ministry of MAHATMA GANDHI. What a mighty part he was filling in the national life of the country is beginning to be realised only now in the void created by his disappearance. He seemed in some mysterious fashion immune from the inevitable effects of advancing years and the rigid operation of the eternal ordinances of nature. He had so long been repeating his favourite idea of living up to 125 years or more for the sake of serving humanity that most of us had come to believe in the possibility of it, in the case of one who had demonstrated many other seeming impossibilities during the course of a wonderful and teeming life. Death has taken its toll of the richest prize such as it had

not claimed during a thousand years at least; and not merely our people but mankind as a species forgetting its regional, racial and other distinctions, has joined hearts and hands over the fallen *Mahatma* in silent and reverential homage.

THE BHANGI OF BHANGIS

Our tribute necessarily is in terms of the service which we have undertaken to render to the community in our own humble way. It is as a *sanitarian* that we mourn the passing of the greatest sanitarian of all time. Of Mahatmaji's pregnant pronouncements on the varied subjects of public health, personal hygiene, *Brahmacharya*, environmental sanitation and all other related topics, there are too many instances to be exhausted in the present context. Suffice it to say that his encyclopædic genius, is testified to

by the suggestiveness and inspiring character of his utterances or exhortations on the question of people's health. In the constructive programme which he frequently emphasized on and commended to us with tireless zeal on every occasion, he gave a high place of honour to the role of the 'bhangi'. He used the term 'bhangi' not only to convey the humble and usually despised scavenger who cleans our streets and our backyards, but also the scavenger who keeps the social organism purified *externally* as well as *internally*. He gloried in calling himself a 'bhangi of bhangis' very much after the manner of the Pope styling himself 'the servant of servants.'

ETHICS OF SANITATION

Not content with the theoretical exhortations to others to go and do certain things, he practised what he preached and in many of the Congress gatherings of earlier years, he was the Captain of Volunteers in charge of *conservancy arrangements*. He gave it high priority and precisely for the reason that it was looked down upon with contempt and disgust by everybody else. In fact, he went to the extent of claiming *that the whole series of vital changes in the body politic could be brought about only by emphasising the function of the 'bhangi' as integral to the activity of every individual in society.*

For, according to *Mahatma Gandhi*, the basis of all enduring reform is a change of heart, a real conversion born of the bright glow of inner conviction, recognition of the God-head in each individual however lowly, and the brotherhood of all mankind on the basis of an unfailing and abounding humanity. *No one, according to the MAHATMA, could claim to be a reformer until and unless he was himself reformed.* And so, it was, that he raised the entire question of people's health to the plane of an ethical responsibility cast upon the more enlightened and missionary-inspired members of society.

CONGRESS AND CONSTRUCTIVE PROGRAMME

It is a sad confession to make that, notwithstanding his persistent and moving advocacy of the cause of public health during thirty years, there is hardly that measure of progress achieved around us which one has a right to expect. The truth is that amidst the excitements of his political platform, the great bulk of his followers paid but lip service to his fundamental doctrines. To him what mattered in the entire struggle for *Swaraj* was its ethical and spiritual implications. To his followers what mattered was the opportunities for aggrandisement, scramble for power and the search for safe places which *Swaraj* spelt for them.

Consequently, the results that he hoped for did not materialise on the scale and to the extent that his wholehearted devotion to the cause merited.

CONTENT OF SWARAJ

The truth was that the *Swaraj* which came to us on the 15th August was the result of a 'palace revolution' and not of the people's revolution. The MAHATMA dedicated his life to the promotion of a people's revolution and not of a palace revolution. That is the reason why ever since the dawn of freedom, *Mahatma Gandhi* lived as a stranger in his own country, distressed by the developments which were contrary to his life-long convictions or which were a denial of the things which he cherished. Orthodox, official Congress leadership and following are still bemused with wrong or perverse gradations of priorities. No Provincial Government or even the Centre has yet tackled the question of people's health in a comprehensive, radical or rational spirit. First things are *not* being put first. The result is that we still continue to be a C-3 Nation, although provided by Nature with the means of becoming an A-1 people.

GANDHIJI : OUR BEACON-LIGHT

Mahatma's constructive programme is still there for us to follow and fulfil if only we settle down to the perfor-

mance of unspectacular tasks involving dogged patience and devotion to the ideal which the *Mahatma* visualized. May we not hope that, at least after his death when his voice will no more be heard by us, to warn or cheer us, to encourage or exhort us, we may heed the categorical exhortations which he has formulated for our guidance for all time?

The *Mahatma* is one of the great phenomena of the higher life of humanity occurring at uncertain intervals, unpredictable, mysterious, like the wind that bloweth whither it listeth. It has been the sad and repeated experience of mankind to fail to capitalize the inspiration furnished by its great men in season. It is the same old truths that are repeated by our *Avatara Purushas* or incarnations or saviours or helpers of mankind. For they come to fulfil a cosmic purpose, as often as fundamental truths stand in need of restatement. It is not claimed for the *Mahatma* that he taught us anything new; but it is his glory that he has enabled us to realise old truths in new and fruitful modern contexts. Wherefore let everyone who claims to follow the MAHATMA or who exhorts others to follow the MAHATMA, remember that he might begin with this two-fold purification of himself internally and externally and win the approval of the spirit of our departed

leader that we are worthy of the praise of being approved 'bhangis' in his view.

MAHATMAJI'S MANY-SIDED ACTIVITIES

Of all Mahatmaji's many-sided activities, we can only make brief references to his role as a tribune of the people, as an educationist, as a social reformer, and as a spiritual force.

No one in modern times, has been the leader of so many millions, and no one has swayed not merely the thoughts and feelings but the conduct and personal lives of such large numbers transcending caste, creed, clime and clan. Whence came such prodigal power? Evidently, *Mahatmaji* was one of the children of Light and he is a world-leader common to all mankind. He has sometimes been ambiguously praised as a Hindu, but it is not his Hinduism in any narrow sense that made him great, but the universal elements in Hinduism which were separated by him from their age-long impurities and accretions, and set forth in its pristine purity which captured the imagination of the world.

AS AN EDUCATIONIST

He will go down to posterity as the creator of a new conception of Education based on logical and psychological factors. What is popularly

known as the 'Basic scheme' was his answer to the question *how to relate education to environment*. He was, concerned with the *Indian environment* which is predominantly rural and with a populace which is predominantly illiterate, and he devised a system by which to make education utilitarian, liberating and evocative of the resources of human personality at its best. There is no hope of universal education in this land being accomplished within a measurable distance of time without depending upon his conception of a basic system of education.

AS A SOCIAL REFORMER

As a Social Reformer, he had a double function to fulfil. He sought to emancipate us from the superstitions and idolatries of modern civilization no less than from a blind acceptance of the stagnations and obscurantisms of our effete social code. He stood for social justice on an impressive moral plane which renders his advocacy of the cause of the under-dog more inspiring than is found in communism. He is the saviour and vivifier of Hinduism under modern conditions; for, but for his single-handed action in espousing the cause of *Harijans* in this land, there would have been an irreparable disaster which might have engulfed us in these last 20 years. In salvaging *Harijans* and making them

honoured members of the Hindu fold, he was really injecting new life to the Hindu body politic. Temple-entry, a peculiar expression of his zeal for the *Harijans*, was ignorantly under-estimated by those who failed to realise that man lives not by bread alone but by virtue of spiritual sustenance as well. The exclusion of the *Harijans* from the temples was a particularly offensive manifestation of the arrogance and Pharisaism of the upper classes, and by breaking this wall of separation he saved both the oppressor and the victim from utter annihilation.

AS A SPIRITUAL FORCE

It is the fashion in these enlightened modern days to speak as if mankind has lived down the necessity for God and for religion. Science is supposed to have taught us all, and there is a feeling abroad that materialism is the new theory or new revelation which explains and reconciles all the mysteries of existence. But it was the peculiar function of *Mahatmaji* to recall us to the fundamental urge in all of us to some sort of mystic union with the unknown. He was not himself a mystic in the sense of one who indulged in abstruse speculation. In the earlier days he was fond of claiming to be a practical mystic, but when he grew and became more and more involved in his ministry, he discovered ancient

truths which are at the root of the entire world. He discovered the potency of *Bhramacharya*, he taught us the lessons of self-control, he insisted on every one subjecting himself to rigorous self-examination, and if need be, to undertake pitiless public confession; and here as elsewhere he set a supreme example, for no one has confessed in our time so often and so publicly as he! Through his errors, no less than through his successes, he not only advanced the cause of his own spiritual progress but gave us the courage to go on our journeys undaunted by failures.

Above all, he was the living embodiment for our time of the ideal of the *Gita*, the *Karma Yogin*. No one laboured for social well-being and the salvation of mankind with more zeal, no one was more utterly detached from what he did and the fruits thereof. Hence it is that through the virtue of what he laboured to achieve, he has endeared himself to us for all time.

AS A JOURNALIST

Amidst our pre-occupations with the great things for which *Mahatma Gandhi* stood, let us not forget the fact that he was *par-excellence*, an ace journalist of his time, for his were the biggest coups, and he alone knew how to hand them out as 'hot news'. Mr. John Gunther praises him for

being a master-showman, but he achieved the most resounding of his successes with the greatest degree of self-effacement. While the whole world spot-lighted him, he was centred on issues or problems outside himself. He nursed the Indian and the foreign press with a single-minded devotion to the cause which has no parallel.

From another point of view, his contribution to the ethics of journalism must also be mentioned in this connection. In an age of mammoth circulation, when newspapers are bought by the million, not so much to be read as to be looked into for a minute or two, *Gandhiji* stood for a single-sheet newspaper which demanded *study* from beginning to end. When he started *Young India*, he broke fresh ground; for he announced in advance his determination not to subsist on a single advertisement but to make the journal the vehicle of his views. Such sublime egoism sprang from an equally sublime trust in a following who came forward to sustain his venture through the most romantic period of Indian political history. Without any of the aids of modernism, without any of the lures of the entertainment paper, without any of the attractions of illustrations, lay-out, streamer-headlines, he still made *Young India* one of the best-sellers of its time. As he became more

and more a world figure, the more did he stand majestically independent of all artificial aids; he propagated his cause with the zeal of a missionary, uncontaminated by any taint of monetary considerations. First *Young India* and later on *Harijan* and its vernacular equivalents became the exponents of *Gandhism* to ever-widening circles of his faithful followers. From his example, we may easily draw the conclusion that through faith even in modern times, we can move mountains. In this case, he built up a mammoth circulation by sheer force of individual convictions.

AS AN ENGLISH WRITER

Gandhiji's place among Indian writers of English is very high. He is our greatest master of the simple style, deriving all its force from inner conviction, clarity of thought and serenity of spirit. In the earlier days, there was a trace of legalism now and then in his phraseology. But as it was said of *Christ*, so could it be said of him that, with increasing grip over himself, he spoke not like the scribes and pharisees, but like one deriving his authority from God himself. There are single pieces of a sustained or subdued earnestness and feeling which were at once spontaneous and finished and which were often dictated amidst the hurly-burly of his stormy career.

We may refer specifically to the reply he gave to the poet *Tagore* over the vexed question of burning foreign goods. The statement which he made at the Round Table Conference when, in an inconspicuous context which then went by unnoticed, he made the remark that he would resist with his life the attempt to separate the *Harijans* from the Hindu community, may also be mentioned. When later on, he announced his fast unto death, his critics complained that such a surprise decision was most unfair to the British Government, he then drew attention to his speech made at the Round Table Conference quoting specially the crucial sentence "I will resist with my life, if need be, such a decision." The fact was that what other people took to be a figure of speech at the time and even later, was a plain statement of intentions so far as he was concerned. That is the measure of the man. He never used an idle word, nor cared for ornamentation as such. It is said of *Swift* that he was one of the supreme writers of English who depended least upon figures of speech and such other aids. It may be said in the same manner that there are few similes found in *Gandhiji's* utterances and hardly any metaphors. It is only people who are picturesquely inclined, whose ideas are nebulous, who would struggle through approximations, equations and

comparisons to convey their ideas, but not so masters of thought. By virtue of such mastery also, they become masters of style. For it may be said of *Mahatma Gandhi* more truly than of many others to whom it is often applied that the style is the man.

THE LIGHTER SIDE

On the lighter side, whole volumes may be filled with stories of *Mahatmaji's* sense of humour, of his humanity, of his love of children, of his condescension, of his power of putting all sorts of people at ease, and of his fine sense of tact. Like all other great men, specially spiritual leaders, he was very fond of children. It was not a pose or affectation, but was a tangible illustration of his ability to shake off the burden of his years, and voluntarily enter into the thoughts and outlook and feelings of children. To vary what the poet said: he was like a full-blown rose with the rare power of becoming a bud anytime he wanted!

Of his humour there is the well-known story of a representative of "The Times" meeting him during his London stay and asking him, amused at his 'half-nakedness'. "Is that the fashion in your country?" *Mahatmaji* replied with his inimitable laughter and dazzling spontaneity, "In your country 'plus fours' is the fashion; in my country it is 'minus fours'!"

Of his dignity recalling that of Kings is the well known story of King George V trying to engage him on a political topic at the party given at Buckingham palace, when Mahatmaji with exquisite breeding replied that he would not presume to discuss politics with his Majesty.

Of his kindly admonition, we may mention the story of the late Mr. T. Audinarayana Chettiar of Salem. Welcoming *Mahatmaji* to his house, Mr. Chettiar the proud parent of a baby, born after 20 years, presented the baby to *Mahatmaji*. *Mahatmaji* took it in his arms, and as though feeling the weight of the baby said, "I wish you had given me this weight of spun yarn!". From this, we may infer how the remark must have been made at a time when *Khadi* was still poo-poohed.!

WHAT MEMORIAL?

In view of the utterances of *Mahatma Gandhi* himself and other Congress leaders, it is urgently necessary to focus attention on the need for crystallising public opinion on this momentous question in such a manner that the claims of sentiment, utility and patriotism may be rationalised and harmonised.

