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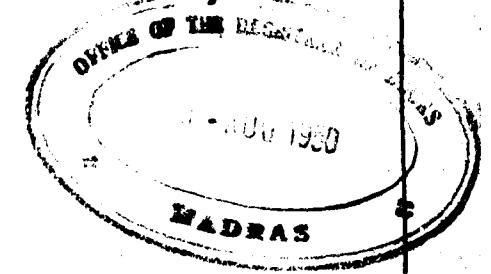
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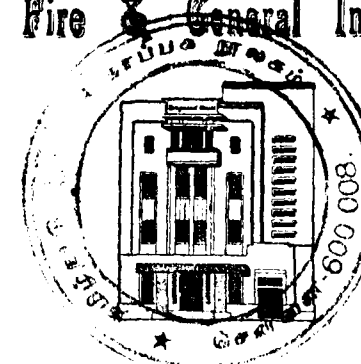
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PEOPLE'S HEALTH



EDITOR
A.V. RAMAN

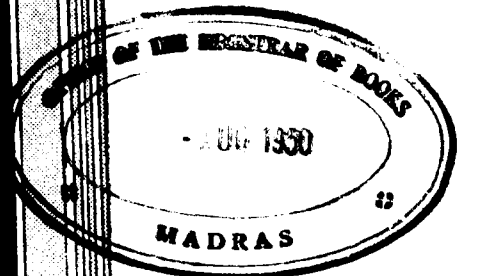


VOL. IV

JULY 1950

NO. 10

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1. Kindly **do** notify any change of your address. Unless this is done, there are chances of the copies of the magazine being misdelivered for which we cannot be held responsible.

2. Our responsibility ceases when we deliver copies of the magazine at the counter of the Post Office, Royapettah, Madras - 14. Unless intimation is received of any non-receipt of copies of the magazine within the 15th of the following month, we cannot entertain any complaint after that date.

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MADRAS-14.

MANAGER,
People's Health.

PEOPLE'S HEALTH

A Pioneer in the Field of Public Health

Vol. IV

JULY, 1950

No. 10

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Schemes of Men and Mice to solve the housing problem are in the air, but the final houses on land may only serve creatures, nearer mice than men.



VOL. IV No. 10

JULY 1950

ISSUED MONTHLY

EDITORIAL

The solution of the private house or a house in a community development analysed in terms of present and postwar techniques must embrace the consideration of social, economic aspects and the aesthetic development of the occupant, the region, the scientific discoveries in the manufacture and application of materials and tools, together with the technical cooperation (or lack of it) of craftsmen, and the mental development, both social and aesthetic of the architect, with his ability in analysing and coordinating the above.

—RAPHAEL S. SORIANO.

OUR HOUSING PROBLEM

WE have commented on this question in the past. We have made constructive suggestions for the consideration of all concerned. And still, next to nothing has been done to alleviate the misery of the homeless. Each one says what strikes his or her mind, and concerted co-ordinated action is sorely needed, as the houseless man realises, to his dismay, distress and anger.

The Ministry at the Centre has made a show of solving the problem by setting up a factory to manufacture pre-fabricated houses. The Ministry of Health, apparently on the advice of

half-baked experts, has embarked upon a scheme which augurs well to prove to be an expensive failure. Mr. H. V. Kamath, M.P. interested himself in the subject and condemned the scheme for very good reasons (*vide* PEOPLE'S HEALTH, page 362, Vol. IV, No. 9). Without meeting the points raised by Mr. Kamath, the Minister of Health characterised all adverse comments on her actions as 'uninformed criticism.' This is not the first occasion when she has brushed aside opinions opposed to her as by just dubbing them as *uninformed criticism*. When we set out our reasons to prove how ill-advised

companies could all be utilised to tackle our housing problem. But no such agency should be allowed to go forward with the construction, unless and until the layout, the design of the house, the materials of construction and similar other particulars have been settled beforehand and approved by an independent housing authority consisting of specialists in the various fields.

Recently, the Government of India have circularised State Governments to review their housing schemes and, if necessary to modify them to the extent called for in the recommendations of the High Power Committee on Housing. The Committee had recommended the various State Governments should explore possibilities of floating housing companies in which private capital would participate along with State capital. The Committee, it is understood, has also recommended that not less than ten per cent of the houses on the new sites earmarked for displaced persons should be constructed

by Government at their own expense. The Government of India, however, seem to feel that no hard and fast rules could be laid down in this respect and it has been decided that the Government should construct a sufficient number of houses which would attract others to new sites to enable the development of those sites. The State Governments can now persuade leading engineering contractors, engineers, builders and others to come forward with suggestions for floating housing companies in which the State could also take a leading part by advancing fifty-one per cent of the capital. Will our authorities move?

We would remind our popular Ministries that, unless and until they do something in this and other directions to provide civilised elementary amenities of life to the masses, and contribute to the general improvement of the environmental sanitation in the country, they run the risk of being discredited which is but a step from ejection out of office.



A SOLUTION TO OUR HOUSING PROBLEM

by

M. R. Venkataram

Chief Engineer, B.B. & C.I. Ry.



ALWAYS a pressing problem the housing shortage in this land, has been further accentuated due to the influx of refugees and the general flocking into urban areas on account of the economic situation in the country. Unless solved very early, this crisis bids fair to cut at the very root of all progress. A solution is imperative from all aspects. The sufferings and the misery of the homeless millions are a source of potential danger not only to the body politic but also to the very economic structure of our society. The inhuman slums alongside palatial mansions in our cities are in themselves an abiding shame and indictment of the Indian people in international eyes.

In spite of several blue-prints and suggestions galore and the avowed anxiety of all Governments, even the fringe of the problem has not been touched yet. Shortage of labour and materials is the usual reason trotted out for this failure. Our Engineers and public men are still exceedingly con-

servative, and modern progress seems to have left them cold. Either they stick to their old conventional methods of construction or they go in search of foreign aid for men and materials and scientific thought. They never look to the vast resources of this country with a view to utilizing them to the fullest extent.

The author after considerable research has adopted a type of house (*The GUNITE HOUSE*), which has already been extensively tried out in America and has developed it so as to make it within easy reach of the poor and the rich alike. It is probably the first of its kind in India and the prefabricated type evolved by him is probably the first of its kind in the world. For the B.B. & C.I. Railway, the author has already constructed over 400 houses, single and double-storeyed, and by the end of this month several units including one three-storeyed block of 6 units will be ready for habitation and nearly 200 are projected for this year. In this connection the reader's

she was in starting a BCG campaign in this country, she closed her eyes and following the usual practice, characterised all adverse comments as *uninformed criticism*. She did not however come forward to meet the points urged. From the attitude of the Minister, it is clear that what is wanted is meek submission to authority and not helpful advice from the people—and this attitude in a Democracy! Are we in Nazi Germany? The Parliament would do well to demand a public enquiry into the two pet schemes of the Ministry, namely, “BCG vaccination and Prefabs.” Such an enquiry would be helpful in checking other wild cat schemes that might be up the Ministry's sleeves.

OPPOSING FORCES

India's Prime Minister has publicly called upon the country to utilise *local talent and local materials* to grapple with our vast housing problem. He realised that India could ill-afford to import men and materials from foreign lands to solve this stupendous problem. Wise words, indeed! But his colleagues, the Ministers for Health and Rehabilitation, have relied upon imported men and materials to solve our problems. The efforts of the Minister for Rehabilitation have already been proved to be an utter failure, indeed a scandalous failure. The Health Minister blamed her

colleague, the Rehabilitation Minister, for the failure of the scheme to house the refugees in prefab dwellings; the plight of the impaled persons was forgotten in the quarrel! But the then Minister of State is not in office now. Even if he were, it is extremely doubtful whether Parliament would hold him personally responsible for his policy. So far as the Minister of Health is concerned, she has advised the country to “wait and see” the success of her scheme of prefabricated houses. We need not wait to see at all. In England too, we learn, the fantastic expectations about prefabs are vanishing into thin air, and that type of dwelling is proving to be less long-lived and less resistant to the onslaughts of Nature. What is true in England, should be doubly so in India, where the prefabricated house is subject to greater hazards, climatic and otherwise. The Minister of Health would rather pin her faith on the advice of a foreign expert than on the unbiased scientific opinion from other very top ranking men. By the time her scheme proves a dismal failure, many changes might take place and no responsibility can be fixed on anybody. Her so-called technical advisers would have also left the country by then with big bank balances to their credit! Incidentally, we are reminded of what an expert of the Ministry said in regard to prefabs. He said he had

been living for some time in a pre-fabricated abode and found it convenient. When a man gets a monthly pay cheque as huge, he could afford to stay in a pigsty of his own design and wax eloquent; money can make one forget whatever inconvenience there is. However this sort of interested propaganda fools no one. So far as the State Ministries are concerned, their schemes are vague and indefinite and they are content if the masses get doped by their claptraps.

HERE'S ANOTHER CONSTRUCTIVE SUGGESTION

We have suggested methods by which our housing problem can be solved and solved effectively. (*Vide PEOPLE'S HEALTH*, page 309, Vol. IV, No. 8.) Mr. M. R. Venkataram, Chief Engineer, B. B. & C. I. Railways, Bombay, has come forward with another constructive suggestion for the solution of the problem. His article on the subject appears elsewhere in this issue. We commend a close perusal of it by the authorities as well as the engineering profession. His suggestions are based on *practical experience*. He has put in practice what he has preached and the houses are there for all to see. It is clear that his method of construction offers a remedy to provide houses at low cost, not only for the low income groups but also to the middle classes.

We have a fear that Mr. Venkataram is throwing pearls—as Mr. Churchill would say,—before those who can't appreciate them! If his suggestion is taken, there is some hope of the problem getting solved.

The plan of the dwelling may be varied to suit the requirements of the various parts of the country in consonance with the modes of family life. The layout of housing colonies can also be varied according to circumstances but adhering to the fundamental requirements of health and sanitation. The minimum amenities of life can also be provided for. But as we have suggested already, the plan should be worked out by a *team of experts* and not by a single architect, engineer or builder, however eminent he might be. In our country, importance is still attached to individuals and the public benefit which might accrue by team work is forgotten. We, therefore, appeal to all professional men to develop a team spirit and thereby help our administrations to plan their housing schemes.

AGENCIES FOR EXECUTION

As regards the agency for execution, it is wholly wrong to attempt a solution of the problem by depending upon any single agency. Co-operative housing societies, municipalities and local boards, private building contractors and other limited liability

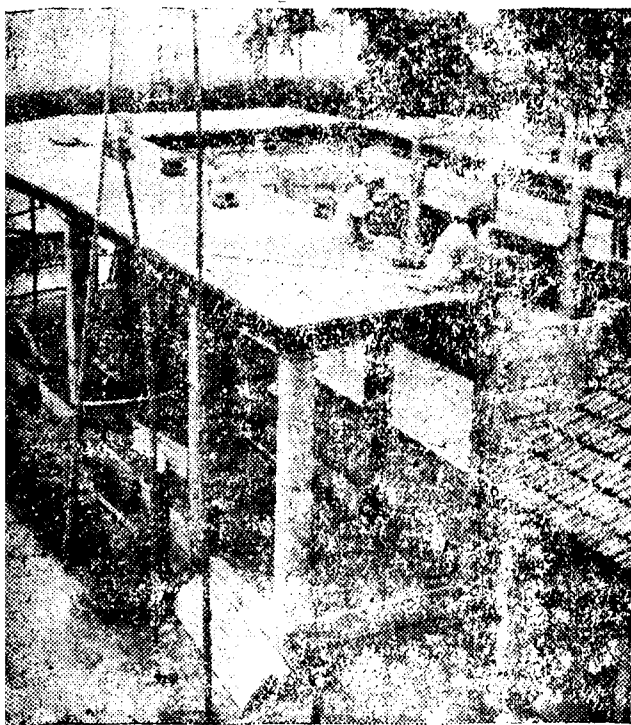


Fig. iii. Season Ticket Office—prefabricated guniting type—under construction in the compound of the B. B. & C. I. Railway General Offices, Churchgate, Bombay.

(Walls, columns and roof slabs are all of prefabricated guniting units—Beams are M. S. Channels encased in guniting).

(3) Houses with all components prefabricated.

The author recommends the prefabricated type as the one that is best suited to mass production methods and hence the most economical.

Regarding the other types of houses, viz., Nos. (i) and (ii), reference can be made to articles that have appeared in the *Quarterly Technical Bulletin* issued by the Railway Board in January, 1949, and in the *Indian Concrete Journal* of March, 1950.

The Prefabricated Guniting House.—As is indicated by its name, all its component parts, viz., walls, columns, beams and roof

are precast at a central depot and then conveyed to the site for erection. A fundamental difference between this and any other type is that all component parts are easily portable, whereas, in the other types, very few parts can be so handled. Further, no big factory or expensive machinery is required as for other types. A casting platform of adequate size (of a layer of brick plastered over) and a curing tank at a central depot and by way of machinery a cement gun and an air compressor of 210 c.ft. capacity are all that is required. The casting platform should be of a size to accommodate a daily output of 1,000 sq.ft. of guniting slabs per gun. Over a hundred numbers of this type of prefabricated guniting houses have been already built on this Railway. Intended primarily for labour and artisan staff, the accommodation provided therein consists of:—

2 rooms	10' × 10'	} giving a living area of 320 sq.ft. and 372 sq.ft. of plinth.
1 verandah	10' × 6'	
1 kitchen	6' × 6'	
1 bath room	6' × 4'	

Built at an average cost of Rs. 2,400 per unit, the cost per square foot of plinth area works out to less than Rs. 7, a relatively low figure when compared to the cost of the other types of prefabs. or even the conventional brick type quarters.