The wishes of the *Mahatma* himself are bound to have the most respectful consideration of all of us; with many,

they will have a mandatory effect. But it must be acknowledged that few of us are likely to arrive at that level of self-forgetful austerity which he was capable of. Notwithstanding the most vehement denunciations of useless expenditure on statues and temples which we may indulge in, it is to be acknowledged that a certain number of them will inevitably make their appearance in the coming years. But those of us who are moved by somewhat impersonal considerations must second the efforts of Babu Rajendra Prasad, and promote by all means in our power, the emergence of a *Gandhi Institute* endowed with funds on such a generous scale as to make it possible for it to initiate and sustain in perpetuity, activities which were dear to the heart of the *Mahatma*. While on the cultural and intellectual plane, a codification of *Gandhism* and propagating them in all Indian languages should obtain top-priority, it is no less important for the establishment of *Gandhi centres*, in which individual and social life is lived in the Gandhian way. There are aspects of *Gandhism* which have an intensely social and constructive significance, specially in relation to under-privileged and down-trodden sections of society. During his life-time, the *Mahatma* has already given us a pattern in the Kasturba Trust which provides us with a norm

not so much for imitation as for intelligent adaptation. Sanitation, rural water-supply, housing specially in urban parts, urban labour and education are the spheres in which purely governmental machinery cannot be expected to achieve the maximum good. In all these spheres, non-official agencies must supplement the work of Government departments. As these require funds and as they can well take up the lion's share of the ameliorative work that is waiting to be done, we hope that the *Gandhi Institute* will function as the parent body to which affiliated organizations devoted to service of various kinds as outlined above might look up for light and leading, as well as for trained personnel.

In England for instance, there are a multiplicity of charitable organizations of great antiquity and unrivalled prestige, all of which started originally from individual benefactions. The entire hospital system of England up to date is organized on a non-official, voluntary basis. The Jubilee of His Majesty King George V was marked by raising subscriptions utilized for social services which have spread throughout the country. Similarly, over and above all other activities of the *Gandhi Institute*, we suggest that one single enduring reform on an All-India basis should be sponsored by it, so that the inwardness of

Gandhiji's life may be brought home to every man, woman and child in the land. We cannot have a better objective fulfilling all these conditions than a system of protected water-supply for the entire country. The greatness of such an undertaking alone would appropriately symbolise the greatness of the memory we wish to perpetuate.

STOP THIS VULGARISATION

One of the most unfortunate manifestations of commercial greed in our country has been the desolating miscellaneousness with which the names of our revered leaders have been used by business people as trade marks or other advertising slogans. We refer to such painful eye-sores as *Gandhi Beedies*, or *Gandhi snuff* or *Gandhi Tobacco*, *Nehru Clubs*, *Nehru Hotels*, and the desecration of the national flag by the inscribing of so and so's snuff or so and so's condiments across its tri-colour. It is humiliating to refer to these things in public, but such public manifestations are going on without any attempt made to put an end to them.

We remember one historical occasion when *MAHATMA GANDHI* himself deplored in his inimitable style such vulgarisation and improper exploitation of mass veneration for popular leaders. The appeal to the good sense and forbearance and reticence of the

offenders has not produced the results hoped for. We now make an appeal to the Governments-both Provincial and Central-to take steps to see that at least the name of *Mahatma Gandhi* is not associated with any kind of degrading, common place or objectionable commodity or trade. We must draw the line somewhere, and the sooner we do so in this case the better.

At the same time we wish to appeal to the members of the public themselves, who, we are sure, feel in this matter as we do, to use all their individual powers of boycott, non-co-operation, etc., to see that this scandal is wiped out in the shortest possible time. We suggest for instance that no one should patronise a hotel in which the National Flag is used for dusting the tables or where the portrait of *Gandhiji* is printed on the wrapper of packets and so on. This is another way in which the greedy could be taught a lesson, and the cheapening of revered names could be put an end to.

AN APPEAL

Though the purposes underlying this journal are primarily propagandist

in relation to all matters pertaining to people's health, we have decided to dedicate ourselves, in addition, to collating and popularising to the utmost extent possible to us, the views and opinions and pronouncements of *Mahatma Gandhi* on all aspects of public health, sanitation and rural well-being and the like which he made integral features of his constructive programme; for alone, among all our leaders, MAHATMA GANDHI stood for promoting people's health in many positive ways, unlike the governments which have too long been committed to adopting a negative or passive attitude in tackling problems of positive health.

We therefore appeal to all our readers to send us extracts or quotations or references from *Mahatmaji's* utterances dealing with all the aspects of public health, personal hygiene, sanitation-individual and communal and the maintenance of a healthy environment all around us. Our aim is not only to publish them in this journal but also to gather them in a volume in due course.

INSANITARY GAYA

by

MAHATMA GANDHI



I have no desire to advertise the insanitation of Gaya, a prince among the holy places of Hinduism. It was because my Hindu soul rebelled against the stinking cesspools I saw in a principal street of Gaya that I was obliged to draw pointed attention to it in my reply to the address of the Gaya Municipality. I am aware that there are many holy places which are insanitary enough. But I do not remember having seen anything like what I saw in Gaya. It is possible that I have not been taken to the dirty places in other sacred places. But insanitation need not be weighed in golden scales. Gaya, I am using merely as an example in order to draw the attention of all municipalities that sanitation of their cities must be their first care. This one thing must be above municipal politics, parties and intrigues. Just as it must

be the care of every party in a municipality to keep its finance pure and above suspicion, so must it be the sacred duty of every party in a municipality to keep the sanitation of its city in perfect order and above suspicion. Every municipality should constitute itself a model school for teaching the science of sanitation. Of city sanitation we have not yet much knowledge. We do not mind what happens to our neighbours, so long as our own houses are in fair order. We do not know the use of city latrines. We do not know how to use our drains. It has to be admitted therefore, that our municipalities have an arduous task before them in handling this great and important problem. But handled it must be whatever the difficulties. It becomes much more important in sacred cities which are visited by lacs of people

from year to year. There was no reason for the foul cesspools I noticed in Gaya. There is no reason why people should be allowed to dirty river banks. There are many things which municipalities can, if they will only treat the cities under their care as if they were their own houses, remedy without much difficulty or hindrance from the citizens.

But the difficulty comes from within. Municipal councillors are often indifferent and sometimes obstruct their own elected chairman. *Sometimes they are absorbed in internal quarrels and neglect sanitation. It is high time that we developed a healthy sense of civic duty.* In this matter we have much to learn from the West. People

of the West are builders of big cities. They know the value of fresh air, clean water and clean surroundings. *Any city that would attend to its sanitation in a proper spirit will add to both its health and wealth.* Sacred cities ought to lead the way in this matter. They have opportunities which other cities do not possess. There is a great deal of wisdom in the English proverb 'Cleanliness is next to godliness'. *Manu, Moses and Mahomed* have laid down laws of sanitation suited to their times. These have to be elaborated in keeping with the modern requirements. It is enough to know from these ancient law-givers that they held cleanliness to be part of a truly religious life.

(From "Young India," 3rd February, 1927).

VILLAGE SANITATION

Divorce between intelligence and labour has resulted in criminal negligence of the villages. And so, instead of having graceful hamlets dotting the land, we have dung heaps. The approach to many villages is not a refreshing experience. Often one would like to shut one's eyes and stuff one's nose; such is the surrounding dirt and offending smell. If the majority of Congressmen were derived from our villages, as they should be, they should be able to make our villages models of cleanliness in every sense of the word. But they have never considered it their duty to identify themselves with the villagers in their daily lives. A sense of national or social sanitation is not a virtue among us. We may take a kind of a bath, but we do not mind dirtying the well or the tank or the river by whose side or in which we perform ablutions. I regard this defect as a great vice which is responsible for the disgraceful state of our villages and the sacred banks of the sacred rivers and for the diseases that spring from insanitation.

("CONSTRUCTIVE PROGRAMME"—Its Meaning and Place—By Mahatma Gandhi.)



OUR SANITATION

by

MAHATMA GANDHI

During my wanderings nothing has been so painful to me as to observe our insanitation throughout the length and breadth of the land. I do not believe in the use of force for carrying out reforms, but when I think of the time that must elapse before the ingrained habits of millions of people can be changed, I almost reconcile myself to compulsion in this, the most important matter of insanitation. Several diseases can be directly traced to insanitation. Hookworm for instance, is such a direct result. Not a single human being who observes the elementary principles of sanitation need suffer from hookworm. The disease is not even due to poverty. The only reason is gross ignorance of the first principles of sanitation.

These reflections arise from the abominations I saw in Mandvi. The people of Mandvi are not poor. They

cannot be classed as ignorant. And yet their habits are dirty beyond description. Men and women dirty the streets that they walk on with bare feet. They do this every morning. There is practically no such thing as a closet in that port. It was with the greatest difficulty that I was able to pass through these streets.

Let me not be hard on the poor inhabitants of Mandvi. I know that I saw nothing better in many streets of Madras. The sight of grown up people lining the river banks and after the performance proceeding with criminal thoughtlessness to the river and cleaning themselves in it and injecting into its sacred water typhoid, cholera and dysentery germs, has not yet faded from memory. This is the water that is used for drinking. In the Punjab, we violate God's laws by dirtying our roofs and breeding millions

of flies. In Bengal the same tank quenches the thirst of man and beast and cleanses him and his pots. But I must not continue this description of our shame. Seeing that it is there, it would be sinful to hide it. But I dare not carry it any further, I know I have underdrawn the picture.

I would urge the enterprising people of Mandvi to lead the way in model sanitation. Let them, whether the State help them or not, call in a specialist and spent money in improving their sanitation so as to make it perfect. 'Cleanliness is next to godliness'. *We can no more gain God's blessings with an unclean body than with an unclean mind. A clean body cannot reside in an unclean city.*

Let us not put off everything till Swaraj is attained and thus put off Swaraj itself. Swaraj can be had only by brave and clean people. Whilst the Government has to answer for a lot,

I know that the British Officers are not responsible for our insanitation. Indeed, if we gave them free scope in this matter, they would improve our habits at the point of the sword. They do not do so, because it does not pay. But they would gladly welcome and encourage any effort towards improved sanitation. In this matter Europe has much to teach us. We quote with pride a few texts from *Manu* or if we are Mussalmans from the *Quran*. We do not carry even these into practice. Europeans have deduced an elaborate code of sanitation from the principles laid down in these books. Let us learn these from them and adapt them to our needs and habits. *How I would love to see not ornamental but useful sanitary associations whose members will deem it a privilege to take up the broom, the shovel and the bucket. Here is great national work for school boys, school girls and collegiates all over India.*

(From "Young India," 19th November, 1925.)

EFFICIENCY SQUAD OF WORKERS

I suggest that at least the Congress provinces have a model and novel legislation constituting municipal, local and district boards on the basis of efficiency. I would have them elected, but there would be very few men and women capable of doing administrative plodding work. Each one of the members will have his work cut out for him. I should impress the services of paid officials side by side with the elected members who will be at once their masters and co-workers. This is but the barest outline of Boards of my notion.

(From *Harijan*, 24th December, 1938—By Mahatma Gandhi.)



THE IDEAL BHANGI

by
MAHATMA GANDHI

The ideal *Bhangi* of my conception would be a Brahmin *par-excellence*, possibly even excel him. It is possible to envisage the existence of a *Bhangi* without a Brahmin. But without the former the latter could not be. It is the *Bhangi* who enables society to live. A *Bhangi* does for society what a mother does for her baby. A mother washes her baby of the dirt and insures his health. Even so the *Bhangi* protects and safeguards the health of the entire community by maintaining sanitation for it. The Brahmin's duty is to look after the sanitation of the soul, the *Bhangi's* that of the body of society. But there is a difference in practice; the Brahmin generally does not live up to his duty, the *Bhangi* does willy-nilly, no doubt. Society is sustained by several services. The *Bhangi* constitutes the foundation of all services.

And yet our woebegone Indian Society has branded the *Bhangi* as a social pariah, set him down at the bottom of the scale, held him fit only to receive kicks and abuse, a creature who must subsist on the leavings of the caste people and dwell on the dung-heap. He is without a friend, his very name has become a term of reproach. This is shocking. It is perhaps, useless to seek the why and wherefore of it. I certainly am unaware of the origin of the inhuman conduct, but I know this much that by looking down upon the *Bhangi* we—Hindus, Mussalmans, Christians and all—have deserved the contempt of the whole world. Our villages have to-day become seats of dirt and insanitation and the villagers come to an early and untimely death. If only we had given due recognition to the status

of the *Bhangi* as equal to that of a Brahmin as in fact and justice he deserves, our villages to-day no less than their inhabitants would have looked a picture of cleanliness and order. We would have to a large extent been free from the ravages of a host of diseases which directly spring from our uncleanness and lack of sanitary habits.

I therefore make bold to state without any manner of hesitation or doubt that not till the invidious distinction between the Brahmin and the Bhangi is removed, will our society enjoy health, prosperity and peace, and be happy.

What qualities should such an honoured servant of society exemplify in his person? In my opinion, an ideal *Bhangi* should have a thorough knowledge of the principles of sanitation. He should know how a right kind of latrine is constructed, and the correct way of cleaning. He should know how to overcome and destroy the odour of excreta and the various disinfectants to render them innocuous. He should likewise know the process of converting night-soil and urine into manure.

But that is not all. My ideal *Bhangi* would know the quality of night-soil and urine. He would keep a close watch on these and give a timely warning to the individual concerned. Thus, he will give a timely notice of

the results of his examination of the excreta. That presupposes a scientific knowledge of the requirements of his profession. He would likewise be an authority on the subject of disposal of night-soil in small villages as well as big cities and his advice and guidance in the matter would be sought for and freely given to society. It goes without saying that he would have the usual learning necessary for reaching the standard here laid down for his profession. Such an ideal *Bhangi* while deriving his livelihood from his occupation, would approach it only as a sacred duty. In other words, he would not dream of amassing wealth out of it. He would consider himself responsible for the proper removal and disposal of all the dirt and night-soil within the area which he serves and regard the maintenance of healthy and sanitary condition within the same as the *summum bonum* of his existence.

How may we have this ideal *Bhangi*? Only when we have produced an army of *Appa Patwardhans*. To clothe the *Bhangi* with the dignity and respect due to him is the especial task and privilege of the educated class. Some members of the class would first themselves master the science of sanitation to educate the *Bhangi* round them in the same. They would carefully study their present condition and the causes underlying it and set themselves to

the task of eradicating the same by dint of inexhaustible perseverance and patience that never looks back and knows no defeat. They would teach them the laws of cleanliness. Our *Bhangis* do not today possess even good brooms or other suitable means for the removal of night-soil. The latrine themselves are wretched. The site round the *Bhangis'* quarters is no better than a cesspool of dirt. *All this can only go if some of the educated class give themselves up to the task of redeeming the Bhangi from his present plight and thus redeeming society from its terrible insanitation. Surely this is work enough to satisfy the highest ambition of one who has the spirit of service in him.*

(From *Harijan*, 28th November 1936.)

MOBILIZE MAN-POWER FOR SERVICE

If I were a tax-payer, within the jurisdiction of a local board or a municipality I would refuse to pay a single pie by way of additional taxation and advise others to do likewise unless the money we pay is returned four-fold. Those who enter local boards and municipalities as people's representatives go there not to seek honour or to indulge in mutual rivalries, but to render a service of love, and that does not depend upon money. Ours is a pauper country. If our municipal councillors are imbued with a real spirit of service, they will convert themselves into unpaid sweepers, *bhangis* and road-makers, and take pride in doing so. They will invite their fellow-councillors, who may not have come on the Congress ticket, to join them, and if they have faith in themselves and their mission, their example will not fail to evoke response. This means that a municipal councillor has to be a whole-timer. He should have no axe of his own to grind. The next step would be to map out the entire adult population within the jurisdiction of the municipality or the local board. All should be asked to make their contribution to municipal activity. A regular register should be maintained. Those who are too poor to make any money contribution but are able bodied and physically fit, can be asked to give their free labour. Real India consists not of a few big cities and our Presidency towns, but of seven lakhs of villages. It is there that the real problems of India have to be faced and solved. *We require better roads, better sanitation, better drinking water supply for our villages. We shall never be able to get through even a fraction of this stupendous work if we proceed on a money basis. But India has an inexhaustible reserve of man-power. If we can mobilize that, we can transform the entire look of the country in an incredibly short time.*

(From *Harijan*, 18th February, 1939—By Mahatma Gandhi.)



VOLUNTEER BHANGIS

by
MAHATMA GANDHI

Let not the word *Bhangi* frighten any reader as it does many. *Bhangi* is probably the most useful member of society. Its health depends more upon proper sanitation than perhaps on proper food. Needless to say I am not thinking of the *Bhangi* caste. I am thinking purely of the occupation that the word '*Bhangi*' connotes. I regard the scavenger's or the cleaner's as noble 'profession', nobler than the professions known as 'honourable'. They may easily become dishonourable; this never can.

Well, Shri Appa Patwardhan who is an M.A. has become commander of a corps of volunteer *Bhangis* which he is trying to form for attending to the sanitation of the Congress camp at Faizpur. The issue before the Reception committee was whether to employ

professional *Bhangis* or to have the sanitation attended to by volunteers. Someone pointed out that at the previous Congress the work was done by the town *Bhangis*. But the volunteer scheme won the day. The task could not have been allotted to fitter hands. Appasahab has qualified himself for it by long previous training and, what is more, by his love of the most despised members of society. His love has not been purely sentimental. He has done the work of sanitation side by side with *Bhangis*, and he knows that proper scavenging is as much a science as any other. He has invited application for the free services of two hundred persons not under 18 years of age for the work. They must be willing and ready to attend to the cleaning of latrines and the whole

camp while the Congress work lasts. They must be zealous youths who won't neglect the duty entrusted to them for the sake of seeing the *tamasha* or the Congress delegates at work. Theirs will be the privilege of making the work of the delegates possible by attending to their sanitary comforts.

Maharashtra is a bee-hive of good hardy workers. It should not be

difficult for the Province to supply two hundred good and true young men to do the work. Not that young men from other Provinces may not apply. But for the sake of economy, if nothing more, it is better to have men from the province and, better still, the taluk or the district in which the Congress is held.

(From '*Harijan*,' 31st October, 1936.)

EDUCATION IN HEALTH AND HYGIENE.

Having given a place to village sanitation, the question may be asked why give a separate place to education in health and hygiene? It might have been bracketed with sanitation, but I did not wish to interfere with the items. Mention of mere sanitation is not enough to include health and hygiene. The art of keeping one's Health and the knowledge of hygiene is by itself a separate subject of study and corresponding practice. In a well ordered society the citizens know and observe the laws of health and hygiene. It is established beyond doubt that ignorance and neglect of the laws of health and hygiene are responsible for the majority of diseases to which mankind is heir. The very high death rate among us is no doubt due largely to our gnawing poverty, but it could be mitigated if the people were properly educated about health and hygiene.

Mens sana in corpore sano is perhaps the first law for humanity. A healthy mind in a healthy body is a self-evident truth. There is an inevitable connection between mind and body. If we were in possession of healthy minds, we would shed all violence and, naturally obeying the laws of health, we would have healthy bodies without an effort. I hope, therefore, that no Congressman will disregard this item of the constructive programme. The fundamental laws of health and hygiene are simple and easily learnt. The difficulty is about their observance. Here are some.

Think the purest thoughts and banish all idle and impure thought.

Breathe the freshest air day and night.

Establish a balance between bodily and mental work.

Stand erect, sit erect, and be neat and clean in every one of your acts, and let these be an expression of your inner condition.

Eat to live for service of fellow-men. Do not live for indulging yourselves. Hence your food must be just enough to keep your mind and body in good order. Man becomes what he eats.

Your water, food and air must be clean, and you will not be satisfied with mere personal cleanliness, but you will infect your surroundings with the same threefold cleanliness that you will desire for yourselves.

("CONSTRUCTIVE PROGRAMME"—Its Meaning and Place—By Mahatma Gandhi.)

Dr. JIVARAJ MEHTA'S ADDRESS

A Review

CONTRIBUTED

Among the speeches made during Christmas Week in Bombay before the members of the medical profession assembled in various groups, the one which deserves greatest attention is the Convocation Address by Dr. Jivaraj Mehta at the College of Physicians and Surgeons, Bombay.

Dr. Mehta is an outstanding member of the medical profession. He has achieved a top-rank by his extensive knowledge and practice. After the Independence of India, he has been lifted up to the highest executive post under the Government of India where his talents will have free scope. The utterances of such a person on an occasion like this is surely noteworthy.

Dr. Mehta has likewise utilised this opportunity to open his mind as to the future of Public Health in our country. He outlines the suggestions which he thinks should be implemented in the immediate future for the betterment of health. According to him, "a health programme should make provision for

(a) the training of medical and ancillary personnel,

(b) the expansion of existing health services,

(c) the promotion of medical research, and

(d) the education of the people to preserve their own health through the practice of personal and communal hygiene."

For the first of these proposals he suggests that the existing Medical colleges be enlarged to admit more students. The Bhore Committee stressed the fact that the country needs four times the medical men that it is producing now. True, but neither the committee nor Dr. Mehta in the official position that he is placed now, has considered how far the medical personnel that are now available are being utilised for the good of the country. There is no answer to the paradox that while the State is unable to find employment for the existing medical men, it is urged to produce more.

For the second of the objects Dr. Mehta gives a modified programme and includes suggestions for minimising the cost in the shape of temporary

buildings. One striking point in his suggestion is the fact that while Health Services in urban areas can be both paid and honorary, the services in rural areas must be a full-time paid one without the right for private practice. To reinforce this plea he suggests a minimum wage for the rural doctor with housing and cultural facilities. It is alright to throw out a suggestion from a high level. How is this suggestion to be implemented? We have about 700,000 villages in our country. To provide rural health services for this vast mass certainly needs more medical personnel. It is on the assumption that the Provincial Governments will do this that it is urged that medical colleges must admit more students. We have not paused to determine how many Provincial Governments are prepared to implement the expansion of rural health services. We have not considered how many medical men are likely to be employed for such duties in the Provinces every year during the next decade. We have found no answer to the problem of unemployment which is already distressing the mind of the war-returned medical personnel. Unless the Governments concerned definitely commit themselves to a measured rate of expansion, it will be a folly to produce more trained men and increase un-employment among them.

We are afraid that we cannot see eye to eye with the facile suggestions of Dr. Mehta that a wandering team of experts moving from centre to centre bringing relief for a few days in the year to the village will be any solution to the rural health problem. Travelling dispensaries have proved practically useless in the past. The money that is spent on them could be better utilised in the starting of a primary centre. The population benefited may not be large but the relief given will be permanent.

Dr. Mehta suggests that the medical personnel to be in charge of the primary health centre should be given a short three months training in public health. This suggestion was tried more than a decade ago in Madras Province. It was implemented and worked in selected centres. We would invite Dr. Mehta to acquaint himself with the results of this trial before advocating a repetition. The primary health centre will not be a success unless a trained *Health Officer* is placed in charge of it. What medical relief has to be given in the village, the Health Officer will be able to manage. It is a person of that type alone that can give the proper orientation to preventive work and not allow these institutions to develop lop-sidedly on the curative side.

Dr. Mehta also pleads in his address for the unification of the curative

and the preventive services. The Government of India have done it at the top level by making Dr. Mehta the Director of the Health Services. We have been also pleading in our columns for such a unification. After reading Dr. Mehta's suggestions and trying to follow closely the working of his mind we are inclined to utter a word of warning. As in the case of the primary health centre so also all along the line, entrusting the organisation to a person steeped in curative medicine will only retard the proper development of health services. In the whole of Dr. Mehta's address, we do not find any mention of the need for improving the environment of man for his health development. We would challenge Dr. Mehta to organise any kind of health services and make a success of it, without a preliminary or at least a coincident betterment in water-supply, disposal of filth, housing and nutritional condition of the population. Giving relief when sick, giving advice when healthy, diagnosing illness and such like measures are but a small portion of the steps which contribute to improve health. However much we may expand these aspects they will not yield fruit, unless these are given to persons with A-1 conditions. Keeping the people under C-3 conditions and trying palliatives of this sort will lead to poor results.

We may be pardoned if we say that Dr. Mehta's antecedents and experience had been responsible for his not envisaging other aspects of a concerted health development.

If a unified health organisation is to be manned and directed by the doyens of the curative profession, naturally we cannot have the proper outlook for development. Our plea therefore is that while unifying the services, it must be an unalterable condition at least for the next decade or two, that the directing head of the unified service should invariably be a person whose tradition and experience has been on the *preventive* side and not on the *curative* side.

In this connection it is rather refreshing to quote the following from the Presidential Address of Dr. Kini to the Association of Surgeons which met about the same time in Bombay. Like Dr. Mehta, Dr. Kini is an expert in one of the curative fields. But unlike Dr. Mehta he seems to have a much wider outlook. We particularly refer to the portions of his address which we extract below :

"The future of medicine depends upon a clear conception of the preventive aspect of medicine which brings positive health and is more beneficial to humanity than mere cure of disease by bottles of medicine."

"I hope our National Government will enunciate a new motto and a new

principle. The outlook of a beneficial National Government *should be not to give a bottle of medicine but to give a bottle of good health.*"

"The hub of the society (in a village) must be a public health man who should be the friend, philosopher and guide."

"The Public Health Officer must be a person interested in rural medical relief."

"The Public Health Officer being well-acquainted with the field work of his department will exercise the necessary drive through his sanitary squads and organise a good medical relief."

"The Public Health Officer must be in charge of the Taluk Headquarters Hospital. He must be trained in rural, town and school hygienics."

"At least there must be one Public Health Officer wherever there is a school of 500 pupils. The Public Health Officer may act as the Director of the School systems at taluk levels because he is better educated than the average village school master. This is the cheapest way by which medical relief can be promulgated."

"Integration therefore must be by entrusting the general direction and supervision at different levels in a unified service to the public health man and not to the curative man. Unless this condition is accepted, unification will result in the failures "achieved by the unified medical profession two generations ago."

We commend the suggestion of Dr. Mehta so far as research and health education are concerned. We join him

in his plea for giving far greater facilities, financial and otherwise, for research. Research is the foundation of knowledge. The more the knowledge we gain, the better equipped we will be.

Health education is equally important. For over half a century the Medical and Health Departments are supposed to have been doing it. Successive Directors of Public Health have been referring to the ignorance of the villager as the main cause for the low state of health. Certainly the villager ought to be educated. But the limitations of health education should not be lost sight of by those in authority. It is certainly good for a man to know what he should do or what should be done. But will it take him anywhere if he cannot do it or if that cannot be done. The trite saying is that *example is better than precept*. It is conveniently forgotten by those who urge greater attention to health education and lay less emphasis on health services. If we provide a water-supply to a place you do not need a trumpet to tell people how to use good water.

While agreeing with Dr. Mehta that the people must be told more and more about health, we would suggest to Dr. Mehta to lay more emphasis on the provision of amenities and comparatively lesser emphasis on telling people about it.

Reclaim Malarial Tracts Solve Food and Population Problems

by

Dr. SONTI DAKSHINAMURTY

M.B.B.S., B.S.Sc., (Madras), D.P.H.,

D.T.M. & H., Ph. D. (London)

Assistant Director, Malaria Institute of India, Delhi



No single disease in India contributes to greater sickness and mortality than Malaria. Out of its eight million deaths from all causes annually, about two millions die of Malaria; one million directly from malaria, while another million emaciated from repeated attacks of chronic Malaria are prone to catch any other infection, and are finally returned under diseases like tuberculosis and leprosy. The number of malarial patients are in the order of 100 million cases every year, and the loss in man-hours of these millions to the country employed in all kinds of labour in industry and agriculture runs into colossal figures in the wastage of potential wealth to the country. Malaria is primarily a rural disease as the anopheles mosquito that carries it is a clean-water breeder, and as rural rather than urban conditions are associated with its favourite clean water breeding places, such as rain water collections, streams and channels. In India, ninety per cent. of its population live under rural conditions, and as ninety per cent. follow agricultural pursuits as their chief occupation, and since the malarial

transmission season of any locality generally follows the rainy season which gives it its chief breeding places, it coincides with the transplantation and harvesting seasons when the maximum effort of agricultural labour has to be put on the fields, just when the malaria season is at its height. Malaria thus hits the farmer and his crops, and may therefore be regarded as one of the greatest obstacles to agricultural advancement of the country. Malaria control will therefore enhance food production, make up the margin of deficit, and can make the country self-sufficient with regard to its food, which will be one of India's greatest assets.

But the importance of malaria to India is not to be reckoned in figures of sickness and mortality, and not even in the loss of man-hours to a country whose greatest asset is man-power, but as being the primary cause of a great economic problem which hampers the development of the country. Large tracts of land exist all over India today whose development is at a standstill owing chiefly to malaria, even as large engineering projects like the Panama Canal and several

Railway and Irrigation projects all over the tropical world could not be undertaken owing to intense malaria until its control to enable labour to stand on their feet, which was their main problem. Sir Ronald Ross referred to these tracts when he wrote, that "the treasures of the tropical forests are zealously guarded by the two-winged fairy, the mosquito." These tracts are in every way ideal for land development; the land is fertile, with 50—100" rainfall, covered with vegetation, some with forests, but others with a low shrub jungle, so that soil-erosion had not done its havoc, and it is populated with primitive tribes very sparsely, about 50—100 to the square mile, who eke-out a sub-human existence. These tribes are no more immune to malaria than those of their civilised brothers in the plains, the adults acquire their immunity by a tremendous sacrifice of their infants and children. They follow no settled systems of agriculture; they shift their abode for fresh fields year after year, and get just enough from their lands to support their sparse population.