The types of members comprising the building can be standardized and reduced to a minimum number which enables their mass production resulting in considerable economy. This standardization however does not preclude the use of this type of construction for large buildings. With a judicious choice of the standard lengths of panels this type of construction can be

adapted to almost any structure. Without in any way changing the lengths of standard wall panels, a season ticket office, a workshop, and signal cabins have been designed and are under construction, while an additional floor for a college hostel is being designed and is shortly expected to be undertaken. Photographs of various types of buildings put up are shown.

Method of Construction.—The wall and roof slabs, column blocks and beams are all precast at a central depot and then transported to the site for erection. The foundations are got ready, after which the column blocks, each one foot deep are laid one over the other, in cement mortar. After 24 hours or so, the wall slabs are slid into position. Holes in the column block may be filled with cement guniting (1 : 8 or 1 : 10) or concrete although this would appear unnecessary. In the double wall type, the space between the wall slabs may be filled with earth or left unfilled. Beams are lifted on to the columns by means of a wooden pole with lifting tackle. Over the beams, the precast roof slabs are laid. A gang of 8 to 10 men can normally erect one house in about a week or so.

Normally after the walls and roofs are erected, guniting over these is not essential. As the slabs are all being laid in mortar, the building is thoroughly impervious. However, where extra strength is needed and where a guniting machine is available, the walls can also be gunited both inside and out and finished as desired. Similarly, for the roof a $\frac{3}{4}$ " to 1" guniting can be given over the flat slabs on chicken mesh netting spread over the slabs. This will give a fully impervious roof. However, it is not always

possible to buy a guniting machine for private house building. Individual house builders can buy all the components from a central depot and after erecting the house as stated above, the outside and inside of the house can be nicely cement plastered and finished as desired. For this purpose the slabs must all be made rough on both sides while casting. This can be done by scratching them while fresh with a prong or a wire brush. As for the roof, a layer of 2" to 3" cement concrete or lime concrete with tiling can be done as in the case of usual buildings. Thus houses can be put up by any person without owning or hiring a guniting equipment.

In the case of multi-storeyed buildings, the present practice is to cast the columns and roof beams *in situ* in order to give a rigid frame work. Experiments are now afoot to obtain the same rigidity, entirely using prefabricated members, with the junction at the beam and column ends only being cast

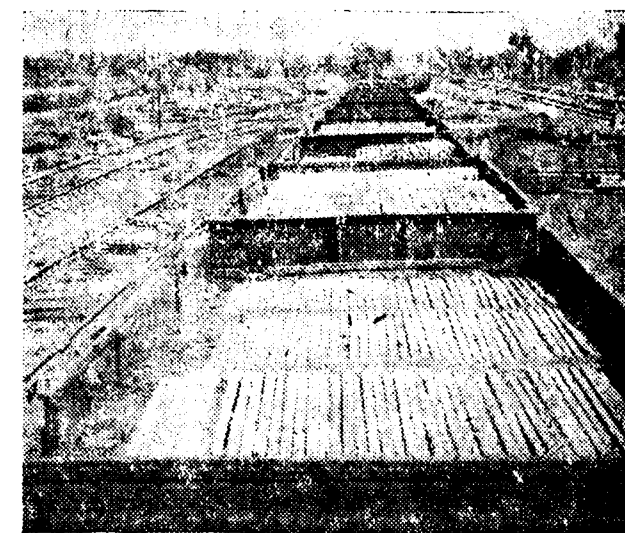


Fig. iv. Precast units being sent by train from Bulsar to site.

attention is invited to an article entitled "Prefabricated 'Gunitite'—A low-cost method of building Concrete Houses" written by the author in the *Indian Concrete Journal* of March 1950.

The material used in this type of construction is termed "Gunitite" as it is shot through a special machine called a "Cement Gun". Gunitite is a mixture of cement and sand shot under a pressure of about 40 lbs. per sq. in., as a spray from a cement gun on to prepared forms, water being added also as a spray only at the nozzle. In guniting, the mixture gets a high intensity of vibration and becomes a dense and homo-

geneous mass. It requires only 3 to 4 days for curing (or maximum of 7 days in special cases) against 21 days for ordinary cement concrete. It is three times as strong as cement concrete.

Gunitite is not unknown in India. Its use, however, has been limited mainly to repair cement concrete work and to waterproof and strengthen irrigation dams, etc. This has made some of the technical men in this country to restrict it only to such work and to hesitate using it in new construction. The tragedy of this attitude, though amusing, is that the country suffers, as a most valuable material has been thoroughly

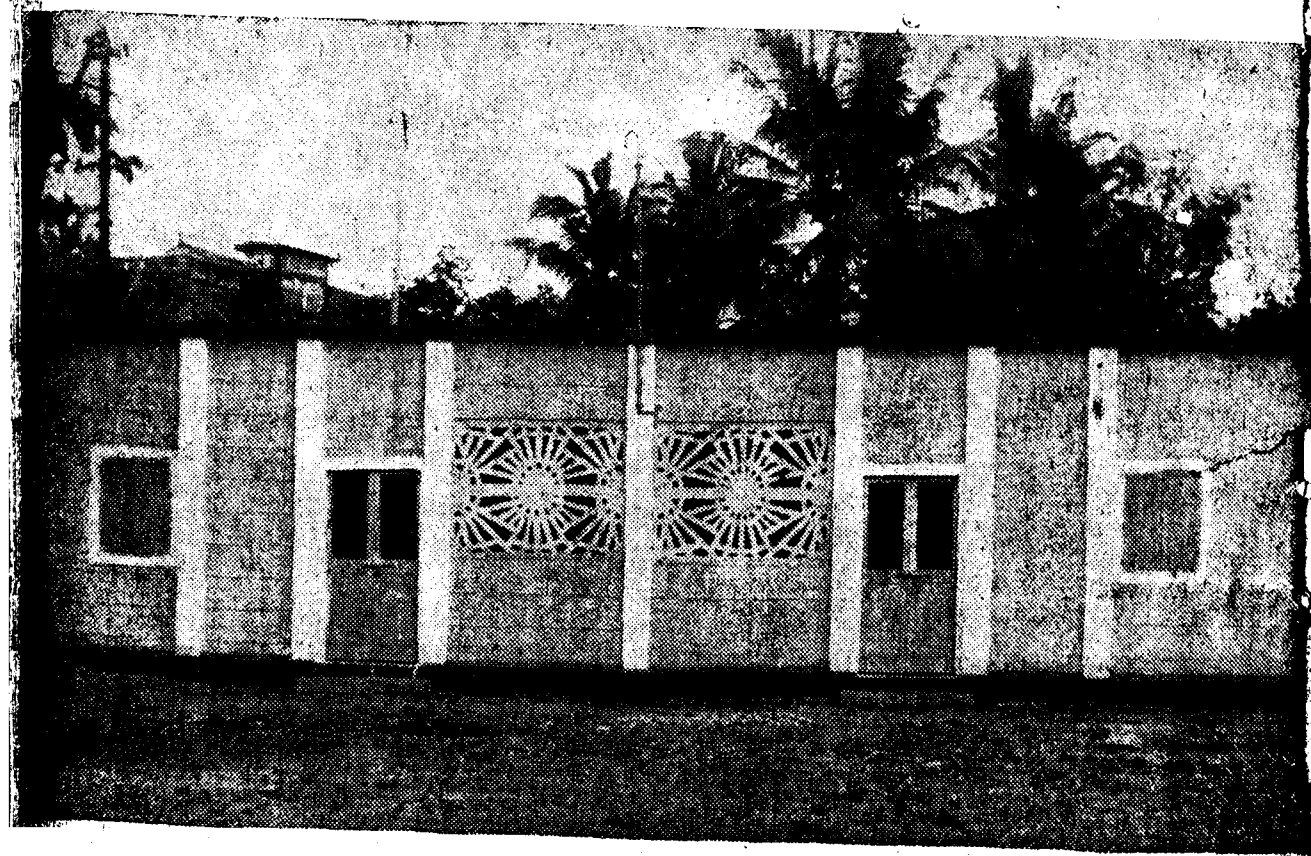


Fig. 1. Prefabricated, single wall, single floor, flat roof, GUNITITE HOUSE at Vile Parle, Bombay.

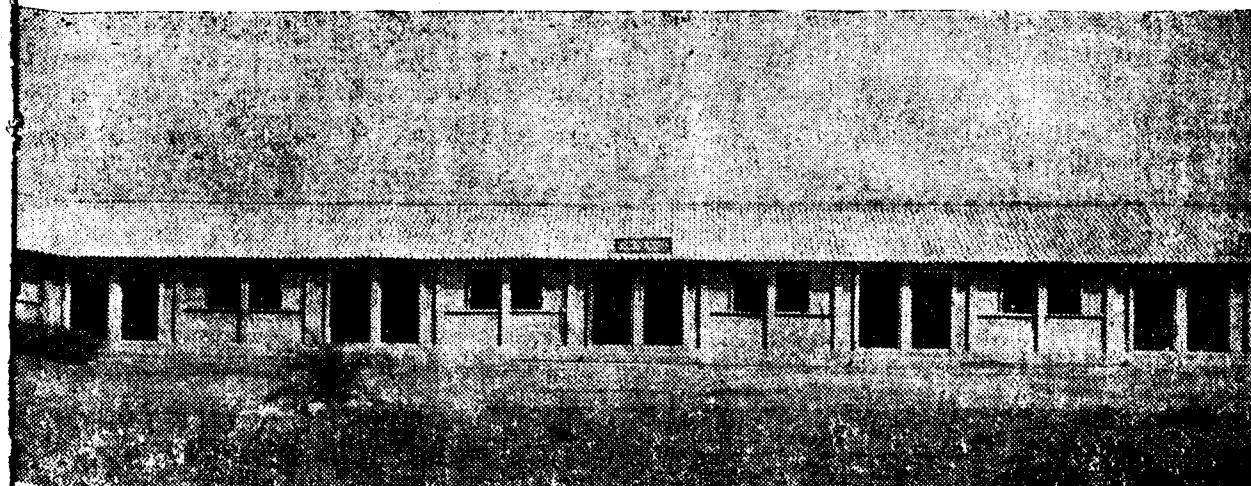


Fig. 2. Prefabricated gunit chawl (10 units) at Bulsar

neglected and is not being exploited as it should be. The fact that gunitite buildings have been constructed in America as far back as 1915 and are still standing to-day with little or no maintenance, bears ample testimony, however, to the adaptability of this material to new construction. In this connection the following extracts of a letter received from the Cement Gun Co. Inc., Allentown, Pa, U.S.A., are of interest:—

"It is our distinct feeling that the life of buildings wherein use is made of gunitite will outlast brick and mortar construction.

Our experience in examining the interior walls of buildings, which have been constructed entirely of two inch gunitite has shown that these are in excellent condition.

We have samples of excellent conditions after thirty years, so we feel that it is practically impossible to estimate the life of gunitite".

The advantage of gunitite lies in its strength. With higher working stresses, reinforced gunitite members can be made to smaller dimensions with a proportionate decrease in the cost of construction. As it is possible to make the wall and roof members comparatively lighter than with ordinary cement concrete, the cost of foundations is also very much less. From the experience gained on this Railway, it has been found that the Gunitite House is not only a practicable proposition, but also one that is conducive of speed, economy and permanence—factors that are a *sine qua non* for an immediate solution to the housing problem.

The types of gunitied houses that have been built to-date on this Railway are:—

- (1) Houses with 2" thick reinforced cement gunitite walls and columns (cast *in situ*).
- (2) Houses with *in situ* gunitied columns and walls of 4½" sundried and burnt bricks gunitied ½" on both sides.