Three chief tracts exist in India today which may be classified under this category. In the peninsular India, there is a tract along the Eastern Ghats, and another along the Western Ghats, the former being low hills between 1000—3000' are more malarious than the latter which soar to greater heights. In the north, the sub-Himalayan belt, the terai-land is also malarious and not developed. In the Eastern Ghats, there is a tract 20,000 square miles in the Agency Tracts of Ganjam, Vizagapatam and Godavary Districts in Madras and Orissa Provinces, and adjacent to it are the Eastern States, nearly 40,000 square miles in extent. These together make up 60,000 sq. miles, and is as large as one small province, and nearly twice the area of Mysore State. It has all the natural resources, rivers and water falls, and is connected by rail and road with the young natural harbour of

Vizagapatam. It is bounded by the rivers, Godavary in the South and the Mahanadi in the North. Irrigation projects are under contemplation on these two rivers, while the Machkund water falls in the heart of this area is already under execution, and will provide cheap hydro-electric energy for the entire tract. This land is crying for development in the heart of India, and can be made into a New India within India itself, and with all its resources can be worked out like the Tennessee Valley Authority Scheme of the U.S.A. (See Area marked on map at the end of this article).

In addition to these tracts, there are smaller tracts all over the country, some of them partly reclaimed, like those under the Sukkur Barrage in Sind, the Irwin Canal Area in Mysore State, and the Mettur Dam in Madras, these have their own malaria problems, the lands to start with were not very malarious though fertile but needing facilities for irrigation; malaria increased after the completion of the irrigation projects owing to the organisers being more anxious to bring water to more land, rather than draining away the unwanted waters from the fields, which the mosquito uses to an advantage. Water-tidy and not untidy irrigation is what is required in future schemes. This class of tracts is now classified as cultivable wastes by Agricultural Departments, and forms about 10—20% of land in each province. These tracts have varying amount of malaria to start with, but their problem is that malaria should not follow in the train of irrigation schemes.

FOOD PROBLEMS

During the last war, the need for more food was generally recognised, and the country was flooded with more "Grow more Food Campaigns" than with more food, with the result that scarcity of food has become our main problems since the termination of the war in 1946. Many

provinces became deficit provinces, and the imports from other countries were cut down, and we had no reserves, and so the Bengal Famine could not be tackled. Food interests us owing to under nutrition and malnutrition being the cause of ill-health and low vitality in India. Chronic malaria would not lead to such emaciation and proneness to infection from tuberculosis but for malnutrition. Better nutrition requires greater quantity and better quality of food; the latter does not concern us. Further, quantity of food may be increased by bringing more land under cultivation, as well as by improved agricultural operations; the latter again, does not concern us for the present. With great pressure of population on land already under cultivation in India, the country will soon reach a stage if not already so, when it cannot support further additions to its population. If new lands are to be brought under cultivation, such lands alone exist in the malarial tracts, rich and fertile, in large blocks which will facilitate organisation of large scale development schemes. In the reclamation of the malarial tracts therefore lies the direct attack on the problem for increased food production. Its reclamation solves the two-fold problems of increased food production, and decreased pressure of population on soils.

POPULATION PROBLEMS

India has several population problems; three of its chief problems are briefly described —

First :—Is the natural increase of its population, the increase of births over deaths, with little emigration, which at every decennial census is showing for the past few decades about 10% increase for the country as a whole. Certain provinces and areas like the Indo-Ganga plain and the deltaic areas of large rivers like the Ganga and Brahmaputra, the Godavary and the Kistna show much larger increases. The distribution

of population must be considered in the light of the relief of pressure of over populated areas; the more intense being given a higher priority over others.

Second :—The recent decision of the Government of India to stop unskilled labour emigration outside India, would need an outlet inside India for persons who wish to migrate from overpopulated areas in search of better living. The total number of emigrants outside India are no more than 2 million, a very small fraction of its entire population. Active migration has in recent times been going on to Burma, Malaya, Ceylon, where there are roughly 5 lacs each, chiefly the Telugus and the Tarrils from the Province of Madras. No more than a few lacs annually will migrate to these countries, if permitted, perhaps more may be induced to migrate to these malarial tracts in the Eastern Ghats, much nearer home, and not complicated with the same problems as those which beset overseas Indians. These migrants can find enough work in reclaiming these malarial tracts, and can be settled down under much better conditions with lands allotted to them than is possible on the plantations of tea and rubber in Ceylon and Malaya.

Third :—The partition of India has created the problem of permanent rehabilitation of Hindus and Sikhs settled in Pakistan into India, from West Punjab, Sind and East Bengal. These would demand immediate allotment of land in lieu of what they have lost, as the farmer values the possession of land more than any treasure. It would be difficult to settle them in the suburbs of large towns which are now scheming for expansion themselves for relieving their own housing congestion, while in rural areas fertile land is very hard to obtain especially in compact blocks, so as to facilitate organisation of all the social amenities for their successful rehabilitation. It would be far easier to put

them in small townships in the reclaimed malarial tracts. Everything can be planned in these areas to the minutest detail and there is further scope for improvement in all spheres of development.

MALARIA CONTROL

Since the discovery of the Malaria Cycle in 1895, researches in Malaria have progressed and we now know enough of the Malaria carrying mosquitoes, their habits and their control by the use of larvicides and insecticides, and several synthetic drugs in addition to quinine. Naturalistic methods have largely replaced artificial methods, so that the villagers may themselves supervise their control operations. In the tea estates of South India in Wynad, Malaria is being controlled at a recurring cost of less than Re. 1 per head per year. The species of mosquito which carries malaria in these tracts, as in the other two large tracts mentioned above is an efficient carrier of malaria, but is so highly specialised that it has special breeding grounds, which are the hill streams, and it requires a slow current of water usually found in the pre-rainy season. The malaria transmission season is therefore during the quarter, February—May, while the next quarter, June—September, the rainy months are free, because the fast current in the streams flushes the larvæ from the streams which are unable to stand the current, while the third quarter, October—January, is also fairly free, as they are so cold that the mosquitoes are reduced in numbers, and are not active. The same species of mosquito carries malaria in the Eastern Ghats, and similar methods may be applicable there. In the terai-land at the foot of the Himalayas, a similar but not the same species carries malaria; a highly specialised one, and so more easily controlled by naturalistic methods. The stream breeders can be controlled by putting kutch-dams on the

streams, damming the water overnight, and letting go the next morning, so that the larvæ may get flushed down the streams, thereby imitating natural rainy conditions. This mosquito also keeps very close to its breeding places, rarely straying beyond $\frac{1}{2}$ mile around its beat.

The following general methods of control may be quite satisfactory in such large tracts :

(1) *Cut the contact between man and mosquito* :—Generally speaking, two bites of mosquitoes are needed for every case of malaria; the first bite when the mosquito gets infected from an infected man, and after a lapse of ten days, the mosquito is able to convey the infection to a healthy man by its second bite. Separation of man and mosquito on a large scale—not by use of mosquito curtains—is therefore of primary importance, and is the first line of attack. This must be done *in space* as well as *in time* to produce results. In space, they can be separated as mosquitoes keep to their beat, which is usually $\frac{1}{2}$ mile around their breeding places. They can be separated *in time* as the anophelines rarely bite during the day; the mosquitoes rest when man works; that is during the hours, 8 a.m. to 5 p.m. and while man rests the mosquitoes are up and active during the remaining hours that is from 5 p.m. to 8 a.m., when they get at man and bite him. In these large tracts, where there is sufficient space to site the camps initially, the camping grounds should be selected on the tops of little hillocks with natural drainage all round, and the safety zone should be railed off clearly and demarked. No part of the safety zone should be less than $\frac{1}{2}$ mile distant from the nearest valley below, where the mosquitoes breed. People in the camp can go into the valley and work there between 8 a.m. to 5 p.m. but must report at the camp at 5 p.m. and remain there till next morning, 8 a.m. Water must be provided at the camp by pumping it from the valley below by, say hydraulic rams, which work

with little recurring cost, so that there is no need for men to go into the valley to fetch water; with the initial siting of the camp, therefore, and without much extra expenditure, man and mosquito could be separated *in time and space*. In large tracts where space is no consideration to start with, the camps can be sited on hillocks with natural drainage all round, and with a little discipline, the chances of bites of mosquitoes are reduced to a minimum.

(2) *Attack on the mosquito* :—The attack on the mosquito should start initially during the early planning stage, when the land is being reclaimed and the waterways harnessed by large engineering projects and the chief breeding grounds can be done away with altogether by sloping the ground towards the valleys. Later on, minor engineering schemes should maintain the water-tidiness of the place, so that whereas Engineers in the past had created 'man-made' malaria, they could now be induced to help and keep the place today, and do away with large breeding grounds, thus cutting down the recurring cost on larvicides and insecticides. Minor engineering schemes should maintain this state and do away with the breeding of mosquitoes to a large extent. These can be supplemented with naturalistic methods of control like flushing with dams already described. The use of artificial methods like larvicides and insecticides should be reserved for emergency purposes, and during the transmission season to cope with unforeseen breeding grounds.

(3) *Attack on the parasite*.—Cases of malaria may occur in the camp if: (i) mosquitoes infiltrate into the camp beyond their barriers; (ii) if men stray into the beats of mosquitoes beyond their safety zones during their biting hours, when they are active, *viz.*, 5 p.m. to 8 a.m.; (iii) if people go on leave or holidays into other areas and catch the infection, and are not watched when they return to the camp. All these can be

tackled by malaria discipline and the use of drugs for prophylactic, suppressive or curative treatment.

COLONISATION AND RURAL DEVELOPMENT SCHEMES IN INDIA—A REVIEW OF THE PAST SCHEMES AND SUGGESTIONS FOR FUTURE SCHEMES

(a) *Colonisation Schemes in Malarial Tracts* :—During the past 5 years, two schemes of land colonisation were started in the malarial tracts referred to above, and were being worked in the Province of Madras; one in the Wynaad taluk of the Malabar District, and another in the Vizagapatam Agency tracts. Both have common lines of objective and are worked by the Agricultural officers and Malariologist with the help of other development departmental officers. The object is to make the land agriculturally fit and malaria free and ultimately to serve as centres for future colonisation in similar malarial tracts of the neighbourhood. These schemes originally planned by the author, have worked satisfactorily and are the first schemes of their kind started in India, and their lessons can be copied in the immediate neighbourhood as well as in areas elsewhere; each colony can be developed into a township and worked as a unit as described.

(b) *Rural Development Schemes in India*.—During the past 20 years or so, several efforts were made in India to improve rural conditions. Some of these were started by local Governments, others by voluntary organisations like the Y.M.C.A. and by missionary bodies, while a few known as Health Units were started under the auspices of the Rockefeller Foundation. Most of them were directed with special emphasis on some aspect of rural life, such as Health, Agriculture, Education or Cottage Industries, while very few were directed on all

aspects of rural life. They had varying degrees of success; most of them succeeded to the extent of making the village a 'model village' with respect to the particular branch of work, but few succeeded in making others copy their good examples. These model villages had the advantage of a lot of men, material and money put into them, but very often the same men, money and material could not be put into the other villages which wished to copy them. The organisers of model villages felt that their work was finished by making models. It is far more easy to construct model villages than copy the models in other villages. They remained like the Taj-Mahal in the glass case, an object of admiration, but not a model which could be copied elsewhere. One scheme exists in India where on all-out attack was made on all aspects of rural life, to tackle all the needs of the villager at the same time. It was the Tiruvallur Scheme started in 1933 by the Government of Madras, in co-ordination with the Rockefeller Foundation near Madras, not in one village but in a tract of 10 villages. Here all the departments took part in its organisation, Medical and Public Health, Agriculture, Industries, Veterinary, Co-operation and Education Departments. A Socio-Economic Survey was done, and all the improvements were based on the economic condition of the villages. The author was its Secretary and its lessons are now available for working out similar schemes elsewhere in India.

EVOLUTION OF REVENUE AND DEVELOPMENT DEPARTMENTS.

During the last 100 years, since the taking over of the administration by the British Government from the East India Company, the Revenue Department was the first to be organised, followed by the Judiciary and the Police, for the collection

tahsils, the collector was in charge of the districts, who in addition to the collection of revenue was also the District Magistrate, and held a general control over all the other departments. Each taluk formed a revenue unit and contained about 100 villages, with a population of about 100,000 people covered over an area of about 100 square miles. The tahsils were found to be too big and were sub-divided into firkas, about 5 firkas in each tahsil with 20 villages in each firka in charge of a Revenue Inspector. Each village had a village headman who was ultimately responsible for the collection of revenue in the village. Thus the collection of revenue was well organised from the village upwards, and the revenue flowed into the Government treasury satisfactorily. But the villager was not interested in the collection of revenue, but only in his needs being served. His needs were roughly six; dealt with by the revenue-spending departments; Public Health; Agriculture, Veterinary, Industries, Co-operation, and Education.

These activities were growing from the early days of this century, but with the passing of the Reforms and the transference of power to elected representatives of the people in 1919, these grew up into separate departments. These followed a stereotyped policy, with a Director at the Provincial Headquarters, District Officers who worked in conjunction with local Boards, and their lowest officer was an Inspector at the taluk stage. They all had to depend on the village headman, and on the Co-operation of the Revenue Department ultimately for their contacts with the villages. Thus the Health Department required of the village headman to maintain the Vital Statistics registers and reports on infectious diseases, so that they could proceed to the village on the first outbreak of an epidemic disease like Cholera, Smallpox and Plague. The Veterinary Department similarly required the maintenance

of revenue and the maintenance of law and order. Medical and Engineering department grew up sooner or later. The country was divided into provinces, districts and taluks or of the cattle mortality register and the outbreak of infectious diseases among cattle. The Agricultural Department required reports of crops pests from village headman to take action. The village headman appointed on a hereditary basis with a little training in revenue matters, had no inclination nor adequate training to attend to the special technical departments, and very often he could not find the time to attend to his multifarious duties imposed on him from time to time, and always gave priority to collection of revenue rather than to spending departments. These six departments were well organised at the top at the Provincial Headquarters, with Administration, Research and Teaching sections. The Director passed on his ideas to the District Officers, who in the shape of circulars, in turn passed them to the taluk officers, and these ended at the taluk stage, as there were none in the villages to receive them. The strongest link of the chain should be between the taluk and the village, but it became the weakest link in the chain. This link depended on the contact between the taluk Inspector and the villager. With 100 villages in his Jurisdiction spread over 100 square miles, with difficulties in transport and communications and half the time spent at his headquarters it took the Inspector two to three years to go round his taluk spending one or two days in each village, and at the end of this period he was transferred to another range, for administrative reasons. Largeness of jurisdiction was the chief evil of these services, and the next was the difficulty in coordination. These six departments which represented the six needs of the villager, served the villager without any idea of the other departmental activities. Thus, the Health Inspector told the

villager that manure heaps are deleterious to their health, as the manures breed flies, and flies convey disease germs from filth to food. When the agricultural demonstrator next visited the village, he told them that manure is valuable to their lands and must be carefully preserved. If the two co-ordinated, they would have told the villager to do composting of manures which does away with flies as well as preserve their nutrient qualities. The mind of the villager was unable to put the two pieces of advice together, and was left confused. These departments all dwindled into propaganda departments, and at the end of any of such talks if the villager was asked if he had any doubt, he invariably asked for a drinking water well. The officers realising that all is not well that ended in a well, left the village with a solemn promise that their request will be communicated to the authorities concerned; often with no result. Spencer Hatch in his book 'Up from Poverty' wrote that the six square yard of the Indian Villager's hut is looked after by six departments at six times of the year, one vaccinated his children the other inoculated his cattle and a third and a fourth, etc., talked on their respective subjects without the villager's primary need like a drinking water well or a school or a road within easy reach being satisfied, and without any idea of co-ordinated team work between themselves. He asks, is it any wonder that the villager has begun to look on the Government Departments with suspicion? He is not interested in the efficient collection of revenue while the Revenue-giving departments could not deliver their goods owing to large jurisdiction and incoordination. A solution would possibly lie in giving each of these six departments a village guide for a small firkha with about 20 villages like the Revenue Inspector. He could vaccinate the children and inoculate his cattle, sell the seeds and manures, run a co-operative bank and demonstrate

cottage industries, and do the propaganda for all the departments, visit the villages more frequently and establish personal contacts which will induce confidence in the villagers. The Tiruvallur Scheme referred to above aimed at such a solution in an all-out attack and co-ordination of all the needs with a smaller jurisdiction.

India has today several plans and blue prints prepared most carefully during the last ten years; it is now time to implement them by actual work in the villages a careful planning of all these plans is necessary. There are two sets of plans; those like the Report of the National Planning Committee aim at an all-round development, while the Special Reports like the Sargent Report on Education and the Bhole Committee Report on Public Health aim at particular aspects of rural life. It is a point for consideration whether all the needs of the villager should be attacked simultaneously, or only one like Education or Health; also as to where these schemes can be tried with greater chances of initial success, in the villages where established notions and prejudices prevail which oppose all reform, or in fresh areas where the blue prints can be put into effect in their entirety? It is contended that an all-out attack on all the needs of the villager will alone produce results, and that these may first be tried in new townships in the reclaimed malarial tracts with greater chances of success and in a shorter time than in established villages.

The Royal Commission on Agriculture in India ended its reports by saying that the urge to improvement in agriculture must come from the villager himself. How can that urge emerge out from the villager? At present, all the evils of Indian village life centre round socio-economic conditions. The villager is chronically indebted to the money lender, his holdings are small and uneconomic, his leaders have left the village for

the town with its attractions of better social life and easy money-making facilities, there are no godowns to store his produce, no marketing facilities to sell his produce, and sell them when prices soar high and not sell his crop even before it is harvested to the money lender who advances money on his growing crop, while malaria and malnutrition lower his vitality, his financial reserves are frequently consumed owing to wasteful social customs and practices such as for marriages, funerals and pilgrimages, while periodically, famines, flood and fires consume his stocks built up for bad days, and he is thrown into despair. Can model villages which cannot be copied and which concentrate only on one aspect of his life produce any effect on the villager? Can a university of bore-hole latrines to improve soil sanitation have any effect without putting more food into his mouth? Can the villager be benefitted by a movie-talkie film, when his mind works at a much slower speed, and all the time thinks of his drinking water well, a village school or the road when he sees a film made in England of a model child welfare clinic, dairy farm which can touch a New Yorker or a Londoner who was the proper mental background to receive such ideas?

It is contended that an all-out attack on all the needs of the villager can only produce results. This can be more easily tried with better chances of success in new townships rather than in old established villages, and that these development departments must have a village guide for a smaller circle than a tahsil, all the needs of the villager should be centralised around one department FOOD, and all improvement should radiate around food which will ensure the necessary co-ordination. There is no other subject which can integrate all the needs of the villager as FOOD; give the Indian villager good food, he will get the vitality to keep off most of

his diseases, and the vigour to ask for more, and the urge to improve himself and maintain the improved conditions himself, as of his own making.

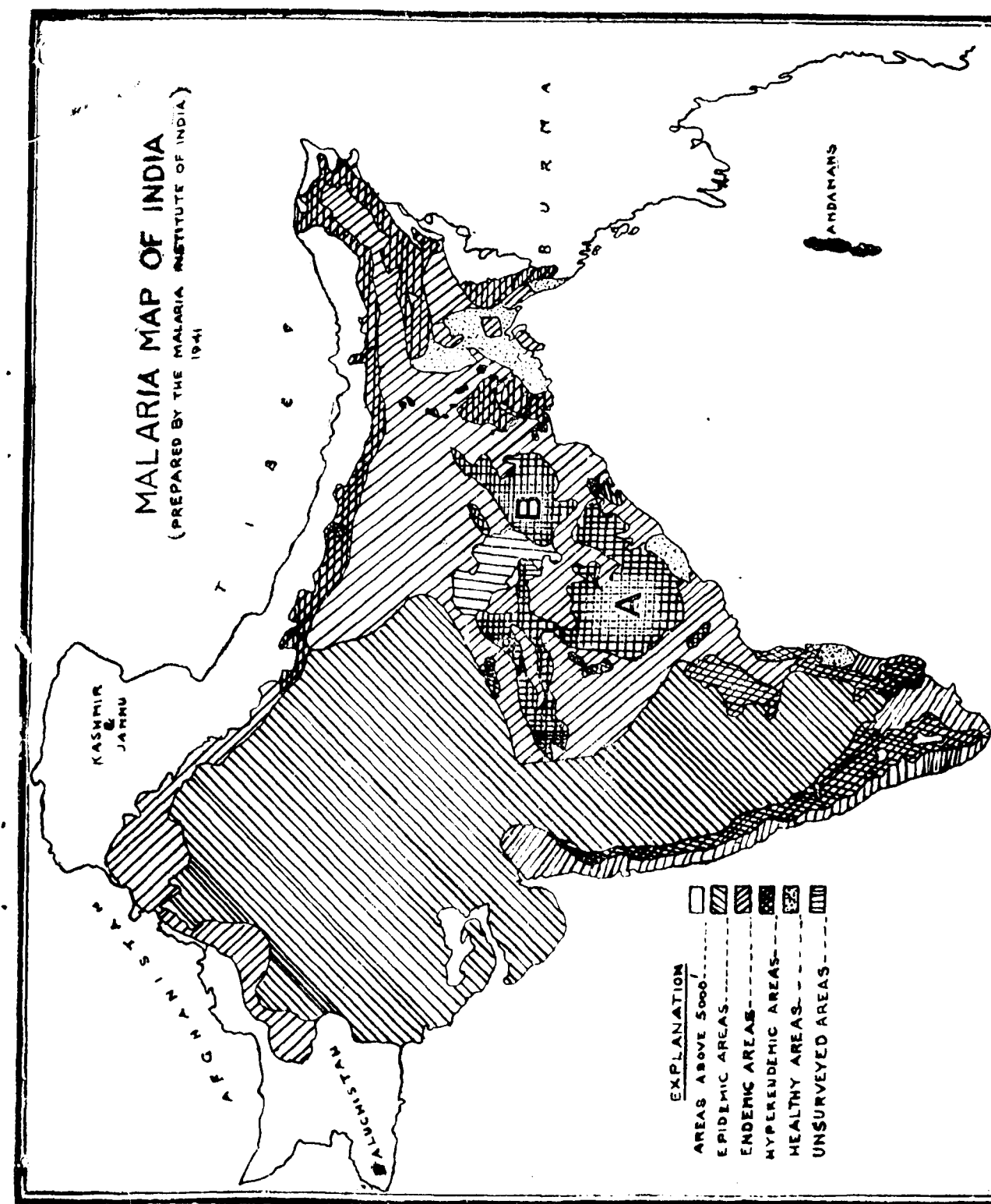
LAND RECLAMATION. LAND DEVELOPMENT HARNESSING WATERWAYS-POWER DEVELOPMENT- REHABILITATION.

The reclamation of the malarial tracts of India can increase the food production, solve its population problems, serve as a suitable centre for the industrial development, and as a ground for model schemes for rural development, in education, health, agriculture, veterinary and co-operative schemes. Each township may be formed with 10,000 persons consisting of 2,000 families, each family allotted about 15-30 acres of land which may vary with the fertility of the soil, the nature of irrigation facilities available, and the number of working members in the family. The total holding may be allotted into three kinds of land; wet for food crops, dry for cereals and fodder crops, and plantations for cash crops. The total allotment in individual holdings for the township will come to 30 to 60,000 acres, while the township as a unit may have extra land which is cultivated on the co-operative or collective farming lines for fruit, vegetables and dairy products. Individual holdings may be done by the common agricultural implements while the collective farming done by mechanised implements. Each township may become a unit for malaria control, agricultural development, certain kinds of cottage industries, co-operative and educational institutions. The land engineers will initially deal with the general levelling and training of the waterways, the irrigation engineers with irrigation and design of the waterways to serve the needs of the Agriculturist and the Malariologist, and the hydro-electric engineers with the

harnessing of power for the industries. The departmental officers for the different activities like Education, Agriculture, Industries and Co-operation will develop their own activities on the model blue prints available for them and give a fair trial. A Municipality may be developed from each township from the elected representatives of the people, in charge of roads and communications, posts and telegraph services, religious and recreational facilities, parks and playgrounds for the community. The entire township will then develop as a model village, not as in the past as a model for others to copy, but as a model in itself. The several plans can be put into effect slowly but steadily, so that by the end of about five years or so, the villages may become a colony, and large scale industries can be developed at a later stage. The progress may be slow but sure, it is an all-out attack against all the evils in the present settled villages in the country. The different activities in each township can be developed like a jigsaw puzzle, each a small unit in itself, but will only make the complete picture if put together. The old model villages for health or education is like one piece of the jigsaw puzzle, and has no meaning in itself. An all-out attack on all the needs of the villager makes the complete picture, may be to start with not quite clear, but will become clearer in definition and detail as we progress; each village or township a small complete picture, and the whole colony or tract a co-operative and large scale unit. It combines the advantages of the rural and the urban life, and may be called a 'rurban' development.

The reclamation of these tracts may therefore be described under two stages.

Short term programme :—Solution of the Food problem and the Population problem dealing with immigration out of India, and rehabilitation of Hindus and Sikhs from Pakistan into India.



Long term programme :—Rural development schemes put into effect under ideal conditions in a tract comprising an all-out attack on all aspects of rural life, so that they may be copied in the settled villages elsewhere.

CONCLUSION

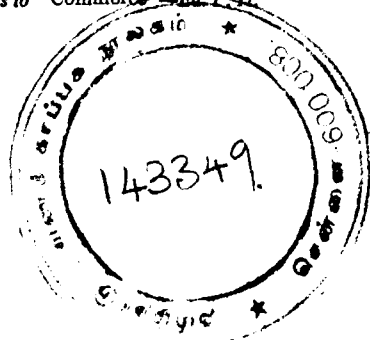
Five things are generally needed for the development of a country; these are Land, Water, Energy, Man and Organisation. In the Malarial Tracts of India, we have the first three, while the fourth is available in the overpopulated areas in the country, and the people who wish to emigrate out of the country, and the Hindus and Sikhs who wish to migrate from Pakistan into India, awaiting such rehabilitation. The only fertile land available in the country in large blocks are the malarial tracts; most of the Indian rivers pour 90% of their water into the seas, as the rivers are in floods during the monsoon periods, while quite dry most time of the year; only 5% of the total hydroelectric power of the country has so far been harnessed, and this is one of the great assets of the country awaiting the development of power for industrial advancement; man power there is in plenty, but the total output of man-hours utilised is very small, as the agriculturist is idle for 6—9 months of the year, and has no subsidiary occupation; the men migrating out of India as cool labour do not add much to their wealth and nothing to the country at large; the pressure of population on the cultivated soils is ever increasing and needs relief; an organisation is needed which

will take into consideration all the Indian conditions present in the villages, all the attempts at rural reconstruction made in the past, its successes and its failures, and the several blue prints now available before the country awaiting implementation in the country at large.

A 'New India' can be created within India itself where all these can be utilised with the greatest chances of success in the shortest time and affecting the largest population. Such an area can help the immediate solution of the food problem, the population problems of rehabilitation of Hindus and Sikhs from Pakistan, and the emigration of Indians outside India. As a long term plan it can give a fair trial to the several blue prints in various terms of rural development of village life, so that it may serve as a training ground for such workers elsewhere, and lessons can be learnt which can be modified for settled villages in the country at large.

The Tennessee Valley Scheme is in the main a water reclamation scheme while this will be a land reclamation scheme. Both are multi-purpose organisation schemes integrating several activities but the emphasis in the T.V.A. is on the utilisation of *water*, while here, it is on the utilisation of *land*. These colonies in the malarial tracts can now be integrated and organised, using all the resources of the country helping to solve the immediate problems before the country, and having a long range programme for rural development under modern lines, as envisaged in the several plans and reports awaiting implementation.

(The article in a slightly modified form appeared in 'Commerce' dated 17 and 31st Jan. 1948. We print this article with acknowledgments to 'Commerce'—Ed. P.H.)



THE 'HERL' SMOKELESS STOVE FOR THE MASSES

by

Dr. S. P. RAJU

B.A., B.E., Dr. Ing. (Munich)

F.N.I., M.I.E., (India), MIAHSR (Stockholm)

Director of Engineering Research, H.E.H. the Nizam's Government, Hyderabad, Deccan

WHAT THIS STOVE MEANS TO THE NATION :

The new 'HERL' stove, which is smokeless and fuel saving and at the same time simple and cheap enough to be within the means of the poor people, has a three-fold contribution to make to the daily life of the nation.

(i) To the ten crores of housewives who spend about a quarter of their lives in the 70th century old, smoky, unhygienic and irritating kitchens, it brings health and cheer, and increases the happiness of their families.

(ii) To the ever increasing number of housing authorities and designing engineers, confronted with the task of providing cheap and hygienic houses to millions of people, the new stove provides a simple solution to the long

unsolved problem of kitchen smoke nuisance, and becomes a landmark in the history of Indian Housing Reform.

(iii) To the millions of poor families it brings a welcome reduction in their daily firewood expenses, the resulting saving for the Hyderabad State alone amounting to not less than Rs. 50 lacs per annum. The consequent reduction in forest exploitation has far-reaching beneficial effects on rainfall, soil erosion, flooding of rivers and wastage of agricultural lands.