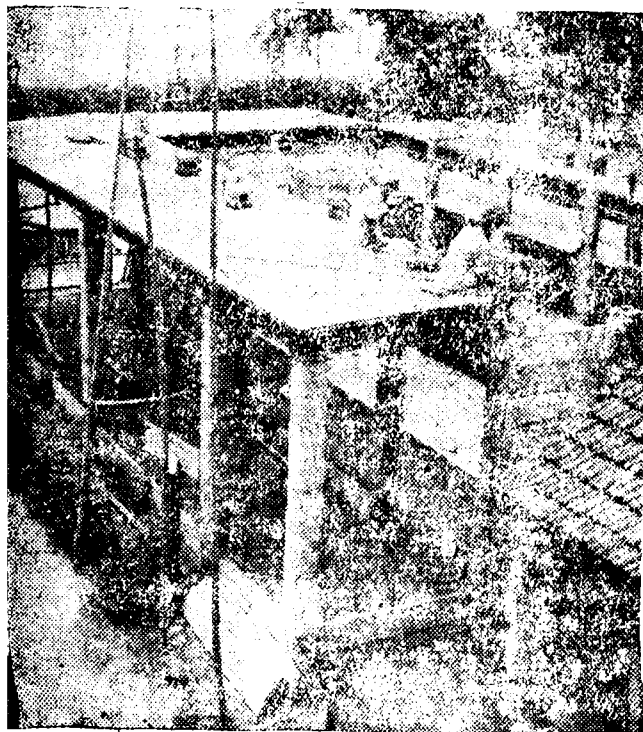


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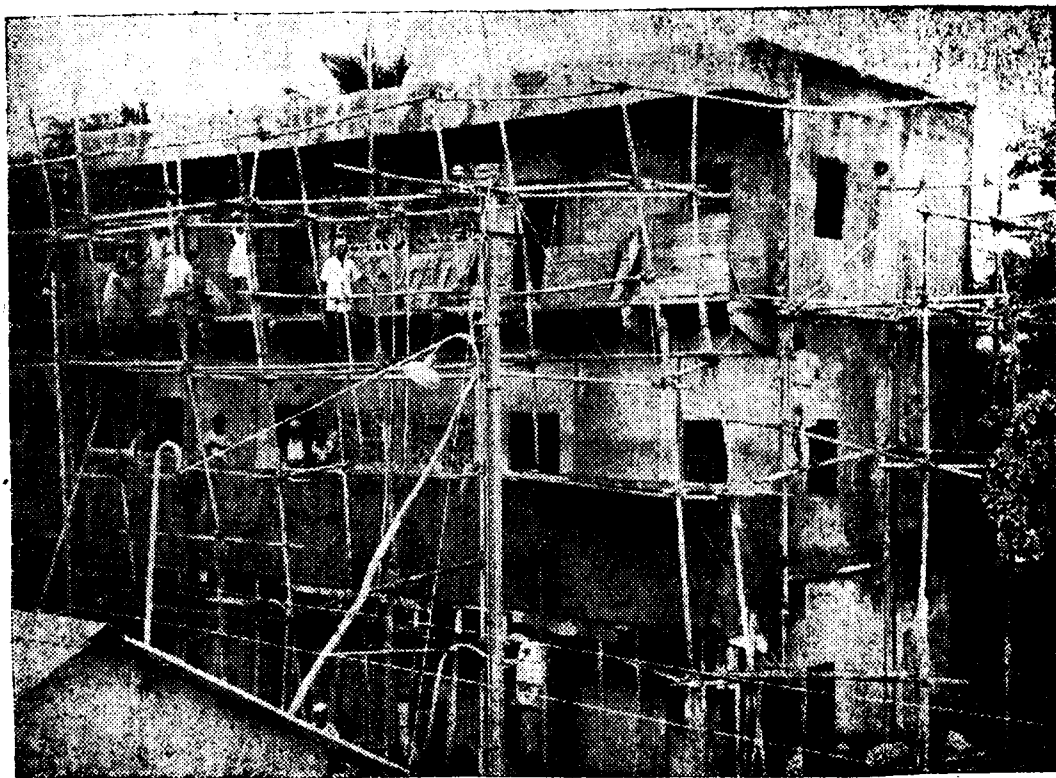


Fig. v. Three-storied quarters—prefabricated gunite type under construction at Vile Parle, Bombay.
(Wall and roof slabs are prefabricated units and only the columns and beams are cast in situ.)

at site. The experiments so far conducted promise success. Photographs of the casting of the members in progress and of curing are illustrated herein.

Speed.—A cement gun and compressor can cost about 1,000 sq.ft. of wall slabs per day of 8 working hours.

Composition recommended—

Wall slabs 1 : 6 and 1 : 5 if these are to be transported over long distances.

Columns 1 : 4

Roof and floor slabs 1 : 4

Columns may be hand filled from the rebound, obtained while guniting with the addition of extra cement.

Materials—

Cement 120 bags.

Sand 1,000 c.ft.

Reinforcement 4 cwts. of $\frac{1}{4}$ " to $\frac{3}{8}$ " bars.

Shuttering.—For roof and wall slabs, wooden battens are all that are needed although if steel flats are used, better edges would be ensured. For the columns, too, instead of wooden formwork, steel shuttering, if used, would give perfect edges with a fine finish. Where the type of construction warrants a fine finish, steel formwork should invariably be used.

Location of Central Depot.—The precasting depot should be located at a site where labour

in the district is comparatively cheaper and at such a central situation as to be able to supply the requirements of precast components to all places within about 20 to 30 miles radius. On this Railway the central depot located at Bulsar is supplying precast components for 60 units for places on the Anand-Barejadi Section as far as 180 miles apart.

Doors and windows.—The frames for doors and windows are of precast gunite while only the shutters are of wood.

Labour.—With the exception of the nozzle-man and the gunman, only unskilled labour and a couple of masons are required, for the construction of these quarters. The

nozzle-man and the gunman, however, can easily be trained locally to operate the guniting machine.

Life.—Regarding life, attention is drawn to the previous para regarding what has been actually found in America.

Thermal Properties.—Temperature reading (*vide* tables (1) and 1 (a) attached) taken inside the houses with 2" walls have shown that its thermal properties are as good as houses with 9" brick walls. Single walls would be suitable in moderate climates, i.e., where the temperature in summer does not exceed about 100 to 110 degrees. For higher temperatures a double wall is recommended.

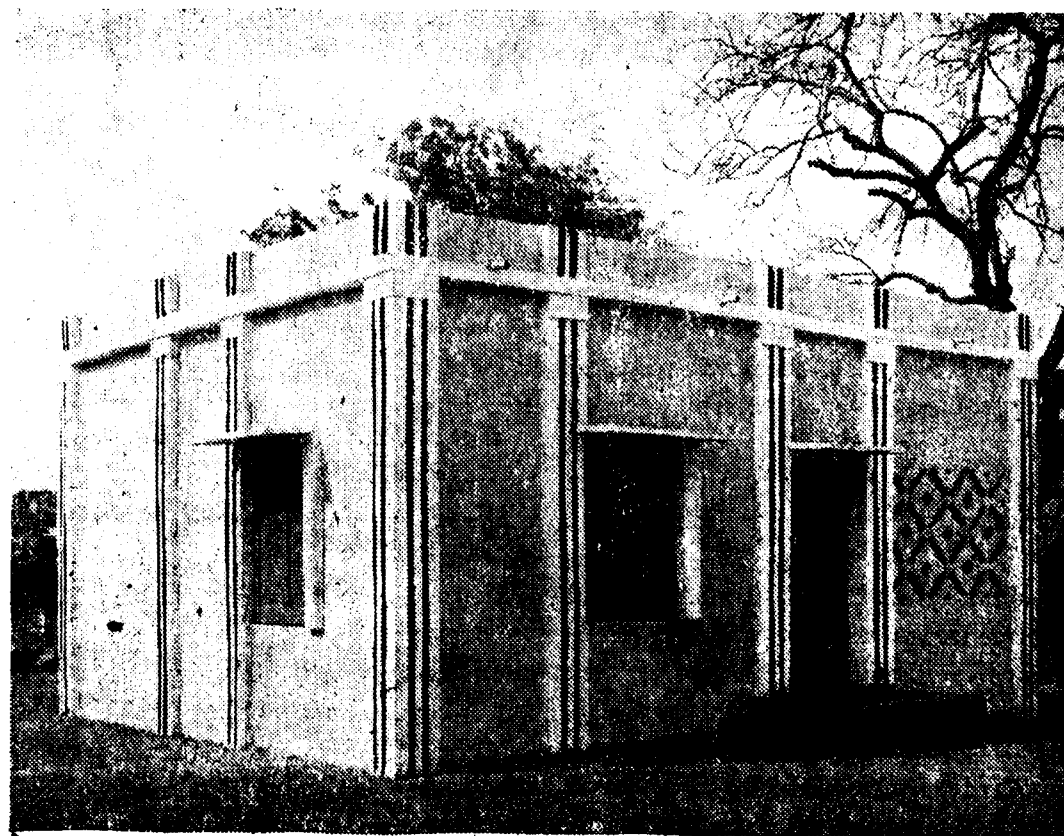


Fig. vi. Prefabricated, double wall, single floor, flat roof, GUNITE HOUSE at Delhi.



Fig. vii. Casting of slabs by guiding at Bulsar Bridge Depot

Advantages over other types of Prefabs.—The advantage over the other types of prefabs lies in that all the materials required for its construction are produced locally in India and the quantity of cement and steel needed is not appreciably more than for the conventional type of masonry construction. The use of precast elements made at a central depot promotes standardization and mass production with its attendant economies. With the unskilled labour required and with the small amount of shuttering needed, the time required for precasting is also considerably reduced.

Cost.—The cost of these quarters at the rates of materials and labour available does

not exceed Rs. 2,400 per unit. A comparative statement giving the costs of each item of construction to this house on the different Railways in India is given on Table (2). This table also indicates the cost of a similar conventional type in these Railways. The estimated cost of a house of 320 sq.ft. living area is indicated.

The present standard of 320 sq.ft. per unit provides practically three times the accommodation that was being given upto now for labour classes. Though raising the standard of living to as high a degree as possible should be our ideal, in view of our slender resources it is not possible to give such a commodious house to every

individual. It would be more prudent and humanitarian if we try and give a roof to as many houseless people as possible expeditiously. In view of our present poor financial condition, this can be done only if we cut down the accommodation to the minimum consistent with humanitarian grounds. From this point of view a unit consisting of one room 12'×10', a kitchen 8'×6' with a loft and shelves, and a small verandah 8'×6' giving a total floor area of 216 s.ft. would be reasonable. The cost of such a house at Bombay and Delhi rates will be about Rs. 1,400 and must be proportionately cheaper at other places.

This type is put forward for the consideration of all housing societies for the poor. Such houses can be so built that when prosperous times dawn on this land, the standard of living could be increased by giving two adjacent units to one family with slight suitable modifications.

In conclusion, it must not be understood that the author claims that this is the only solution for the present housing difficulty, but he suggests this as one of the means of such a solution. In places probably where building materials of the usual type are extremely cheap, the usual conventional buildings if they can be put up expeditiously and economically must be adopted, but for

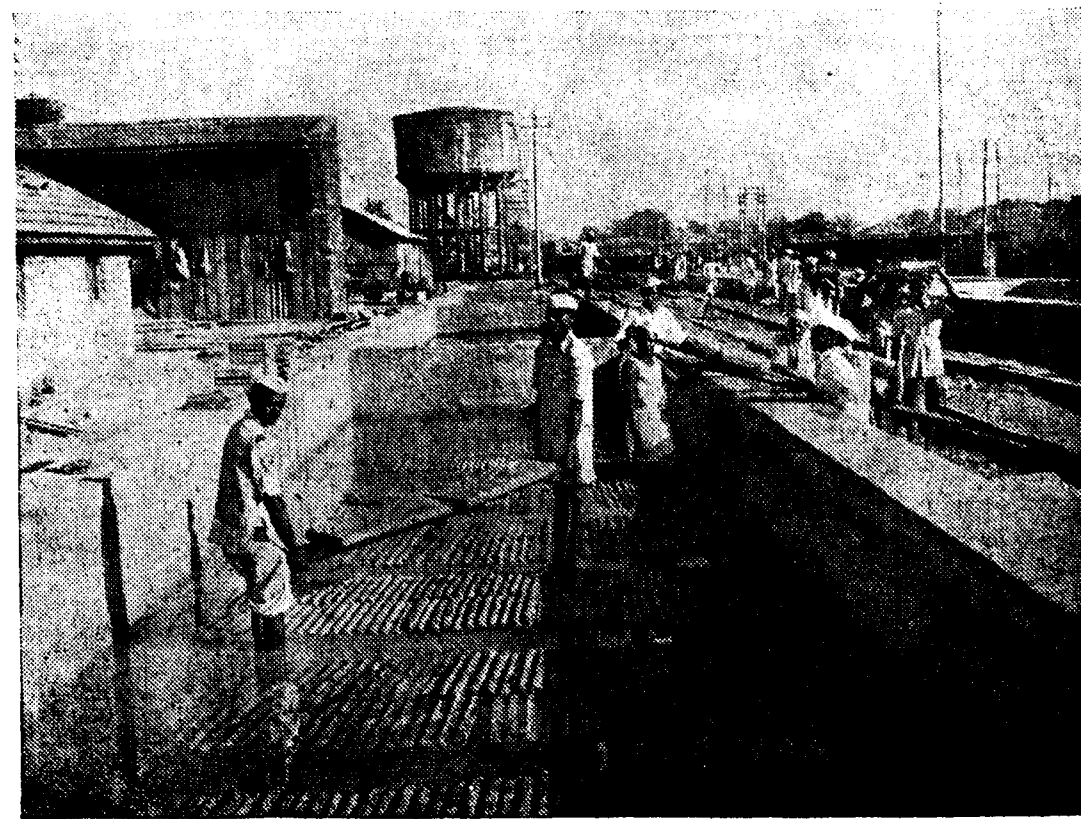


Fig. viii. Curing tank for precast units at Bulsar Bridge Depot

urban areas, refugee colonies and where hundreds of houses are expeditiously required this type offers a real economical and permanent solution. The immense advantage which this type of house offers over any other type of prefab is that the cost of equipment needed for this is not very great and the equipment could be taken right to the site where the houses are required. The houses so cast can be distributed within an area of 28 to 30 mile range without difficulty. Two sets of guniting plant can easily cast about 300 to 400 houses in a year. Thus at

a cost of about 35 lakhs of rupees we can buy a hundred equipment and distribute it to various centres all over the Union and build about 20,000 houses of the 320 sq.ft. area or 35,000 of the smaller type which means an expenditure of about 5 crores. The approximate saving in actual cost taking it at Rs. 1,000 minimum per unit, will be Rs. 2 crores—not a small figure.

Another advantage with this type of house is that the guniting equipment when not in use for building houses can be profitably

(Continued on page 433)

Temperature Observations at Bulsar.

TABLE 1

Date.	Time.	Temperature in 9" brick masonry quarter.	2" precast cement gunited quarters.	Double wall gunited quarters.
-50	8-0	89°	86°	84°
	12-0	92°	92°	88°
	14-0	93°	94°	90°
	18-0	90°	94°	90°
-50	8-0	91°	87°	86°
	12-0	95°	94°	90°
	14-0	95°	97°	92°
	18-0	90°	94°	90°
-50	8-0	92°	86°	86°
	12-0	96°	94°	90°
	14-0	95°	97°	92°
	18-0	92°	96°	90°
-50	8-0	93°	96°	86°
	12-0	95°	94°	90°
	14-0	97°	96°	92°
	18-0	96°	95°	91°
-50	8-0	91°	87°	86°
	12-0	96°	93°	91°
	14-0	98°	96°	92°
	18-0	91°	87°	86°
-50	8-0	91°	87°	86°
	12-0	96°	96°	91°
	14-0	98°	97°	92°
	18-0	96°	95°	91°
-50	8-0	91°	85°	86°
	12-0	96°	90°	91°
	14-0	97°	96°	92°
	18-0	96°	95°	91°
-50	8-0	91°	85°	86°
	12-0	95°	90°	91°
	14-0	97°	98°	92°
	18-0	96°	96°	91°

Temperature Observations at Delhi

TABLE 1(a)

Date.	Time.	Pucca building with 13" thick wall.	Gunite house with double walls.
31-5-50	8 hours	91° F.	90° F.
	10 "	93° F.	91° F.
	12 "	94° F.	94° F.
	14 "	95° F.	97° F.
1-6-50	16 "	94° F.	96° F.
	18 "	92° F.	95° F.
	8 "	90° F.	90° F.
	10 "	100° F.	102° F.
2-6-50	12 "	103° F.	103° F.
	14 "	105° F.	104° F.
	16 "	102° F.	102° F.
	18 "	99° F.	100° F.
3-6-50	8 "	93° F.	94° F.
	10 "	92° F.	91° F.
	12 "	91° F.	90° F.
	14 "	90° F.	91° F.
4-6-50	16 "	93° F.	94° F.
	18 "	92° F.	93° F.
	8 "	91° F.	94° F.
	10 "	93° F.	94° F.
5-6-50	12 "	95.5° F.	95° F.
	14 "	102° F.	100° F.
	16 "	95° F.	94° F.
	18 "	91° F.	90° F.
6-6-50	8 "	91° F.	90° F.
	10 "	94° F.	92° F.
	12 "	97° F.	95° F.
	14 "	99° F.	98° F.
7-6-50	16 "	99° F.	100° F.
	18 "	96° F.	95° F.
	8 "	93° F.	94° F.
	10 "	97° F.	96° F.
8-6-50	12 "	97° F.	97° F.
	14 "	100° F.	101° F.
	16 "	99° F.	93° F.
	18 "	95° F.	96° F.

EMPLOYMENT OF CHILDREN—II

by

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["No child below the age of fourteen shall be employed to work in any factory or mine or engaged in any other hazardous employment."—*The Constitution of India—Chapter III—Fundamental Rights—Article 24*].

It can very readily be admitted that, where the process of power production has been introduced in a country, the wage workers have themselves provided the means for their rapid expansion. In other words, the introduction of long hours of work, small wages and the exploitation of women and child labour has marked the period of industrial revolution. The same forces also can answer all questions pertaining to child labour problems, e.g., who were these children? Where did they come from? What made them seek employment at tender ages? Where and how they were employed?

In the early stages of industrialisation, women and children have always provided a large supply of competing labour in such countries. While the motive in all these cases was economic necessity, forced by circumstances on a class that had a lower standard of life and less power of resistance, the result of employment was always the same; longer hours of work, low wages,

insanitary working conditions and perpetuation of a system of work which was hard to eradicate, like rigid discipline, repressive attitude of the employers, the callousness to industrial suffering, which has been reported by independent writers, reporters, Royal Commissions, Parliamentary debates and other contemporary sources. Again, the same period of intense exploitation has been followed by the growth of humanitarian feeling towards those once exploited and the emergency of opinion, laws and Acts for the safeguarding of these. With the passage of various Factory Acts, the worst excesses of over-work at the expense of women and children appeared to be passing off. Other factors which helped this state of affairs were, rise in wages and the tendency of the working class to combine. This state of affairs offered strong inducements to both sides to bring about a change in policy and tactics. The employers relaxed their methods and the workers saw a ray of hope in their future.

It is in the background of this brief sketch that the subject of employment of children is dealt with in the following pages.

The unhealthy conditions of work of children caused the appointment of a Commission of Enquiry into the health of children, employed in Cotton Mills in Great Britain in 1802. Legal intervention by the State into the question of child labour starts from this. From this time onwards the movement spread to the Continent.

India

The Government of Bombay instituted its first Factory Commission in 1857 to enquire into the conditions of the operatives in the Bombay factories.

The various stages in which the child has received protection in India are as follows:

(1) Factories Act, 1881—the child is defined as a person below 12, minimum age of employment 7, hours of work for age 7 to 12 as 9, with rest intervals and holidays.

(2) Factories Act, 1891—Minimum age of employment raised to 9, hours of work for age 9 to 14 as 7 hours a day, and restricted to day light.

(3) Factories Act, 1911—Children's hours of work limited to 6 in textile mills, strict supervision and certification required, prohibited employment of children between 7 p.m. and 5-30 a.m.

(4) Factories Act, 1922—Persons below 15 to be treated as children, hours of work limited to 6 with rest interval of $\frac{1}{2}$ hour after 5 $\frac{1}{2}$ hours of work, minimum age raised to 9 to 12.

(5) Factories Act, 1934—Minimum age of employment 12 and between age 12 and 15 to be treated as children. Adolescent class introduced (15 to 17), hours of work

restricted to 5, spread over limited to 7 $\frac{1}{2}$, no employment between 7 p.m. and 6 a.m.

(6) Factories Act, 1948—Minimum age of employment after completing age 14.

(It has taken 70 years to raise the age of employment from 7 to 14).

Child labour conditions in India have paralleled those in England a century ago. The problem of child labour has never been an English or an American or Indian problem; it has been a world-wide problem.

Nature of child labour

Any work of children under conditions that interfere with the opportunities for physical development, education and recreation which children require may be regarded broadly as child labour. It is the working of children at age 14 and below for long hours and under unhealthy conditions.

Extent of child labour

The number of children reported legally at work varies greatly from the number of children actually at work. Hence official reports are apt to under-estimate the amount of child labour. Their employment may be seen in the following table:

TABLE I.
Average daily number of children employed in factories.

Year.	Total employed.	Children employed.	Adolescents.	Percentage of children to total.
1892	316,816	18,288	..	5.9
1912	869,643	53,798	..	6.1
1923	1,409,173	74,620	..	5.2
1933	1,43,212	19,091	..	1.3
1939	1,751,137	9,403	..	0.5
1943	2,436,312	12,484	..	0.5
1946	2,223,502	13,347	..	0.6
1947	2,230,508	11,577	27,846	..
Percent- age to total in 1947.	..	0.5	1.2	..

The number of children gainfully employed rose steadily from slightly less than 19 thousand in 1892 to a little over 74 thousand in 1923. Although the absolute number of employed children almost quadrupled in this generation, their ratio to the entire number of workers employed has remained fairly constant. A great decrease in child labour has taken place within the last generation. The number of employed children fell by almost 75 per cent. in the decade from 1923 to 1933 and again by almost 40 per cent. in the following 6 years from 1933 to 1939. This represents a reduction in the absolute numbers of children gainfully employed from almost 74,000 in 1923 to a little over 9,000 in 1939. The percentage of the total child population declined from 6.1 in 1912 to 0.5 in 1939.

The decline in child labour has been due to the formulation of public sentiment against it and to the passage of numerous stable laws like the Children (Pledging of Labour) Act, 1933, Factories Act, 1934, and Employment of Children Act, 1938. Legislation, as shown before, has repeatedly raised

the age of employment. These higher standards not only reflect the humanitarian interest, but also the enlightened attitude of labour and its grave concern over the ill-effect of child labour. The passage of the Employment of Child Labour Act, 1938, almost abolished child labour from industry although not from agriculture or from petty trades like bidi making, carpet weaving, etc. The employment in plantations has, however, a different picture to show.

TABLE II.
*Employment of children in Assam
Tea Plantations.*

Year.	Factories.	Plantations.
1929	46,843	..
1934	18,362	73,430
1939	9,403	81,698
1944	13,347	86,635
1947	11,577	60,896 *

* Excluding district of Sylhet which forms part of Pakistan. This district employed in 1945-46 about 78,600 workers.

Employment of children in Factories in 1946 in the various States

Employment of children in various States varies within wide limits depending on the nature of prevalent industries.

TABLE III.
Employment of children in Factories in 1946.

STATES.	ADOLESCENTS.			CHILDREN.		
	Males.	Females.	Total.	Boys.	Girls.	Total.
Madras	7,359	1,523	8,882	2,912	1,565	4,477
Bombay	4,745	639	5,384	1,611	335	1,946
Bengal	9,348	613	9,961	1,844	80	1,924
U.P.	1,178	4	1,182	865	2	867
Bihaar	455	44	499	603	43	646
Orissa	125	47	172	23	..	23
C. P. & Berar	946	48	1,094	465	9	474
Assam	1,313	40	1,353	577	131	708
Ajmer-Merwara	10	..	10	22	..	22
Delhi	66	8	74	290	25	315
Bangalore and Coorg	23	..	23	43	..	43
Total	25,568	3,319	28,887	9,260	2,197	11,457

Occupation of children

The character of child labour can be seen by a study of the occupation in which it has played a considerable part. It may be said that children have entered any industry from which they are not excluded by law and in which their unskilled labour and limited physical strength could be exploited.

legal but much is illegal. Street trades are also hard to eliminate. The unrecorded, if not illegal, employment of children in numerous other occupations (mica cutting, and splitting, shellac manufacture, glass manufacture, carpet weaving, etc.) makes the problem of child labour of greater magnitude than the employment figures indicate.

TABLE IV.
Employment of children in various industries under the Factories Act in 1946.

INDUSTRY.	ADOLESCENTS.			CHILDREN.		
	Males.	Females.	Total.	Boys.	Girls.	Total.
Cotton Spinning and Weaving ..	8,237	1,015	9,252	1,210	91	1,301
Jute Mills	2,685	251	2,936	503	33	536
Engineering	4,242	55	4,297	1,607	1	1,608
Minerals and metals	222	2	224	249	10	259
Sugar Factories	2	..	2	14	..	14
Paper and Printing	476	12	488	670	43	713
Chemicals and Dyes	910	381	1,291	516	823	1,339
Wood, stone and glass	1,591	242	1,833	1,492	192	1,684
Total	18,365	1,958	20,323	5,861	1,193	7,054

Occupation of children may be divided into four major groups: (a) agriculture; (b) manufacture; (c) trade; (d) domestic and personal service. Agriculture is said to engage the largest number of children. No figures about employment of child in agriculture are, however, available. The percentage of children gainfully employed in manufactures was the lowest in 1939. The relative proportion of children employed in trade and domestic and personal service is not available. It is also a fact that children do a considerable amount of labour of which there is no record. Some of this may be

Causes of child labour

With the introduction of the factory system, craftsmanship lost its value. Machines were introduced that needed little strength or intelligence to look after them. Increasing industrialisation made the supply of cheap labour, plentiful. The necessity for self-support and the need to supplement the meagre income of the parents was another factor. An indifferent public opinion was another casual factor. And, last of all, absence of facilities for the education of children was the biggest factor which brought the child to industry to have some employment for himself.

Effects of child labour

The effects of child labour may be considered under three heads :

- (1) Effects on the child.
- (2) Effects on society.
- (3) Effects on industry.

Here, the effects on the child alone will be considered. The other two effects are associated with socio-economic aspects and the reader is advised to seek information in literature connected with it.

Above all, the effect of labour on the child is to stunt the physical, intellectual and moral growth of the individual child. Very little or no research work has been done in the country to support the above statement, but from experience in other countries, there is little left to argue about the truth in the statement made.