ITS DEVELOPMENT :

This new cooking stove is called the 'HERL' Stove; because it has been developed in the Hyderabad Engineering Research Laboratories. These recently established laboratories owe their existence to the vision and

JL
L: 50-211111 1-1-48

initiative of the Hon'ble Nawab Zain Yar Jung Bahadur, *Minister for Public Works and Communications (now the Agent-General of Hyderabad at Delhi)*, who as an Engineer and an Architect himself realized the scientific need and the economic value of large scale engineering research. The Laboratories include in their scope, research in buildings, roads, irrigation, water power, etc., and are in charge of a Director, who is immediately responsible to the Minister and has the status of a Chief Engineer. Special attention is paid to those researches that can immediately raise the standard of comfort of the masses and reduce their expenditure on daily needs.

ITS DESIGN AND CONSTRUCTION :

After a long series of experiments the 'HERL' stove has been designed as a simple structure built of brick and mud or only mud, and plastered with fine earth, and consists of an 'L' shaped duct with three holes for the cooking pots and an opening for the firewood. At the end of the duct is an arrangement for a big pot of water so that the hot gases before going out are utilized further to heat the water pot, thus providing hot water for the family as a by-product. The gases are finally taken out of the range by means of a chimney, which can be made of tin, clay-pipes or tiles, bricks or mud masonry or built into the

walls of the kitchen itself during construction.

Its thermal efficiency is two and half times greater than that of the stoves now in common use. In actual cooking in normal life, observations of ladies who have been using these stoves for many months show, that between the new and the old there is a saving of about 20 to 25 per cent. of firewood.

ITS OPERATION :

It is lighted just like an ordinary oven. The flame is maintained by natural draught ensured by the design and there is no need for constant blowing. Even with wet wood there will be no smoke. The fuel may be firewood, cow dung cakes (although this should not be encouraged), or other combustible waste materials of the house-hold. (For coal and charcoal experiments are in progress). During cooking it is most important to have all the three holes closed; otherwise there may be a back draught of smoke. At one firing three things can be simultaneously cooked on three holes with different degrees of heat. Chapaties can be made on the first hole near the opening.

ITS SPECIAL FEATURES :

The special features of the new cooking range may be summarized as follows :—

Simple : (1) Can be built by any ordinary mason.



THE AGE-LONG SMOKY OVEN.

Responsible for the many eye, nose and lung troubles of thousands of housewives and cooks of India

(2) Can be built with materials available even in a village.

(3) Can be operated by any housewife. Non complicated gadgets.

Hygienic : (1) Smoke completely eliminated and the cause of many diseases of the eyes, nose and lungs removed.

(2) Due to good natural draught through the chimney, the fatiguing blowing of the fire minimised and no ash blown out of the oven.

(3) Being practically closed, no discomfort due to the direct heat of open flame.

(4) Soot completely eliminated. Food not contaminated by smoke, soot or ash.

(5) Kitchen no longer black and dirty, but can be kept clean and cheerful.

(6) Being comfortable, improves the temper of the housewife.

Economic : (1) Cheaply built. With clay pipes or country roofing tiles for chimney, cost should be under Rs. 5.

(2) Saving of firewood.
(3) Hot water provided as a by-product.



FOR THE MEM-SAHIB TOO! (WHEN SERVANTS BECOME SCARCE!)

A special compact kitchen unit with the cooking range on a raised platform.

(4) Labour of washing pots greatly reduced, as only the bottom is exposed to the flame.

(5) Chula easily cleaned with a wash of red earth or cow dung.

THE ORTHODOX HOUSEWIFE CAN USE IT TOO :

As the new cooking range is built of the same materials as the old oven, it lends itself to the customary method of mud cleaning, so that the new invention should not prevent the orthodox housewife from taking advantage of it.

NOT BEYOND THE MEANS OF THE VILLAGE HOUSEWIFE :

To meet the needs of the village, a simpler arrangement is devised with only two holes for cooking pots, a hot water pot and a chimney consisting of the round tiles that are used for roofing in the villages and in poorer houses in the cities. The whole of this arrangement in a village should cost very little. If the wages of the village mason is paid in kind, the immediate cost must be only that of the 15 or 20 tiles needed for the chimney.

"DE LUXE" KITCHEN UNIT FOR THE MODERN HOUSEWIFE:

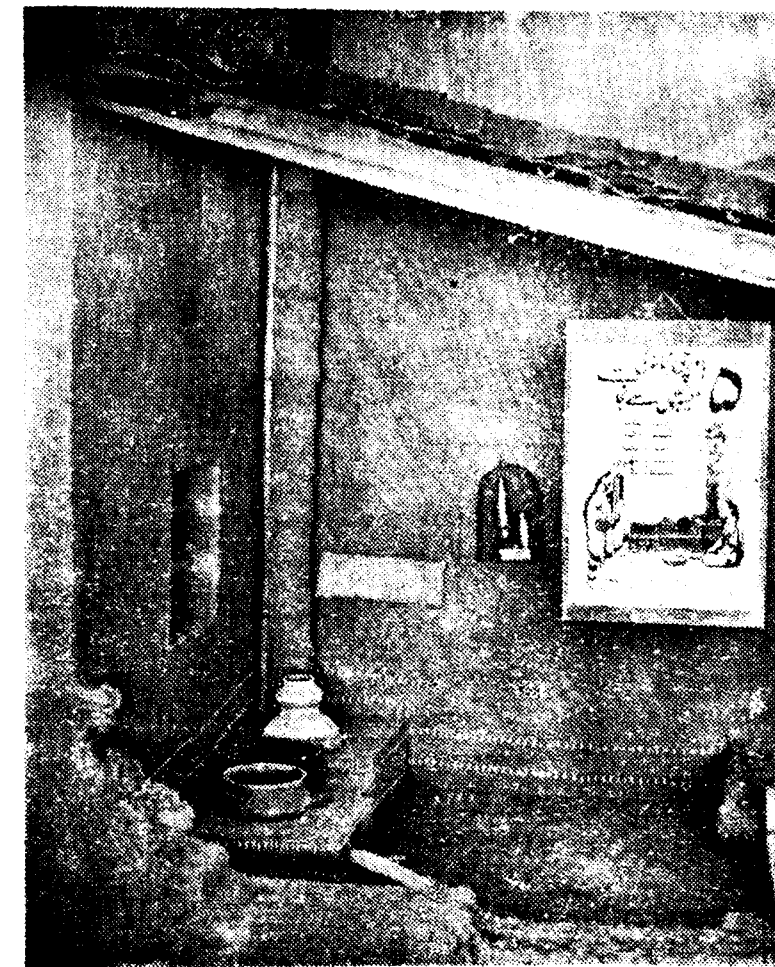
(When servants become Scarce!).

As the servant problem is becoming acute and it may become necessary for the high class ladies to come into the kitchen, a special compact type has been developed. This provides the usual kitchen requirements including: (i) the cooking range; (ii) the preparation table for operation like cutting vegetables, kneading of flour,

mixing of foodstuffs; (iii) a sink for washing; (iv) shelves and cup-boards for the kitchen stores; (v) storage space for firewood; and (vi) garbage bin. This compact unit is so designed that it saves space in the kitchen, as also the time and energy of the housewife.

USED IN GANDHIJI'S ASHRAM AT WARDHA :

These stoves have been introduced in Gandhiji's Ashram at Wardha, where



THE SMOKE-FREE OVEN FOR THE VILLAGE WITH VILLAGE MATERIALS

A simpler arrangement with two holes for cooking and a hot water pot. The chimney consists of the ordinary round tiles used for roofing in the villages and in the poorer quarters of cities.



HOW SELF-RELIANT AND CONTENTED!

they have been in use for many months. The Secretary of the All-India Village Industries Association has reported: "We have been trying your chula and trying to find out what an ordinary village woman would feel about cooking on it, but with an interested and critical eye. We conclude that the advantages are: (1) Freedom from smoke and soot (2) freedom from diffused heat (3) freedom from incessant blowing (4) cooking in so many pots simultaneously saves time and fuel."

ITS GROWING POPULARITY IN HYDERABAD STATE:

The different types of the stove were exhibited in the Hyderabad

Industrial and Economic Exhibition in February 1947. Popular leaflets about it have been published in Urdu, English and Telugu. The demand for it is spreading rapidly among the public of the City. Orders have been issued by Nawab Zain Yar Jung Bahadur, the P.W.D. Minister for the construction of these stoves in all Government and Railway quarters throughout the State. For this purpose masons from different Districts are being sent to the Research Laboratories for being trained. The Secunderabad Municipality is putting up these stoves in all the municipality owned quarters rented to the public.

The Mines Department has had them constructed in the labour quarters of the collieries in their charge. The Technical Education Department has arranged that the students of the Girls' Industrial Schools are taught the construction of these stoves by a Mason Instructor trained in the Research Laboratories. Some of the Girls' Institutions with Domestic Science Departments are having demonstration stoves fixed up in their cookery classes. In the hundreds of hutments being put up for refugees, this stove is found very useful for the comfort of the people and the health of the camp.

The Director has put up a scheme for wider propaganda and eventual compulsory legislation.

WIDESPREAD INTEREST OUTSIDE THE STATE:

At the request of the Government of India, the stoves were put up at the All-India Food and Nutrition Exhibition at Delhi in March 1947. The Food Department had an article about them in its Bulletin No. 32. Publicity is being given in the technical and popular papers of the country and there is a large number of enquiries from Government Departments, private organizations and private individuals from various parts of India, Pakistan, Burma, Ceylon and Nepal.

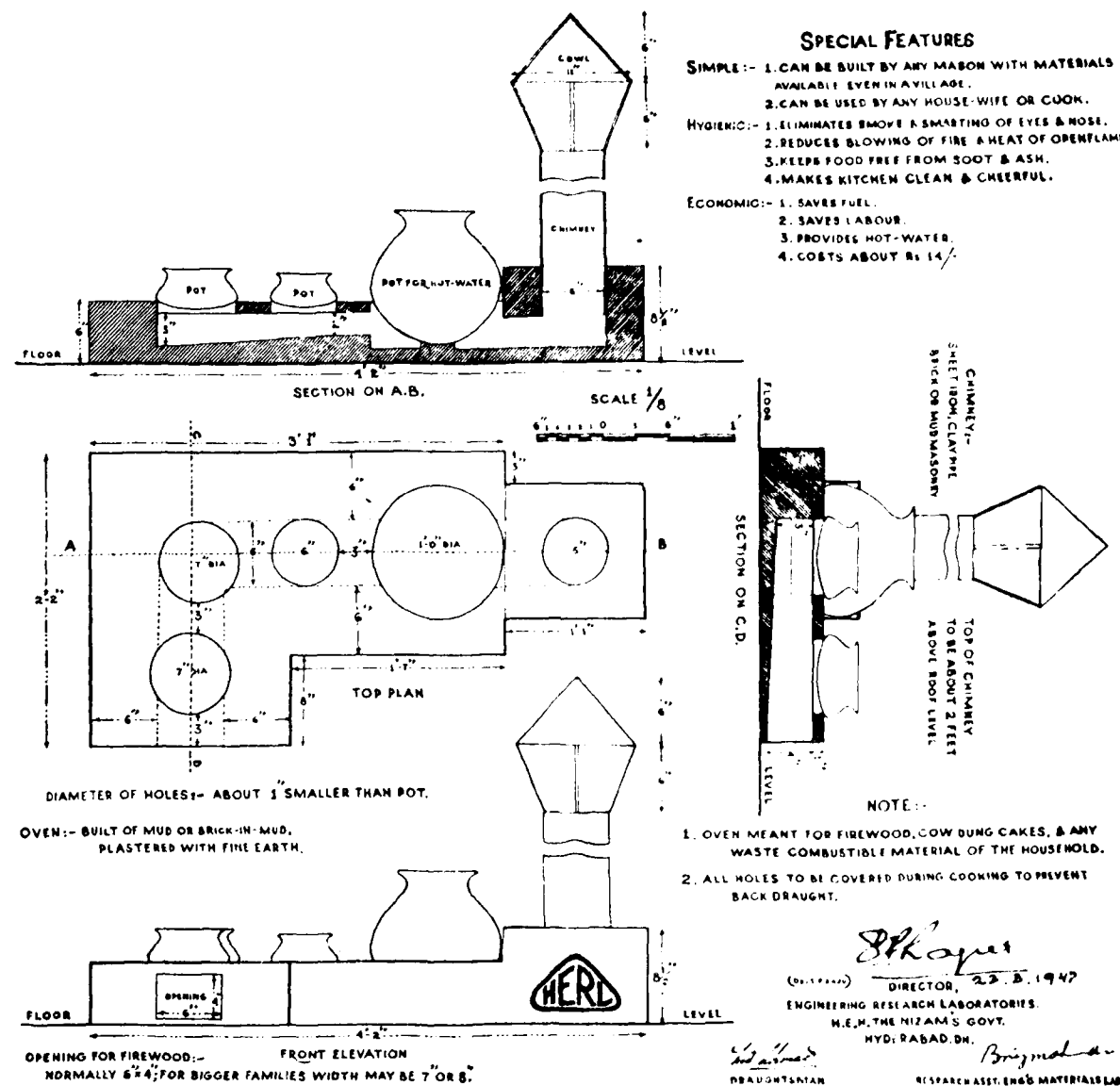
The Hon'ble Rajakumari Amrit Kaur, as truly worthy of a Woman

Health Minister of India, has got the Health Departments of the Central and Provincial Governments interested in this matter. Through the active interest of the U.P. Governor, Her Excellency Mrs. Sarojini Naidu, the U.P. Government "are anxious to popularize the chula among the masses" and "want as many copies of the leaflet in Urdu as can be conveniently spared, together with photographs or blocks of designs printed in the leaflet to enable us to get the Hindi copies of the leaflet printed here." Enquiries have been received from various States like Travancore, Mysore, Sind, Jaipur, Kholapur, etc. A notable person who believes in these simple stoves is Sir C. V. Raman, our celebrated Physicist, who in an appreciative letter to the Director has said: "Having seen the picture of it, I am perfectly prepared to believe the claim made on its behalf. Lady Raman and myself intend to put up one of these things in our village home."

NATIONAL DRIVE:

Mere propaganda is not enough. First comes example, which is better than precept: then legislation. It is here that a vigorous national drive is necessary. In the last analysis it is the Municipalities, District Boards, Village Panchayats and Women's Organisation that have to see that every housewife in the country gets the benefit of this smokeless stove.

With the new national Government thing of the past in India. I put this inspired by service to the common man, up as a challenge and an appeal to our is it too much to expect that by the end administrators and our educated of 1948 kitchen smoke should be a women.



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.)

RUSSIANS MAKE QUICKSANDS HARD AS STONE

Soviet scientists after long research have succeeded in converting quicksand into solid foundations for building or preventing its formation under existing buildings, Moscow Radio reports.

The method consists of introducing under pressure two solutions—the so-called liquid glass and calcium chloride—into the sand. The first, the Radio report said, displaces water from the sand and envelops the sand grains, and the second, reacting with the liquid glass, forms a hard compound which solidifies the ground.