Essentials of child labour legislation

Although all States have Laws on the subject of child labour, they lack in the adequacy of provisions and in the stringency of their enforcement. The protection of the child is concerned with a number of questions. These are—

(a) *Minimum age of employment.*—Any attempt to raise the age of employment must be made only after due consideration of the socio-economic question of child labour, and the provision for secondary education facilities for the children of workers. In certain States in U.S.A. the minimum age of employment is 16 years and in some 18 years, but in these countries large scale facilities exist for the education of children, and higher standards of qualifications are required for new entrants in industry. No exceptions are made from these

State Laws. In the case of young persons they are required to produce evidence issued by the proper governmental authority that they have attained a certain educational standard. State Laws on child labour are co-related with those on compulsory education. What we need is to increase the facilities for education for our children and an increasing stress on technical and vocational training of the secondary school stage child. We have to provide facilities for his supervision and protection at home and school, the major concern of which is to help the personal development of the child, because he is young and immature, he is inexperienced, he is unused to the discipline of industry and the demands of a job.

(b) *Medical examination of fitness for employment.*—It is absolutely essential to have rigid laws to provide for such examinations, which provide for age certificates and certificates of medical fitness.

(c) *Periodic Medical Examination.*—It is necessary to provide for regular health check-up of all gainfully employed children to watch the effects of work on their health.

(d) *Maximum hours of work.*—Additional safeguard in the legislation should be provided to limit the maximum number of hours per day and per week that a young worker may be employed.

(e) *Night work.*—Restrict employment during certain night hours.

(f) *Employment prohibited in hazardous operations.*—Employment of a minor below a certain age, should be prohibited in certain unhealthy, dangerous or heavy processes as silvering of mirrors, chrome works, vulcanising, lead, pottery, foundry, car batteries, hot and humid atmosphere,

carrying weights and loads, mercury, arsenic, phosphorus or in the operation of certain dangerous machines.

(g) *Rest intervals.*—To guard against excessive fatigue it is necessary to prescribe rest intervals.

(h) *Feeding.*—Facilities for the proper nutrition of the child worker are very essential and all liberality should be exercised in providing for nutritious meals for the children.

(i) *Choice of work.*—This should be suited to the physical fitness of the candidate so that he has an average choice of continuing his occupation without exposing himself to risk of injuries affecting his normal development. This would mean the issue of an employment certificate or work permit. It is necessary to have something of this nature to safeguard the interests of a minor by being employed in an occupation that is barred to one of his age because of special hazards. This will prevent unwilling violation of the law under the belief that the minor is older.

(j) *Workmen's compensation.*—Provision should be made for at least double compensation in the case of minors injured while illegally employed, and consideration of probable adult earnings in computing compensation in case of any minor permanently disabled or killed.

(k) *Required school attendance.*—The laws should provide for full-time or part-time school attendance requirement of all gainfully employed children. This is essential not only as a measure to increase literacy in the child population but to provide educated workers for our factories. A provision of this type should not be difficult for child

workers in large cities and towns where schools exist.

(l) *Penalties.*—It is important to urge the review of present penalty provisions in child labour laws and the amendment of such laws where necessary so that the penalty operates as a real deterrent to violations of the Law.

Action needed

The time is at hand to go forward in enacting these standards into Law in order to give all the children in the States the opportunity for education and training and for the better physical, mental and social development that good child labour legislation helps to make possible.

Action should be taken in mobilising public opinion and in enlisting the co-operation of other citizen groups to work together to achieve these objectives.

Legislation

Child labour legislation was attempted first by the Factories Act of 1881 as shown before, followed by other Amending Acts till the year 1933. The next major step that was taken was the passing of the Children (Pledging of Labour) Act, 1933, to prohibit the pledging of labour of children in return for any payment or benefit.

In 1938 another Act, Employment of Children Act, was passed which marked a new era in child labour legislation. This Act regulated the admission of children to certain industrial employments and amongst other things provided that—

- (a) no child was to be employed for transport of passengers or mails by railway.

(b) Handling of goods in port.

(c) In workshops where, bidi-making, carpet weaving, cement, cloth printing, dyeing and weaving, match manufacture, explosives, fire-works, mica cutting and splitting, shellac manufacture, soap, tanning, wood-work.

For the most part, however, this Act remains unenforced or unenforceable in "unprotected industries". Only few flagrant violations are brought to the book. There are loopholes in many places, there is also much laxity in their enforcement.

Laws concerning the employment of children in agriculture and domestic service do not exist. This is due to the fact that the enforcement of child labour standards is more difficult in the 700,000 widely scattered villages in the country and in domestic service and the street trades, than in manufacturing establishments.

There exist insuperable obstacles—social, economic, and administrative—for a progressive policy on child labour laws. There is public inertia and private prejudice alike working against the adoption of higher standards. In the absence of an intelligent and adequate education policy, it appears difficult to remove the indifference towards advance in child labour problems.

The Constitution makers have, however, not been indifferent to this important social problem and have pronounced in unequivocal language the fundamental rights of the child.

The Factories Act, 1948

Child-labour legislation in factories has been paralleled by similar protective legislation for women workers for both these groups suffered under sweatshop conditions. As children were employed on a considerable scale in the textiles these industries were among the first to be regulated. After 70 years of crusading for efficient child labour laws and plugging of various loopholes in these laws, a big measure of achievement was obtained in the Factories Act, 1948.

Summary

Industrialisation on large scale is productive of many maladjustments. One such is the employment of young children in factories. The situation has gradually improved during the last 70 years by the passage of social legislation. Children have entered almost all occupations requiring little strength or skill. Their employment for meagre earnings does not justify the loss of education or recreational opportunity. Article 39 of the Constitution of India lays down in the Directive Principles of State Policy that "... the tender age of children are not abused and that citizens are not forced by economic necessity to enter avocations unsuited to their age or strength."

For the upkeep of such high principles it is necessary to investigate child-labour conditions in various industries and promote better child labour laws.

LEPROSY AND ENVIRONMENT

by

T. N. Jagadisan



THERE are so many things that we do not know about leprosy and there is little room for dogmatism on the subject. But we *DO* know a few things. We know that leprosy cannot be artificially acquired and that it has to be contracted in a natural environment. Cases are recorded of leprosy workers inoculating themselves with heavily bacillated leprosy tissue or nodules with no success in getting leprosy. It seems clear, therefore, that if one is to get leprosy one should get it naturally and in a certain environment.

Let us consider what this environment is. Three factors stand out as significant in the spread of leprosy:—

- (1) Type of leprosy with which one comes into contact (whether infective or non-infective);
- (2) Age of the individual (whether the person is a child or adult); and
- (3) Type of contact (whether the contact is casual, or close and prolonged).

All experience and observation point to one major conclusion. Leprosy is a disease of

close contact and the greater the opportunities of contact between the sick and the healthy (in a community or in the house), the more intimate the intercourse, the greater are the chances of infection. But, happily, leprosy is not *very* infectious, even in its infective form. Therefore, every circumstance that diminishes intimate contact, especially between children and infective cases, must also diminish the danger of transmission and diffusion of the disease. The spread of leprosy, therefore, altogether depends upon whether the environment and habits of a community or a family are such as to promote close contact among its members.

Let us now examine in detail some aspects of environment which are known to influence the spread of leprosy and others which may be suspected to have some influence.

Overcrowding

Beyond all doubt this is the most potent factor in the spread of leprosy. For,

congested housing makes the contact between an infective case of leprosy and the general population more close, more prolonged, more incessant. Sample surveys have revealed that it is in overcrowded houses and communities that leprosy is most likely to establish its endemicity.

Sanitation and Personal Cleanliness

When insanitary surroundings are added to congested housing the contact naturally becomes more dangerous. The weight of evidence, as accepted by most leprologists, tends to show that direct contact, contact with infected clothing, utensils, mats, etc., are the commonest ways in which leprosy spreads. It follows that frequency of bathing, frequent washing of clothes and linen, cleanliness of house and surroundings and personal cleanliness can go a long way in minimising the chances of the bacilli entering the body.

Diet

Some leprologists deny that diet has anything to do with the spread of leprosy. Dr. R. G. Cochrane points out that the disease is often of the mild type in the poorly fed and of the graver variety in the well-nourished. Dr. E. Muir says; "It is difficult to believe, and altogether contrary to my own clinical observation, that nourishment had no effect on the course of leprosy; and it would be strange indeed if it were so when it has such a profound influence in tuberculosis and other chronic wasting diseases."

Climate

This is a baffling question. Once leprosy was very prevalent in cold countries;

now, it is mostly a tropical or sub-tropical disease. In our own country, there is at present quite a bit of serious leprosy in the sub-Himalayan tracts. The question of influence of climate on the spread of leprosy needs detailed investigation. It is to be suspected that humidity is probably a factor promoting leprosy, for, the areas in our country where the disease prevails more are either areas with a hot climate and high humidity or areas with a cold climate and a high humidity.

Public Health Sense of a Community in relation to Leprosy

The attitude to leprosy in a community affects the spread of leprosy to a great extent. The superstitious belief that it is the result of *Karma* and a special visitation of Divine displeasure, the erroneous belief that leprosy is hereditary and a total ignorance about the methods by which the disease spreads—these contribute to the spread and establishment of endemicity of leprosy in a community. The correct attitude to leprosy, on the other hand, can effectively contribute to the control of leprosy. The correct attitude is to avoid both extremes of panic and indifference—the one leads to concealment of disease, the other leads to total absence of the fear of the spread of the disease—and to develop a reasoned attitude which will safeguard the healthy without humiliating the sick. The society's attitude should be based on carefully thought-out scientific ideas. The classical example of the helpfulness of such an attitude towards controlling leprosy is Norway where notification of all cases followed by home, or when necessary, institutional isolation of

infective cases controlled leprosy in a few decades.

Enough has been said to show that "environment" in a very comprehensive sense influences profoundly the spread of leprosy. Let me reinforce the truth of this view by some more observations.

Surveys in different parts of our State bring out one fact repeatedly and prominently. Leprosy is serious in weaver communities. It is difficult to resist the conclusion that the habits of the weaving families facilitate the spread of leprosy. The only living room of the weavers' house or hut, ill-ventilated and dirty, occupies nearly two-thirds of the space, thus leading to the closest huddling together of the inmates of the house and giving rise to the closest physical contact of the inmates with the case or cases of leprosy that may be in the house. Little boys and girls are employed in weaving and they come into closest contact with the infective cases who are also engaged at the same loom.

The countries which have abolished leprosy are also the countries which have abolished other communicable diseases. As standards of living rise, as people get better houses, better food, and better environment, and above all, as their public health sense rises, leprosy will disappear.

I should, however, point out here that in a few States of the United States of America leprosy exists so as to constitute a fairly serious problem. In the majority of the States, there is practically no tendency for leprosy to spread. In the Gulf States of the South Georgia, Louisiana, Texas it spreads to a noticeable extent. In California and South Carolina it spreads to a

limited extent. In the non-endemic States, where there are no restrictions and where imported cases do move about, the disease does not spread even by the presence of these cases. (McCoy G. W. 1942. *Public Health Report*, Washington). This raises the interesting question why leprosy should spread in certain countries more than in others, in certain parts of a country more than in others. To my mind, the habits (personal, domestic, social) of a people, their economic level, and their attitude to the disease determine largely the endemicity of leprosy in particular areas.

As the habits of people are not easily changed, as the economic level is not quickly raised, as a public health sense does not grow overnight, the hope held out by the new sulphone drugs have led workers to look to the possibilities of speedy control through treatment. **TREATMENT OF LEPROSY PATIENTS IN THEIR OWN HOMES—AN APPROACH TO THE PROBLEM OF CONTROL OF LEPROSY IN ENDEMIC AREAS—DR. C. G. PANDIT, 1949.** That effective treatment will be a powerful ally to control, though not the sole or direct means of control, is indisputable. But there are difficulties, when we think of India as a whole and the total neglect into which our villages have been thrown. Leprosy is largely a disease of villages and how are the sulphone remedies, even when they become much cheaper, to reach our neglected villages? Leprologists also speculate on the possibility of the development of sulphone-resistant strains of *M. leprae*. While we must increasingly look forward to effective treatment becoming more and more of an ally to control, we should not omit to lay increasing stress on preventive measures

and the education of the public. I cannot do better than to conclude this article with a stirring quotation from Dr. E. Muir (LEPROSY CONTROL: Report of the Second All-India Leprosy Workers' Conference—1948), for it sets leprosy control in its proper context:—

"We know, in Calcutta, that the discovery of a specific for kala-azar has not led to the elimination of that disease. This may be on account of the insect vector and the mild form in which the disease may persist in the human skin. A specific in leprosy with potency similar to that of the pentavalent antimonials in kala-azar might be able to control leprosy if the difficulties of cost and personnel could be overcome. But that time has not yet come and meantime, while combating as far as possible all that encourages leprosy and using all the measures referred to above, the main stress should be laid on education along the lines I have mentioned. But the greatest hope lies not in physical changes so much as in the world of ideas.

"What then is the nature of the ideas and the attitude desirable regarding leprosy? Occasional charity to the individual sufferer is good, but it will not bring about any permanent relief. While not disregarding the individual we must learn to think geographically. We need a vision of leprosy extended over the land and still sending out

its tendrils and rootlets through our villages, towns and provinces, with its roots firmly established in families, spreading insidiously underground, popping up its shoots here and there, often where least expected. And we must think not only geographically but historically too. This ancient disease known to our ancestors for hundreds and thousands of years is still with us and is extending its dread progeny into this New India.

"The physical disease of leprosy spreads insidiously and underground, but it is still more covered over and hidden by the dread of publicity, and by the fear of cruel superstitions which ostracize and drive out the sufferer.

"If leprosy is to be controlled, it must be by a realistic campaign. Volunteers who understand leprosy must be willing to spread the knowledge of it from house to house where the disease is endemic. Knowledge and hope will then take the place of superstition and dread.

"Leprosy is only one of the weeds that infest this fair land of India. The farmer does not try to eradicate one kind of weed alone when he tills his land and the campaign against leprosy should form a part of a wider campaign against all forms of disease and all the plagues, physical, mental, social and economic, which afflict village and town life."

LEPROSY IN RELATION TO INDUSTRY

"During recent years some evidence has been accumulating to show that the development of industry is probably having an influence on the spread of leprosy and the possibility of this increase must be borne in mind. Leprosy surveys of industrial workers have been carried out in various parts of India and an incidence of between 1 and 2 per

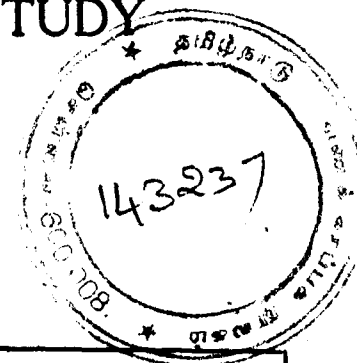
cent has often been found, and a considerable number of cases have been infective cases. The presence of these infective cases in the crowded busties and living quarters of industrial workers is a definite menace to public health. . . ."

—Special Committee of
Central Advisory Board of Health.

AMERICAN YOUNGSTERS STUDY CITY PLANNING

by

Mel Scott



This article appeared in the September 1949 issue of *The American City*, an illustrated magazine devoted to aspects of city planning and administration, published monthly in the United States. The writer is consultant to the San Francisco Department of Education.

PUBLIC schools in San Francisco, a seaport city on the Pacific Coast of the United States, have inaugurated a community-study project that not only acquaints young citizens with their city as it is to-day but gives them a vision of what it can become through a vigorously supported city-planning programme.

In many school systems of the United States, study of the community is emphasized in social-science classes for 8-year-olds. School officials believe that at that age level, the child is ready to understand and to appreciate living conditions and elementary problems of urban redevelopment. A particularly comprehensive set of teaching materials for the study of an American city has been placed in the hands of San Francisco teachers. Besides six generally illustrated text-books, each on a different aspect of the city, the instructional materials include sets of study prints, eight film strips, sound transcriptions, a teacher's

manual, and teachers' packets of reference materials.

The unique feature of the new text-books is their emphasis on the city's potentialities for future development. "San Francisco To-day," first book in the series, is probably the first elementary school book in the United States to introduce the subject of urban redevelopment to 8-year-olds. "Some parts of our city are growing old," the book points out. "They were built long ago. Many of the houses are too close together. Some rooms get no sunlight and are dark. There is no space in the neighbourhoods for playgrounds. The children play in the streets and alleys. Some day most of the buildings in these old neighbourhoods will be torn down. New neighbourhoods will be built. The new buildings will get plenty of light and fresh air. There will be parks and playgrounds for children and grown-ups. The streets in these new neighbourhoods will be safe." The book closes with an

illustration depicting families enjoying life in a redevelopment project, while wrecking crews demolish deteriorated dwellings in a near by area.

"At Home In San Francisco," another book in the series, presents the concept of the city as a group of related community areas. It also lists the essential features of a good neighbourhood (school, playground, shopping centre, church, safe streets), tells how various city departments are cooperating, and informs small readers about the functions of planners. The book entitled "In And Out Of San Francisco" deals with transportation. It familiarizes children not only with the many forms of transportation that serve San Francisco; it points out that "city planners are studying ways to help traffic move faster" and have already helped the city to get new motor coaches and trolley buses. Need for a playground in each of the city's 98 neighbourhoods is stressed in "Fun In San Francisco".

To create in children an awareness and an appreciation of the contribution of many nationalities to the city's cultural development, the texts point out that "people from all over the world have helped to build San Francisco." Covers of two of the text-books show inter-racial groups at play.

Film strips supplementing the text-books show the port, cities, and towns around San Francisco Bay, the Civic Centre, various neighbourhoods, types of streets, recreational activities of children, workers in San Francisco industries, and forms of transportation, including the last of the ferry boats. One of the sound transcriptions brings right into classrooms the sound of fog horns

and steamship whistles, the rhythmic puffing of steam engines and the roar of the wind as it sweeps over the mountains.

The immediate effect of plunging young San Franciscans into an intensive study of their city has been to create an insatiable desire to know every part of it firsthand. Teachers have been busy all year taking pupils on bus trips around the city. On Sundays, parents have been escorting their children on boat rides around San Francisco Bay and taking long walks with them through Golden Gate Park to see the fascinating places mentioned in the text-books.

Classroom walls are ablaze with juvenile art portraying San Francisco's great bridges, workers constructing new housing projects, model neighbourhoods, modern school buildings, and new public-transit vehicles. One enterprising class constructed a large topographic map of the city from a small contour map. The relief map serves the two-fold purpose of enabling pupils to learn the names and locations of the 30 or more hills in San Francisco and to understand why this city of magnificent views and limited land area has complex housing problems.

In developing varied teaching materials, the school department enlisted the aid of governmental, civic, philanthropic, and private business organizations. Scores of public agencies and business firms provided information and photographs for books, film strips, and study prints. City planners in other California cities have been impressed by the cooperation between San Francisco planners and educators and are hoping to develop the same kind of teamwork in their own communities.

(Courtesy, U.S.I.S.)

THE INTERNATIONAL WORK OF THE AMERICAN RED CROSS

by

Samuel Krakow

PRESIDENT Truman's now famous Point Four plan, which has come in for considerable discussion since he proclaimed it in his inaugural address in January 1949, is already embodied in the international activities programme of the American Red Cross (ARC).

Said President Truman: "I believe that we should make available to peace-loving peoples the benefits of our store of technical knowledge in order to help them realize their aspirations for a better life"

In September, 1946, the international activities section of ARC was created to make available to sister national Red Cross Societies the technical knowledge and methods which have proved successful in the United States. In the three years of operation the ARC programme has reached into most of the countries of the world with one kind of professional aid or another.

Particularly significant in 1949 was the American Red Cross participation in the Near East relief programme for refugees. In addition to shipping large stores of supplies for this programme, the American Red Cross has loaned some of its staff to work with representatives of other national societies through the League of Red Cross Societies.



American Red Cross representatives conferring with officials of the Korean Red Cross.

At the same time, these American experts are assisting sister societies in the Near East in developing social welfare services of their own.

Among specialists invited from other countries for advanced study in U.S., is an Italian physician. He came to the United States and spent 10 weeks studying the American blood-donor programme in all its aspects. He has returned to Italy and is now setting up a national service on a plan closely resembling the ARC service.

The Italian Red Cross, in addition to administering the programme, carrying on publicity for recruitment of blood donors, and collecting the necessary statistics, will also develop standardization of techniques and equipment; conduct researches and studies about transfusional problems; train technical personnel; and produce dry plasma fractions, and hemodiagnostic serums.

The Korean Red Cross Society provides another example of the American Red Cross making the benefits of America's scientific advances available to other countries. The ARC loaned a nurse to help the Korean Red Cross develop its nursing services, and donated hospital and clinical supplies for its tuberculosis sanitarium and hospital.

A Greek Red Cross doctor has made an intensive study of anesthesiology in the

Two German Junior Red Cross leaders who studied American educational methods are now introducing Junior Red Cross programmes into their country. They will be able to offer a constructive outlet to German youth for their activities. A Danish Red Cross occupational therapist studied the recreational phases of rehabilitation practised in the United States. The American Red Cross has sent nursing specialists to such



American Red Cross representatives in Japan helped reorganize the Japanese Red Cross.

United States. The doctors with whom he studied predict that the experience he has gained will substantially reduce surgical mortality in the hospitals operated by the Greek Red Cross. A Chilean nurse, after considerable study in the United States, has returned to her country to introduce more modern methods in nursing services.

widely different places as Siam, Korea, China, Japan, Germany, Austria, Puerto Rico, Guam, and Hawaii to help in improving techniques, education, and services.

The American Red Cross has furnished blood fractionation equipment to the Finnish Red Cross; equipment for French Red Cross mobile baby clinics; large-scale disinfecting

equipment to Indian and Pakistan Red Cross societies, and hospital equipment to South Africa. The Danish Red Cross, which is conducting an outstanding anti-tuberculosis programme, also received a large quantity of equipment. In Norway, the American Red Cross has provided furnishings for a 200-bed hospital to assist the Norwegian

variety of volunteer services, particularly in the field of social welfare, has gone to all parts of the world.

The American Junior Red Cross has shipped large quantities of school supplies and equipment to aid educational reconstruction in war-devastated lands, and its special concern has been war-maimed children.



Austrian Red Cross Volunteers stitch up baby clothes in a Vienna workroom.

Red Cross in setting up the first institution for the training and care of mentally deficient children. The German First Aid Service has received ARC supplies that enabled it to set up 250 stations.

American Red Cross literature covering such fields as first aid, accident prevention, water safety, home nursing, and a wide

"Only by helping the least fortunate of its members to help themselves," said President Truman, discussing his Point Four programme in his inaugural address, "can the human family achieve the decent, satisfying life that is the right of all people."

RED CROSS COURIER.



"Books are Weapons in the War of Ideas." "Some Books are to be tasted, others to be swallowed and some few to be chewed and digested" . . . and some to be eschewed!

Name: ASK THE CHILDREN.

Author: Lieut.-Col. FORD THOMSON, M.B., Ch. B., I.M.S. (Retd.), Late Adviser to the Government of Madras in Child Psychology.

Publishers: Messrs. Cassell & Co., Ltd., London, E.C. 4.

Pages: 288. Size: 8.5" x 5.5".

Price: Sh. 15 net.

"Ask the Children" is a novel approach to the study of child psychology. Lt.-Col. Ford Thomson has taken infinite trouble to make the subject clear to the general reader who is no student of psychology, while at the same time telling trained psychologists a few new things. It makes very interesting reading and is a useful guide to young parents. As he rightly points out, there are few parents who have not encountered child delinquency in their offspring. Parents and teachers will greatly benefit by the valuable advice that the author gives in this book regarding the upbringing of children, from their birth through adolescence and into their teens.

There is, however, one portion of the book which is apt to mislead many into thinking that the author advocates the unstinting use of corporal punishment in its absolute



Lt.-Col. FORD THOMSON

sense. Only a second and more careful perusal will show what the author meant. His point is that *physical punishment* is, comparatively, the best form of punishment, for, it only pains the body; it does not torture the mind. A wound, produced by corporal punishment on the body, will heal in course of time; "mental punishment" leaves a permanent scar. It should not be taken to mean that Col. Thomson wants Indian children to be belaboured for their offences. *If at all punishment is to be*

inflicted, let it be the cane that does the work—not a harsh word or a stinging insinuation, he says. If the child gets spoilt by your sparing the rod, wield the rod to good effect by all means, but do not resort to terrorising the infant and raising images of hell's purgatory on its impressionable mind. A reader of Col. Thomson's book will feel no doubts in this regard.

The author has added an appendix giving the Madras Children Bill, 1949, which makes the book doubly valuable for the reading public. He is to be congratulated for his patient research in the field of child delinquency and for the happy results of his painstaking experiments. If we ask the children to read this book, written mainly for parents and psychologists, I am sure Col. Thomson's "fan-mail" will be too much for the postman to manage. *Ask the Children* tells the parents, what to do, and has been written after finding out the children's needs both by direct interrogation and close observation by an eminent psychologist with a fund of experience to his credit. The book is a 'must-get' proposition for the twentieth century parent, who depends for guidance in parenthood, on the library.

—Mrs. M. RAMASWAMI, M.A., B.T.,
T.D. (Lon.)

Name: H.E.R.L. ANNUAL REPORT
(TECHNICAL) FOR 1949.

Publishers: The Government Press,
Hyderabad (Deccan).

Pages: 260. Size: 9 $\frac{3}{4}$ " x 7".

Price: Rs. 7-8-0.

Dr. S. P. Raju, Director of the Hyderabad Engineering Research Laboratories, deserves to be congratulated on the excellent annual



Dr. S. P. RAJU

report under review. He commences his foreword by quoting Pandit Jawaharlal Nehru: "Science must begin to think in terms of the four hundred million people of India."

Dr. Raju, in his research work, has kept foremost in his mind the wise lead of our Prime Minister. Dr. Raju is responsible for the design of the well-known HERL Kitchen and he has deservedly won the appreciation and gratefulness of thousands of housewives who had been literally in tears, while cooking food for the family.

Apart from deriving benefit by perusing the report, every well-wisher of our country should communicate his suggestions for research to the Director Raju, who will, we are sure, gratefully accept the suggestions and go forward with further researches of immediate and practical value.

—CIVIL ENGINEER.



*Wit's an unruly engine, wildly striking,
Sometimes a friend, sometimes the engineer.
—George Herbert.*

Climate to Blame

Frederick had reached the new and colorful necktie stage and occasionally he combed his hair, but he still hated to wash behind his ears.