Within ten days, the quicksand is converted into artificial sandstone hardly distinguishable from the natural variety.—UPA.

WHAT IS TOWN-PLANNING?

Town-planning is not mere Place-planning, nor even work-planning. If it is to be successful it must be folk-planning.

This means that its task is not to coerce people into new places against their associations, wishes, and interest—as we find had schemes trying to do. Instead its task is to find the right places for each sort of people; places where they will really flourish. To give people in fact the same care that we give when transplanting flowers, instead of harsh evictions and arbitrary instructions to 'move on', delivered in the manner of officious amateur policemen.

(Sir Patrick Geddes in India)

SORE NIPPLES: CAUSES AND PREVENTION

—Gunther, Mavis.

Lancet, 1945 November 10, 590—93.

The incidence of sore nipples has been estimated at over 50 per cent. of all lactating women and this condition is frequently the underlying cause of failure in breast-feeding. An investigation into the cause of sore nipples has been made by the author, and two common types are distinguished by the nature, position and time of onset of the lesions.

The erosive or petechial type is commonly bilateral and is most often found during the first week of nursing. In its simple form there is swelling of the papillæ, usually at the centre of the nipple, followed by petechiæ, with or without œdema. A severe type of this lesion occurs when the petechiæ merge to form a transverse red crescent across the nipple.

A mercury manometer, recording on a smoked drum and connected to a No. 14 soft catheter passed beside the nipple into the baby's mouth, showed the amount of pressure exerted by suction during feeding. It was found that an infant feeding quietly from a full breast produced a rhythmic negative pressure, released with each act of swallowing. Vigorous sucking on an empty breast, however, maintained negative pressure at a high level for several minutes, uninterrupted by swallowing. This investigation indicates that suction unrelieved by swallowing is the main cause of this petechial type of sore nipple. Venous congestion and low capillary resistance may contribute. There was no evidence that administration of vitamin C in a series of cases lowered the incidence of sore nipples, or that biting of the nipple was a cause of soreness.

The second type of lesion is an ulcer or fissure which never occurs before the 5th day, usually appears at the side of the nipple, and is commoner in well-informed nipples. It is suggested that this type of lesion is the result of mechanical trauma at a time when the œstrogen level has decreased after delivery, thus rendering the nipple epithelium vulnerable.

Prevention of the petechial type of lesion depends on the technique of breast feeding. The infant should not be allowed to suck for longer than 2 minutes at a time before the flow of milk is established, and it should take as much of the areola into its mouth as possible, thus avoiding venous congestion and trauma of the nipple epithelium.

H. M. Davis.

DISEASE BROUGHT ON BY MIND

A Doctor's view.

Half the people who call on doctors are sick in mind as well as in body! This is the opinion expressed by Dr. Flanders Dunbar of Columbia University's College of Physicians and Surgeons in her book *Mind and Body*.

She calls such patients as psychosomatics. They do not, she says, imagine their ailments; they may be seriously or fatally ill of real diseases. An upset mind can actually bring on or aggravate heart disease, diabetes, stomach ulcers, asthma and even tuberculosis.

"Sir William Osler, probably the greatest medical teacher who ever lived, once warned his profession that the fate of the tubercular depended more on what they had in their heads than on what was in their chests. A germ or a peculiar condition of body cells is not the sum and substance of disease."

(*Sunday Times*).

THE TOXICITY OF DISTEMPERS CONTAINING D. D. T.

—Barnes Sarah.

Reprinted from *J. Oil & Colour Chemists' Association* 1945 September, V. 28. No. 303. 181—4.

An extensive laboratory investigation was conducted with small blocks of "Insul" wood painted with distempers containing 5, 10 or 20 per cent. of commercial DDT. The DDT was added to the distemper in a variety of ways at different stages in the manufacture of the distemper, and the method of incorporation affected its final efficacy. For example, DDT added in large particles was more effective than a similar quantity added as a fine powder and distempers to which DDT was added after milling were more insecticidal than those to which it was added before this process.

The insecticidal values of the resulting distempers were estimated by test exposures in which bed bugs or houseflies were exposed to the surfaces for standard times at different intervals after application. The houseflies proved to be very much more susceptible than the bugs, since a deposit which killed 100 per cent. of flies in one and a half hours killed only 25 per cent. of bugs exposed to it for twenty-four hours.

The kills of bugs were disappointingly low, a twenty-four hour exposure never gave more than 65 per cent. kill. Furthermore, the quantity of DDT, used by this method was greatly in excess of an effective deposit applied by a simple spray method. Whereas 1.4 mgm. DDT. per sq. cm. in a distemper produced only a low partial mortality, a deposit of 0.2 mgm. DDT. per sq. cm. applied by spray killed all bugs after a similar exposure. Washing the distempers with soap and water, reduced their toxicity to bugs.

Tests conducted two months after application of the distempers gave results about equal to the test made when they were fresh, but a few tests made after a six months' interval gave indications of reduced toxicity.

J. R. Buscine.

IMPORTANCE OF INTERNAL ENVIRONMENT

A succession of Physiologists, from Claude Bernard to J. S. Haldane and Walter Cannon, have established the importance of man's internal environment; its delicately maintained stability is the condition of his being set free to think and feel and exercise his senses without keeping too sharp an eye upon the bare necessities of survival. Disturbances in this internal environment affect the psyche long before they cast a burden on man's other organs; and there is much reason to think that the opposite process also takes place; a succession of investigators from Janet and Freud onward have established the fact that psychic disharmony may disrupt the equilibrium of the whole physical organism and even cause drastic disturbances of function in one or another organ.

Man's sanity and health consist, in fact, in his maintaining this double balance: an even internal environment that frees the mind for independent explorations and a balance of mind that enables the body to function as an effective whole, despite continued changes of circumstance, changes of occupation, and changes of physiological equilibrium through growth itself. Change is a constant factor in all these processes; but not indefinite change, for all life maintaining changes are in the direction of equilibrium: those old standards of the Greek philosophers, harmony and composure under all circumstances, as in Socrates' imperturbable conduct at Potidea, have the sanction of scientific wisdom. That equilibrium is itself dynamic; for it is only by

accepting and controlling change that man can maintain his organism as its full capacity to function.

(From 'The Condition of Man' by Lewis Mumford.)

SOCIAL MEDICINE

—Greenwood, M.

British Med. Journal, 1946 Jan. 26 pp. 117—119.

The direct approach to a subject is not necessarily the most effective in all circumstances. A lecturer to medical students on the subject of social medicine might lay out his material simply by defining his terms, giving instances of work already done, to illustrate his thesis, and by outlining his suggestions for the future. Such a lecture or series of lectures would be informative, and would be necessary part of any course of instruction but it would contain information to be learned, and the proper place for that is within a course of instruction. A lecturer to the Cambridge University Medical Society might do as Professor Greenwood did, and choose an approach which gave emphasis less to the bare facts of the subject than to the spirit which underlies it. Greenwood used the historical method to present his view, taking his audience through a brief survey of the life of Alfred Grotjahn (1869—1931) "the first and, for all I know, the last Professor of Social Hygiene in the University of Berlin." Grotjahn was a general practitioner of medicine for more than 20 years, and his opinions on social medicine were formed as a result of that close experience of disease as it affected the lives of the people and as it was affected by them. Towards the end of the lecture Professor Greenwood, referred to that other general practitioner, W. N. Pickles, who, in Yorkshire, has turned his experience to such good effect, and he ended with remarks which embody the core of his argument:—

"Do not forget there is a research laboratory greater even than the Cavendish: the streets, the homes, the factories in which the common people pass their lives." The important, though not the only, tools of this research are real statistics and psychology.

Professor Greenwood's approach to the subject is effective and necessary.

Charles Wilcock.

IDEAL SEEING CONDITIONS. THE STUDY OF THE HUMAN VISUAL SYSTEM AS A BASIS FOR PRESCRIBING LIGHTING

—Nelson, J. H.

British J. Indust. Med. V. 2, No. 1.

If good seeing conditions are to be devised in industry and elsewhere, it is essential to deduce these conditions from knowledge of the complete visual system, and its functions and capacities. For the discrimination of an object from its background, four essential requirements must be satisfied, namely, (a) the size of the object must be such as to subtend a sufficient angle at the eye, (b) there must be sufficient contrast of brightness of colour between object and background, (c) the brightness of the object must be sufficient to excite response, and (d) the duration of view must be sufficient. These four interdependent variables have been extensively studied in investigations of the visual acuity threshold, and also in Studies of visual performance in supra-threshold conditions. The threshold conditions, as determined by Luckiesh (Luckiesh and Moss, "Science of Seeing," 1937, London Macmillan) are represented diagrammatically. Another important factor affecting visual resolution is the brightness of the object surrounds, the effect of which is shown in a graph plotted from Lythgoe's data (M. R. C., *Sp. Rep. Ser.*, 1932, No. 173). Of the different types of

resolution, vernier acuity, which has not been sufficiently studied, is much finer than visual acuity as measured by such tests as Snellen's types, or the Landolt broken ring, and it is probably more important in every day life. The effect of "grain-size" of the retina in limiting the discriminating power of the eye is discussed, but, doubtless by an oversight in proof correcting 0.001 inch, instead of 0.0001 inch, is given as the equivalent of 2—3 microns, which is the diameter of a foveal cone. The dependence of the eye's performance upon the brightness of the visual field is discussed with reference to unconscious eye movements and fixation pauses, as well as to the time required for nervous response, as shown by the experiments of Hartline (J. Cell. Comp. Physiol., 1934, V. 5, 229.). A section of the paper is devoted to the psychological effects of background brightness and colour and discussion of the latter is in terms of the Munsell system of colour specification.

The specification of ideal seeing conditions necessitates a thorough job analysis, which is often very difficult to perform, but from the study of threshold seeing, and the psychological effects of the surroundings, the following are suggested as a basis for ideals:—

- (a) Details should be as large as practicable, e.g., about 1/100 inch.
- (b) Critical contrasts should be as high as possible without causing glare, say 100 to 1.
- (c) The central field brightness should be of the order of 1,000 equivalent foot-candles.
- (d) The immediate surround field should be comparable in brightness with the central field, which, with the more remote surroundings, should be so coloured to yield variety without distraction.

- (e) The eyes of the operator should either be relaxed or accommodated well within the comfort range for the individual.

These ideals are not always practicable, but some attempts to realize them in industry are described.

H. C. Weston

PREVENTION OF SMALLPOX BY VACCINATION AND REVACCINATION

—Seal, S. C.

Indian Med. Gaz. V. 80, No. 6, 313—20.

The author defines his purpose as being to discuss certain irregularities in connection with the duration of immunity following vaccination and re-vaccination, and to find out to what extent the results of re-vaccination can be depended upon as a measure of immunity to smallpox. The paper is more a dissertation than a critical study of any special piece of field or laboratory work. The position of India, in regard to smallpox, is contrasted unfavourably with that in many other countries. With the possible exception of China, whence accurate figures are not available, India constitutes the main endemic focus of smallpox in Asia. The smallpox death rates per 100,000 population in India have fallen from 131.85 per annum for the years 1868—77 to 24.15 during 1928—37; yet in Ceylon lately the smallpox death rate has remained at about 1 per 100,000 population (no explanation of this difference is offered). In India the case fatality rate is given as about 50 per cent.; in U. S. A. during 1929—30 the rate for 88,994 cases was 0.4 per cent. (The effect of variola minor on these figures is not referred to; furthermore, the author's statement that smallpox has been completely eradicated by intensive vaccination and re-vaccination in Germany, Italy, etc., and in the Services and Postal Department of Great Britain cannot be accepted).

In Bengal recently, as a result of famine conditions, the incidence of disease generally has largely increased. A disturbing feature of the smallpox epidemic has been the occurrence of cases, in spite of re-vaccination "with its normal three types of reaction" having been performed well in advance of the incubation period. Similar published observations recently have indicated some uncertainty regarding the degree and duration of resistance produced by vaccination and re-vaccination. In this connexion the following factors are considered:— (1) Potency of lymph at the time of inoculation; (2) technique, including the number of insertions; (3) quantum of infection; (4) virulence of the virus. (5) Nature of the virus (such question as, "is the virus antigenically identical for all cases of smallpox in different countries?" arise out of difficulty in explaining the recurrence of "smallpox" among recently "successfully" vaccinated individuals); (6) aggregation and dispersal of populations, accentuated by war conditions; (7) effectiveness of re-vaccination in increasing immunity against small-pox: here the fundamental question is, what constitutes a successful vaccination? Of the four types of reaction:—(a) primary, (b) vaccinated or accelerated, (c) immediate, (d) negative, it can be said that immediate reactions (immune reaction is a misnomer) have been found in non-immunes and may have the same significance as a negative reaction: the latter, however, may be falsely negative by reason of:—(a) low-potency of vaccine, (b) faulty technique, (c) local immunity, or (d) "absence of any tissue response." A successful re-vaccination may be held to include only primary and vaccinoid types (vesicle formation), but a difference of opinion exists as to whether all reactions after re-vaccinations raise the level of immunity: the author inclines to the view that the immediate reaction does not produce this effect. (Experience in Glasgow

recently; which cause some surprise and which are referred to in this paper, merely confirmed that immediate reactions can occur in susceptibles and that vaccination after exposure, even if successful, cannot be relied on to protect.) The author finally enters a plea for compulsory re-vaccination, with potent lymph, as the most promising field for controlling the situation in India.

(The abstractor's views have often been stated. It is his experience that many of the difficulties referred to in this paper never arise when vesicle formation is regarded as the sole standard of success in vaccination or re-vaccination.)

J. Pickford Marsden

SOME OBSERVATIONS ON FLY BREEDING IN COMPOST TRENCHES

—Joshi, K. G. & Dnyasager, V. R.

Ind. Medi. Gaz. V. 80, No. 7, 358—61.

The necessity to increase the yield of food crops throughout India, and therefore to make the maximum use of the manurial value of refuse, has increased the use of compost, which has been criticized on the grounds that this method of refuse disposal does not prevent the breeding of flies. The authors have not found this drawback in Amraoti, Central Provinces. In compost heaps utilizing rubbish but not nightsoil, surface temperature during the summer exceed 55° C. after the first two or three days, and 60° C. after the first week keeping at this latter level for about a fortnight. As a result, fly-breeding does not occur on any important scale, often no maggots or pupæ can be found, and rarely do they exceed 6 per sq. ft.