"Cleanliness is next to godliness," his mother said in despair.

"Oh sure, Mater, may be in the Bible it's next to godliness, but in Pittsburgh it's next to impossible."

This May Bore You

Dentist.—"Has that tooth I just finished drilling out ever been filled before?"

Patient.—"No. This is the first time I've ever had it treated."

Dentist.—"That is strange. This instrument I used on the tooth has several flecks of gold on it. Surely they came out of that tooth."

Patient.—"Great Scott, doc! You've drilled right on through into my collar button!"

We're Here Today And Gone Tomorrow

A quack doctor was holding forth about his famous herb tonic to a rural audience.

"Yes, gentlemen," he said, "I have sold this tonic for twenty-five years and never heard a word of complaint. Now what does that prove?"

"That dead men tell no tales" came from a voice in the crowd.

It Might Have Been Old Age

A Washington physician was once walking on Connecticut Avenue with his five-year-old son when they were obliged to stop at a side street to await the passing of a funeral procession.

The youngster had never seen anything of the kind. His eyes widened. Pointing to the hearse, he asked, "Dad, what is that?"

"That my son," said the physician, with a grim smile, "is a mistaken diagnosis."

Some More Howlers

Doctors say the increased birth rate shortens lives!

Digestion is carried on in the stomach by aid of acrobatic juices!

The stomach, according to a dyspeptic, is a pear shaped cavity containing the organs of indigestion.

The way people contact consumption is as if a well man spits and the sick man sees the well man spit, well the sickman thinks he might as well spit when the well man can, and so he spits; so it is not well for any one to spit.

Changes!

A Doctor told a film actress she was run down and needed a change.

"A change," she said, "Do you know that during the last eighteen months I've had three husbands, four cars, three jewel robberies, eleven cooks, two divorces and seven landlords? What other change can you suggest?"

Double Fee

"You have charged Rs. 10 for consultation, doctor. Is not your fee five rupees?"

"Don't you see it is double pneumonia?"

How it Began!

After the defeat of the Spanish Armada in 1588, a naval tournament was arranged for the victorious British seamen and, at the request of Admiral Drake, Queen Elizabeth consented to come down from London and award the prizes. The officer in charge of the arrangements proved himself one of the

most tactful men in history—he issued orders that "on account of the dazzling loveliness of Her Majesty, all seamen, upon receiving their prizes, should shield their eyes with their right hand." Thus was born the naval and military salute.

Unalienable Rights

"... that all men are created equal; that they are endowed by their Creator with certain unalienable rights; that among these are life, liberty, and the pursuit of happiness."

—Thomas Jefferson.

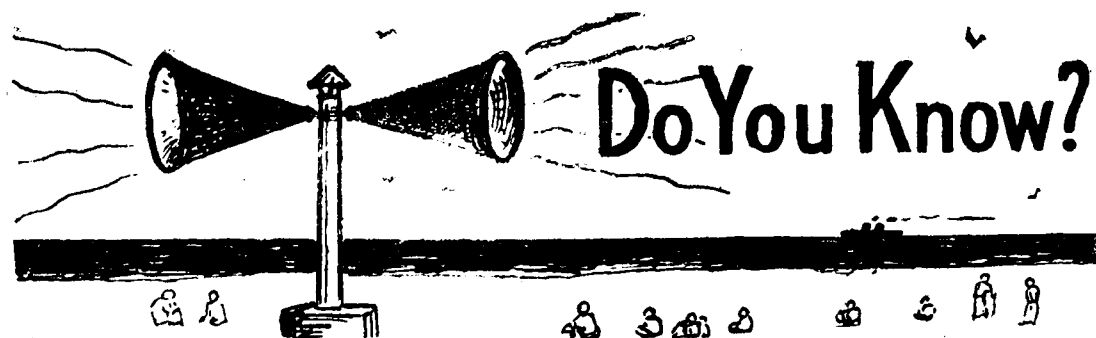
Doctors do Differ

On Wachusett, I sprained my foot. It was slow to heal, and I went to the doctors. Dr. Henry Bigelow said, "Splint and absolute rest." Dr. Russell said, "Rest, yes; but a splint, no." Dr. Bartlett said "Neither splint nor rest, but go and walk." Dr. Russell said, "Pour water on the foot, but it must be warm." Dr. Jackson said, "Stand in a trout brook all day."

*R. W. Emerson, Journal,
August, 1859.*

For Keeps!

Once upon a time a good medical man was watching a funeral procession, pondering a while on the "much and goodly game which he had brought to pot." A dog, who was also watching the funeral train, said to him "Say, doc, ain't it funny? When I bury a bone I do it so that I may dig it up again and pick it by and by, while you bury your stuff for keeps."



POPULATION OF INDIAN STATES

Q.—How is the population distributed among India's States?

A.—

MILLIONS.

Ajmer ..	0.73
Assam ..	8.51
Bengal West ..	24.52
Bhopal ..	0.85
Bihar ..	39.42
Bilaspur ..	0.13
Bombay ..	32.68
Coorg ..	0.17
Cutch ..	0.55
Delhi ..	1.51
Himachal Pradesh ..	1.08
Hyderabad ..	17.69
Jammu and Kashmir ..	4.37
Madhya Pradesh ..	20.91
Madras ..	54.29
Manipur ..	0.54
Mysore ..	8.06
Orissa ..	14.41
Patiala and E. Punjab States	3.32
Punjab ..	12.61
Rajasthan ..	14.69
Saurashtra ..	3.96
Travancore and Cochin ..	8.58
Tripura ..	0.58
Uttar Pradesh ..	61.62
Vindhya Pradesh ..	3.88

(As on March, 1950 by the Census

Commissioner, Government of India.)

LANGUAGES OF THE WORLD

The actual number of languages spoken and written in the world is estimated by the French Academy as 2,796.

The English language is used by more than 270,000,000 people. Of these, 150,600,000 are residents of the United States or inhabitants of its territories, 1,000,000 are Liberians, and 118,500,000 are either citizens of Great Britain and its dominions or inhabitants of its dependencies.

The Chinese language and its dialects are used by nearly 500 million people.

Hindu and Indian dialects are used by nearly 333 million people.

The Russian language and its dialects are used by 166 million people.

Spanish, 93 million—African, 93—Japanese, 97—German, 78—French, 68.

* * *

TWIN ENEMIES OF CHOLERA

"In connection with the present epidemic (the Egyptian cholera, 1947), it has to be observed that, in spite of repeated reintroduction from villages, the disease has failed to establish itself in any of the towns provided with satisfactory water supplies and adequate sewage disposal systems."

—WHO's Epidemiological Record.

DATES IN TB HISTORY

1882

Dr. Robert Koch read a paper before the Physiological Society of Berlin in which he proved that a bacillus he had discovered was the necessary cause of tuberculosis.

1884

Dr. Edward L. Trudeau, exiled to the Adirondack Mountains because of tuberculosis, established "Little Red," the country's first free sanatorium. It had two beds, a little woodstove for heating, and no running water.

1895

Roentgen discovered the X-ray—used today for making chest X-ray examinations.

1896

Theobald Smith published an investigation of a strain of tubercle bacillus of bovine origin. Today dairy herds are practically free from tuberculosis as a result of tuberculin testing. TB of bovine origin has been almost eliminated among human beings.

1907—08

Von Pirquet and Mantoux initiated the use of tuberculin in a diagnostic test for the detection of tuberculosis.

1943

Dr. Selman A. Waksman discovered the antibiotic, streptomycin, the first drug successfully used against the tubercle bacilli found by Koch.

Royalties donated by Dr. Waksman will build an Institute of Microbiology, named in his honor, on the Rutgers University Campus.

—NTA Reporter.

* * *

HEALTH EDUCATION AND SERVICES

Health education and health services go hand in hand. Singly, they cannot do an effective job. Together, they complement each other and form an invaluable adjunct in the overall health programme. Health education without opportunities for medical consultation is sterile. Likewise, medical services exist in a vacuum unless they are called to the attention of the people.

—Tula Salpas, USPHS, Indust. Hyg. Newsletter.

A Solution to our Housing Problem

(Continued from page 410)

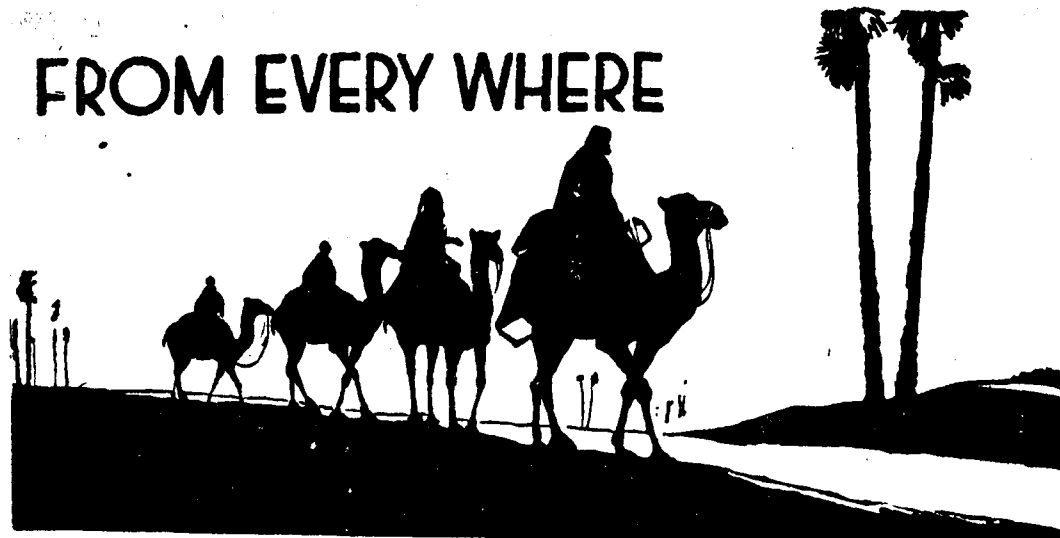
used, the compressor for driving a pneumatic plant and the gun for sand blasting or in irrigation works for strengthening dams, lining canals, etc., an advantage not possessed by any other type of machinery for the prefabrication.

Yet another advantage of adopting this type by public bodies would mean the dropping down of the price of the usual building materials like bricks and stone from their present fabulous levels and would make them within easy reach of individual house builders. Consequently, inflation is fought,

an advantage which cannot be easily brushed aside in our present difficult condition.

In commending this type to the attention of all public bodies, building firms and housing societies, the author has no personal axe to grind. He appeals to one and all to ponder over this suggestion of his, come over and inspect the houses that have been built for the B.B. & C.I. Railway in the interests of this national problem and if they view it at the proper angle they would be convinced that herein lies a real solution to this housing famine that confronts us to-day.

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.

SKIN DISORDERS AND OCCUPATION

Skin disorders due to occupation are responsible for a large number of cases of occupational disease. Some of them may be of very long duration and the cost of workmen's compensation can be high. It should be recognized that constant or repeated exposure to irritating substances will generally produce a skin eruption. When contact with such substances is known to exist, preventive measures should be adopted before disability develops. When care is taken from the start of the exposure most cases of skin disease can be prevented or controlled.

There are certain materials called primary irritants which irritate the skin. These include all alkalies and acids and many solvents and oils. In addition to the primary irritants some materials are capable of producing sensitization in certain indi-

viduals. Dyes, photo-developers, rubber accelerators, resins, gums, coal tar derivatives and explosives are among the common groups of sensitizing materials encountered in industry. It should be remembered that individuals vary greatly in their susceptibility to sensitizing materials.

The measures which will be most effective in controlling a given exposure are determined by the process, the materials used and the conditions under which the skin is exposed. These control measures are:

Where possible automatic or mechanical devices should be substituted for manual methods which require exposure to irritants.

Substitution of materials which are less irritating is sometimes practical. In the use of new materials enquiry should be made regarding their effect on the skin.

Local or general exhaust ventilation is sometimes necessary to draw off irritating

materials. In certain industries involving exposure to high temperature, sweating may be a contributing factor to the development of a skin ailment. General ventilation, by reducing the temperature will assist in controlling this condition.

In all exposures, proper cleansing of the skin is of first importance. Failure to remove irritating substances at the end of the shift increases the duration of exposure. Drastic methods of cleansing—for example the use of strong alkalies and solvents—may be as destructive to the skin as the industrial exposure. Installation and maintenance of adequate washing facilities, which include hot water, mild soap and suitable equipment for drying with the insistence that they be used, is the first requisite of an adequate control programme.

Protective clothing should be used to cover parts of the body exposed. Aprons, coveralls and boots are indicated under certain conditions of exposure. Gloves should be impervious and durable. Contamination of the inside of the gloves with the irritant increases rather than decreases the ordinary exposure. All protective clothing should be carefully stored when not in use and regularly cleaned.

Substances which provide some protection have been developed for application to the skin before starting work. These protective skin creams or pastes are available for various types of exposures.

New employees may be careless in the handling of irritating substances thus creating unnecessary exposures. Many exposures may be markedly reduced by careful work habits. Employees should be familiar with the irritating properties of the materials used.

It may be necessary to remove employees with a skin irritation from exposure till healing takes place. Each case requires individual consideration and medical supervision is advised.

—EFFICIENCY NEWS.