During the rainy season, conditions for decomposition in the compost mass are less favourable for decomposition, temperatures do

not reach such high levels, and there is usually considerable variation depending on rain fall conditions. In seven trenches (for which details are given) the maximum temperature varied from 35° C. to 54° C., and as a result maggots and pupæ were numerous, about one third to one-half of the refuse being heavily infested. Not all of these, however, reach the fly stage; three tests, involving removal and maintenance of 91 pupæ under favourable conditions, resulted in the emergence of only 12 flies.

(The weight of the evidence that very numerous maggots appear in the rainy season is not matched by similar weight in the evidence that only a small proportion proceed to hatching. The reader is entitled to draw the conclusion that compost heaps remain an important fly breeding source during this season).

G. Macdonald

CAUSE OF HIGH BLOOD PRESSURE

Anxiety to Blame.

What causes high blood pressure?

Dr. Hans Selye of Montreal University claims to know the answer. For long he has been experimenting with guinea pigs subjecting them to cold and heat, shock and anxiety and from the data collected he arrived at the answer to the problem.

According to him the main trouble makers are the adrenal glands. When man is subjected to emotional stress, these glands go into action releasing the gland hormone which in turn causes high blood pressure and kidney damage.

The doctor has found that the antidote for this is a diet deficient in sodium or large doses of ammonium chloride.

(*Sunday Times*)

THE ROLE OF DDT IN CONTROLLING INSECT-BORNE DISEASES OF MAN

William S. Stone.

Jour. Amer. Med. Assoc., 132, 507-9 (Nov. 2, 1946).

"From the data available on DDT (4, 4'-Dichlorodiphenyltrichloroethane), the following conclusions may be drawn:

1. Its outstanding property is that in proper concentration, in a dispersed state, it continues to be a potent contact insecticide for several months.

2. It is a weapon of a major importance which can be used to solve many problems of insect control.

3. It is relatively safe from the toxicologic point of view, and cases of DDT poisoning in human beings are not likely to occur when it is used as a household insecticide."

(*P. H. E. Absts.*, Vol. XXVII, No. 4.)

BREAD—

McCance, R. A.

Lancet, 1946, Jan. 19—p. 77-81, 3 figs. (21 refs.)

This is a very readable, almost, "popular," review of the subject of wheat and bread. Details are given of the composition and nutritive qualities of various extractions of wheat, and of the character of the bread baked from them. Professor McCance, as a nutritionist, would like to see the 85 per cent. flour and the "National" loaf reintroduced. If the health of the people really is the first consideration in our bread policy, the cheapest, safest and easiest way to maintain this is to keep up the extraction rate of the flour used for bread-making. Everything we know about biology and nutrition is opposed to the practice of artificial enrichment, for man can only put back what he knows he has taken out.

The difficulties associated with 85 per cent. flour are recognized, but are believed to be less than they are portrayed. A major need in controlling milling and the value of flour is a good test for the extraction rate.

H. E. Harding.

REPORT ON MALARIA CONTROL IN RURAL NATIVE AREAS BY USING DDT INSECTICIDE

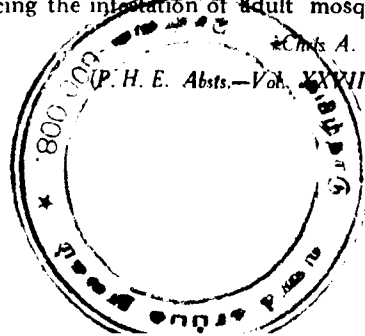
F. W. P. Cluver.
So. African Med. Jour., 20, 368-70.

An account is given of an experiment comparing the effectiveness and cost of adult mosquito control by DDT spray and pyrethrum. The experiment was conducted in a portion of No. 3 Reserve, Hlabisa District in Zululand, S. Af. Native thatch huts approximately 12' in diameter and 8' to 9' high at the apex were divided into four groups. The first was sprayed once with 5 per cent DDT in paraffin, the second and third at weekly intervals with pyrethrum, and the fourth was used as a control area.

After 14 weeks, a comparison of costs and effectiveness was made and clearly indicated that DDT was less costly than pyrethrum when used as a mosquito adulticide. The cost per hut per application for DDT was 8.4d., as compared with 2s. 1.3d. for pyrethrum. Checks for presence of mosquitoes were made at each hut every week. Tabulations showed that DDT was 99.2 per cent more effective than pyrethrum in reducing the infestation of adult mosquitoes.

*Chris A. Hansen.

(P. H. E. Absts.—Vol. XXVII, No. 4)



THE TRANSMISSION OF DISEASE BY SEWAGE

Robert Newton Clark.
Sewage Works Jour., 18, 1138-43.

As factors in the transmission of disease the author names first an infectious source, second, a transmission channel, and third, a susceptible individual. Sewers must be considered a direct continuation of the diseased intestine. The paper reviews the history of the classic cases of disease transmission by sewage and names the many varieties of intestinal water-borne diseases. Included in this category are typhoid, paratyphoid, dysentery, cholera, diarrhoea, fluke infection, etc. Other water-borne diseases include schistosomiasis, infectious hepatitis, and possibly poliomyelitis.

George E. Symons.

(P. H. E. Absts.—Vol. XXVII, No. 3)

FACTS ABOUT CHLORINE

Wilmer H. Koch.
Sewage Works Jour., 18, 1194-98

A general description of the preparation, handling, reactions, and hazards of chlorine. At a temperature of 72° F. the pressure in the cylinder will be 85 lb. At the temperature of boiling water the pressure will be 540 lb., but a fusible plug softens at 157°-165°F., so that the gas will escape before the cylinder ruptures. Feed water should be maintained at a minimum of 50° F. to avoid crystalline hydrate formation. If chlorine is inhaled it irritates the mucus membranes and causes injury to the body tissues. For severe cases of irritation absolute rest for 24 to 48 hours is essential, and administration of oxygen may be helpful. Handle chlorine with respect for its hazards.

Robert Shapiro.

(P. H. Absts.—Vol. XXVII, No. 3.)

MODERN SANITATION

TO
RESIDENTIAL BUILDINGS
PUBLIC OFFICES
SCHOOLS, COLLEGES
CINEMAS, THEATRES
NURSING HOMES, HOSPITALS
WORKSHOPS, FACTORIES
MILLS - ETC. ETC.

INSTALLED BY:

KING & COMPANY
SANITARY ENGINEERS
321, THAMBU CHETTY STREET, MADRAS

PHONE

*

2364

AJAX ABRASIVES

- FLINT (Sand)
- GARNET
- EMERY
- SILCARB
- AJAXITE
- PAPERS, CLOTH
- DISC, ROLLS,
- BELTS, ETC.



AJAX quality coated Abrasives are used by all branches of Engineering for metal, leather and wood work. AJAX Abrasives cut quickly and cleanly, speed up production and produce a superior finish in fine work.



AJAX PRODUCTS LTD.
106, ARMENIAN STREET, MADRAS

Managing Agents: **MURUGAPPA & SONS, MADRAS,**
Sole selling Agents for South India :
MARSHALL SONS & CO. (INDIA) LTD., P. O. No. 141, Madras.



Give the utmost while you may ;
Life has its vicissitudes ;
Wealth does not remain with men ;
Go on investing
in **National Savings Certificates.**

This investment assure safety,
both of capital and interest ;

Its value increases by FIFTY per cent
in **Twelve** years ;

No income-tax on the interest you gain

Small savers also are given facilities to invest

*

ABOVE ALL, YOU HELP OUR NATIONAL
GOVERNMENT TO SERVE OUR
TEEMING MILLIONS

*

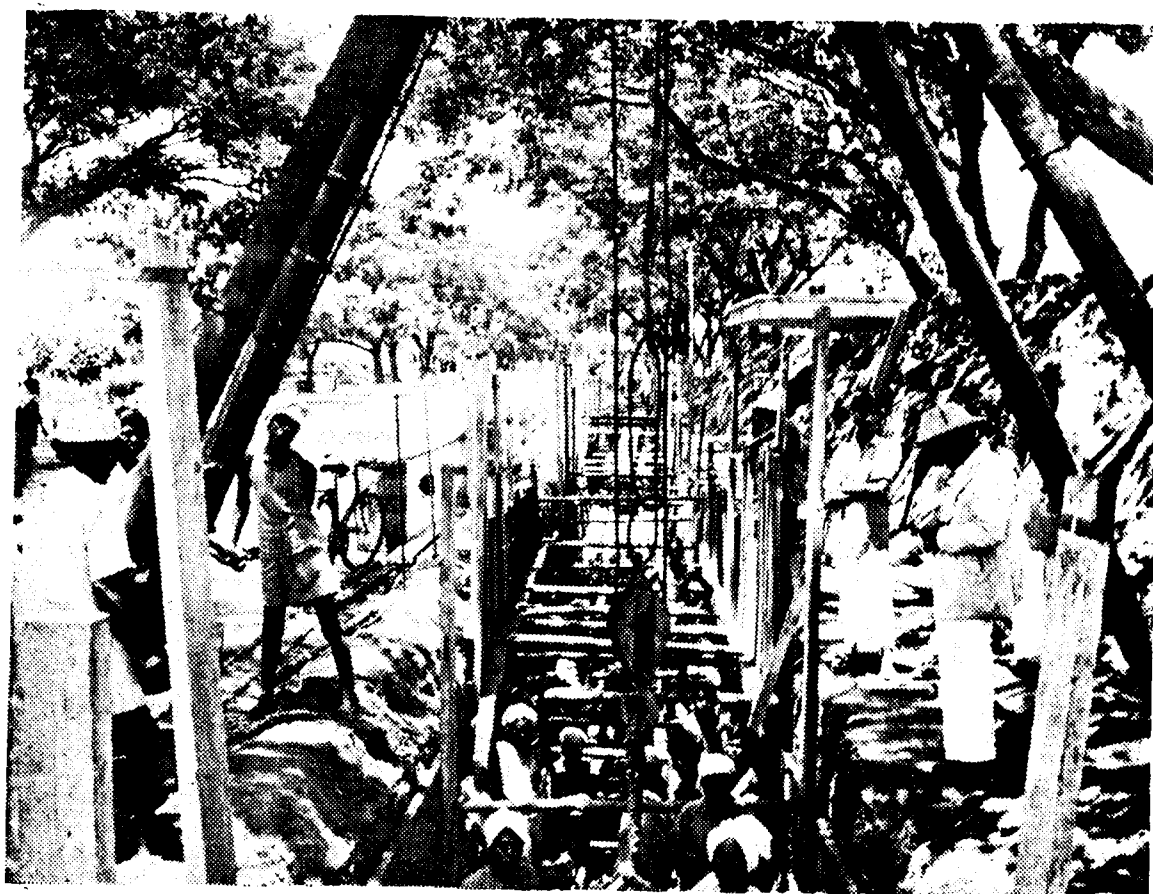
TO WHAT BETTER PURPOSE
CAN YOU PUT YOUR MONEY?

*

Certificates and stamps are obtainable from Post
Offices, authorised agents or Savings Bureau

P. N. S. O.

MADRAS



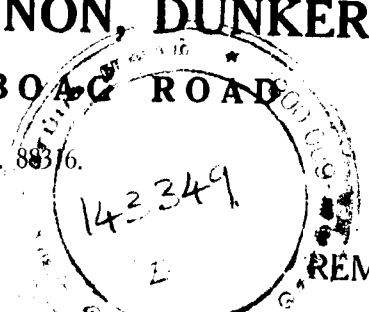
GANNON, DUNKERLEY & CO. (Madras), Ltd.

14, BOAC ROAD

MADRAS, 17

Phone No. 88376.

Telegrams "VITOPUS" Madras.

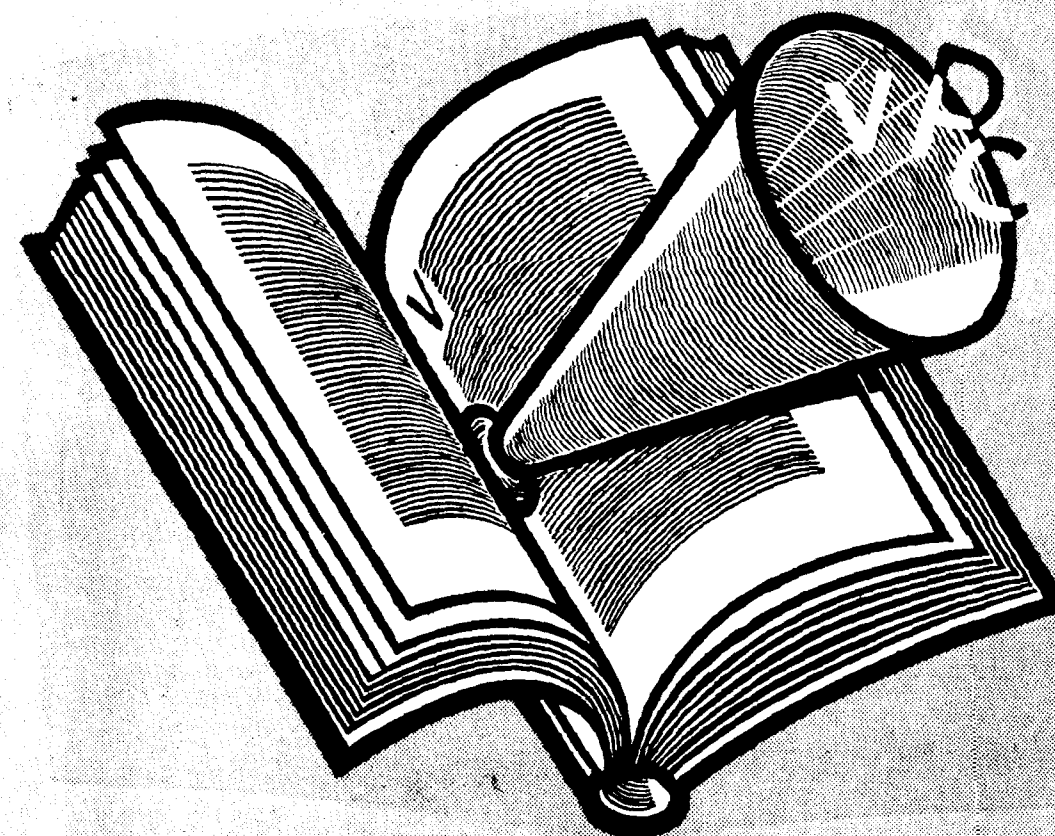


REMEMBER

Once pipes are buried, they cannot be readily exhumed for rectifying defects.

Sewer laying should be done only under Specialist Supervision.

We are the outstanding Specialists in the field.



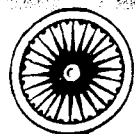
BOOKS AND STATIONERY



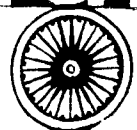
V. PERUMALL CHETTY & SONS
STRINGER'S ST. - P. O. BOX 89 - MADRAS



GO



Madras



TTED PRESS - DIE STAMPING - BLOCK MAKING - GEECED