VITAMINS ARE WONDERFUL BUT NOT SUBSTITUTES

Vitamins are wonderful, but they never take the place of rest, recreation or food. They are never a substitute for the proteins and carbohydrates and mineral elements of the normal, well-selected diet. In themselves, they do not give energy, or build bone, blood or muscle tissue. They are the catalysts of our body chemistry, the spark plugs to our motor, but they never take the place of the gasoline. Persons with a real diet deficiency should consult a doctor, who will, if he finds it necessary, prescribe the kind and amount of vitamins that are lacking.

What we need, says Inez Hobart, University of Minnesota extension nutritionist, is the whole range of vitamins and food elements. Taking vitamins in pill form, without prescription, we are apt to get an over-supply of one vitamin, which may make a difference in the utilization of other materials. We still know very little about the total effect of large dosages of one vitamin. Taken in large quantities, over-dosage is possible, creating a toxic condition dangerous to health. Intended to cure a food deficiency they may actually create another still more serious.

The best, and the least expensive place to get our vitamins, says Miss Hobart, is from the natural foods of a balanced diet.

The seven basic foods chart is a simple and good guide to follow in planning meals. This lists the kinds of food that you should eat every day. The seven groups include: milk and milk products; meat, fish, poultry and eggs; green and yellow vegetables; butter or margarine with vitamin A added; uncooked fruits and green salads; potatoes and other vegetables; and whole grain cereals and bread. Be sure to have two or three servings from each group each day. Taken that way, vitamins are more palatable, more readily utilized by the body—and certainly a whole lot easier on the pocket-book. Everybody's Health, April, 1949.

—NTA REPORTER.

SOME NEWER IDEAS IN MOSQUITO CONTROL

(Harold Farnsworth Gray, Bol. Off. San. Panam, 27, 321—25: (Apl. 1948).

There are apparently four groups who have different ideas with regard to mosquito control practices: (1) control or abatement, (2) mosquito eradication, (3) mosquitoes of specific diseases only, and (4) mosquitoes as pests. The cost is an important factor and to a degree it determines the extent of mosquito control. In low-income groups, "even disease prevention of necessity can cost but little." In a relatively high-income group, disease prevention is not enough and should include control of pest mosquitoes.

The advent of DDT gave a new weapon in mosquito control. A residual effect material, applied to surfaces in dwellings, animal quarters, etc., it is effective for months, thus reducing greatly the incidence of dis-

eases such as malaria, urban yellow fever, etc. It is doubtful if residual sprays have any appreciable effect in reducing attacks by "field" mosquitoes. Their control will still depend upon drainage and larviciding. "But we are still a long way from utilizing adequately the naturalistic measures of controlled re-flooding and re-draining, and of constant level flooding supplemented by fish control, as effective and economical measures for the prevention of production of these species of mosquitoes." A consideration of thermal aerosols for "fogging" extensive areas is included.

—H. G. PAYROW.

—(P. H. Engg. Absts.—Sep. 49.)

REDUCING FLY POPULATION AT DUMPS

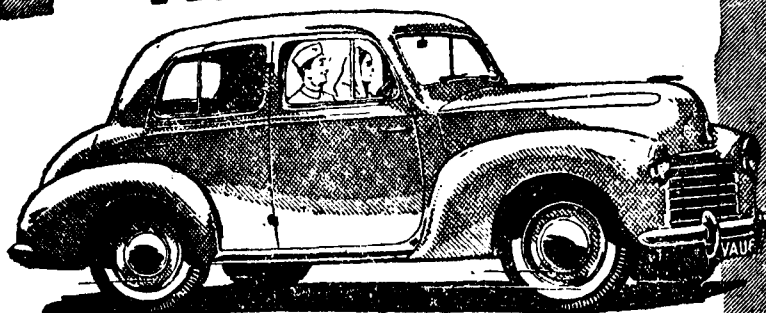
(Public Works. 80, 80: May 1949).

"Newark, N.J. during its latest fiscal year collected more than 1.2 million cub. yd. of refuse; most of which, together with street dirt, was dumped on low meadow land. An effort at fly control at the dumps was begun in 1947 by the Health Department and continued with marked success. A careful inspection and count had disclosed that there was an average of 100 flies per sq. yd. in the dump area, and the trucks were literally swarming with them. A 5% DDT water emulsion was sprayed weekly over the dump and the trucks, using a large tree-spraying truck. Two weeks after this treatment started, the fly population at the dumps had been reduced at least 70% and the trucks were practically free of them."

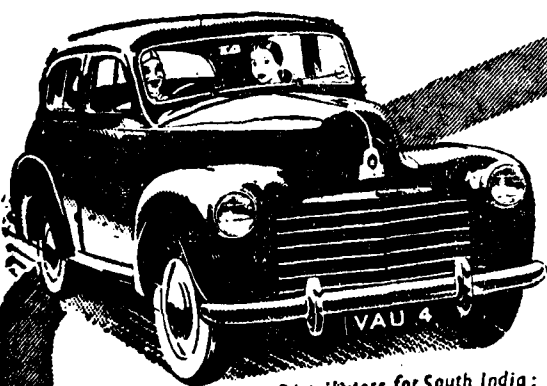
—W.H.B.

—(P. H. Engg. Absts.—Sep. 49.)

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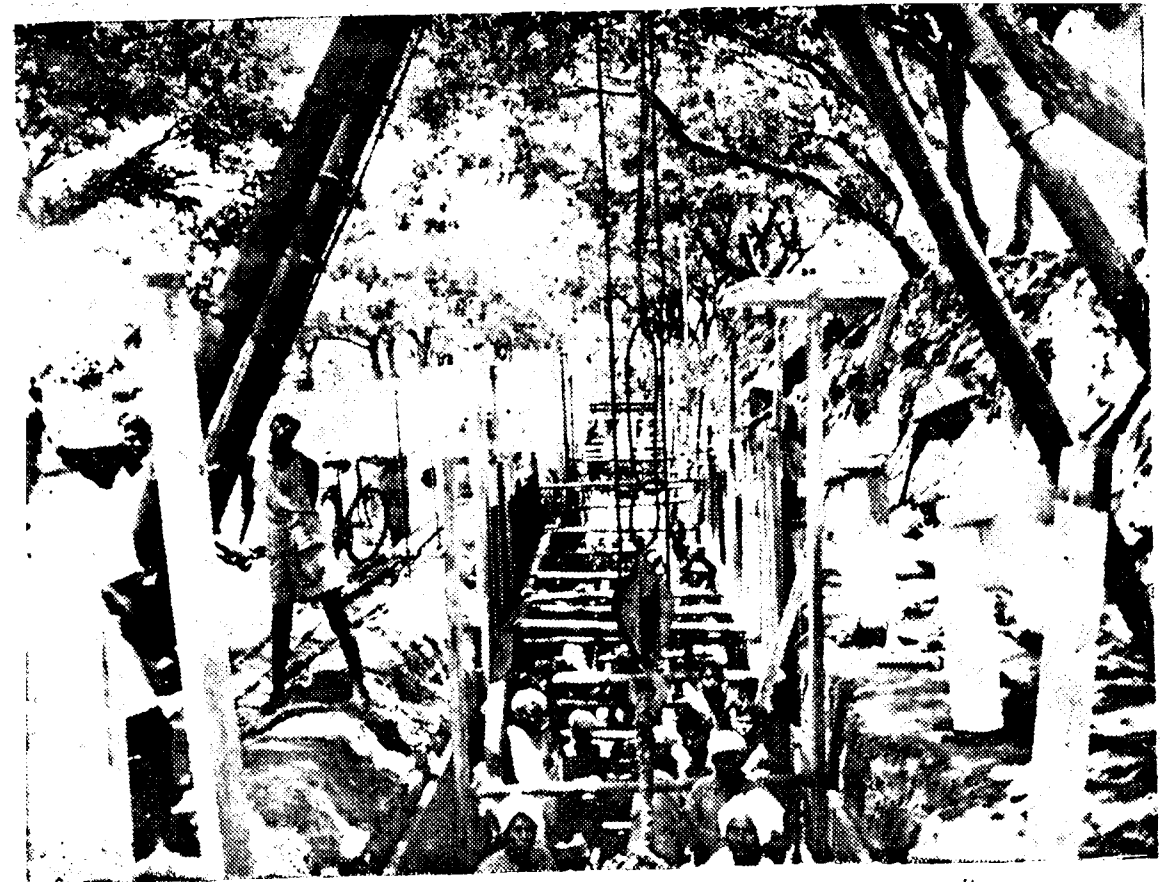
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MADRAS PUBLIC HEALTH DEPARTMENT

MADRAS State claims with some justification that it has the best organised public health service in the country. It also claims to have been the first in the country to place a Public Health Act on the Statute Book. But, like all other departments of the State, the Public Health Department too had to pass through many vicissitudes in its life.

At the time when Dr. R. Subramaniam took over charge, the Department had come to its lowest ebb of efficiency. It was no easy task for him to lift it from its degenerate condition. Within the short period of his service, he did much to enthuse in the officers a spirit of service *as a team*; he invited them to sink all personal considerations and differences. During his brief tenure of office, he was able to persuade the

Ministry of Health, Madras, to transfer the control of tuberculosis, leprosy and venereal diseases from the Medical Department to the Public Health Department. What he himself practised over a decade ago when he was the Municipal Health Officer, Mathurai (namely, transferring public cleansing to the Engineering department) has been accepted by the Madras State as the correct principle, leaving the medical officers of health to discharge their legitimate duties, appropriate to their training. These are no small achievements for a Director of Public Health, especially when one bears in mind the rigorously conservative attitude of the State administration. Dr. Subramaniam retired from service on 12th July, 1950, and he has a worthy successor in Dr. T. Lakshminarayana.

Many were hoping that both Dr. Subramaniam and Dr. Lakshminarayana could serve the State together as colleagues—one in Tamil Nad and the other in Andhra Desa. As ill-luck would have it, the new province was not formed, and we now have to dispense with Dr. Mani's services to make room for the next Director. Our regret in having to lose Dr. Mani is just equalled by our elation in getting as Director of Public Health, Dr. Lakshminarayana. Yet one cannot help feeling, human nature being what it is, how nice it would have been if the State had the benefit of both the fine officials simultaneously. Dr. Mani appears young enough to serve for some more years; Dr. Lakshminarayana's claims to the directorship are equally consolidated by his seniority. In having to



The old DPH. . .



The old Deputy. . .
The new Director. . .

make a decision on so tricky a question, the Government have done the best under the circumstances and sent Dr. Mani skipping home, to his village villa, far from civilization and the problems it entails.

Short, squat, lovable, close-cropped Dr. Subramaniam was thorough in his subject and took accuracy and perfection to painful extremes—painful to those under him. Equally short, a trifle more squat, a wee bit more lovable (being less of a task-master) and endowed with a remarkable sense of humour, Dr. Lakshminarayana is bound to prove a popular Director. We wish him success and we are sure, he will carry the torch given to him by his predecessor, who had made up the handicap, and take it to the goal in the unending olympic marathon race between disease and the department.

The members of the large staff of the Director, from the blithe Deputy Anantan Pillay, with the well-fed look on his face, to

the Health Inspectors working in remote rural areas, are all excellent workers, needing only encouragement and advice from their chief—which pats on the back, we are certain, Dr. Lakshminarayana will give.

The Department has a great future, and is fortunate in having Dr. Lakshminarayana for its Head and Dr. Anantan Pillay for the Deputy. Dr. Lakshminarayana is probably a stronger supporter of the environmental sanitarian's creed than even Dr. Mani; and Dr. Anantan, with a stout stick in his hand and zeal for field work, is bound to strike awe in the hearts of all. This combination may turn out great things.



The new Deputy. . .

TABLE 2

B. Statement showing comparative rates per day of labour on various Railways.

S. No.	PARTICULARS OF LABOUR.	B.B. & C.I. Ry.	G.I.P. Ry.	M. & S.M. Ry.	N.S. Ry.	B.N. Ry.	S.I. Ry.	Assam Ry.
		Rs. a. p.	Rs. a. p.	Rs. a. p. (United Rates).	Rs. a. p.	Rs. a. p.	Rs. a. p.	Rs. a. p.
1	Male cooly ..	2 4 0	1 6 0	1 12 0	1 12 0	1 4 0	2 0 0	1 10 0
2	Female cooly ..	1 12 0	1 0 0	1 2 0	1 3 0	0 14 0	1 8 0	1 3 0
3	Bhisty ..	3 0 0	1 10 0	1 12 0	2 8 0	0 14 0	1 8 0	1 10 0
4	Carpenter, I class ..	5 8 0	2 11 0	3 8 0	4 5 0	3 7 0 (Female cooly rate) (Local)	4 0 0	5 0 0
5	" II "	5 0 0		3 0 0	3 8 0		3 0 0	3 8 0
6	Helpers to Carpenters ..	2 4 0	1 6 0	1 8 0	1 12 0	0 15 0	2 0 0	1 10 0
7	Mason, I class ..	5 8 0	2 11 0	3 8 0	4 0 0	0 3 7 (Local)	4 0 0	5 0 0
8	" II "	4 0 0		3 0 0	3 11 0		3 0 0	3 4 0
9	Helpers to Mason ..	2 4 0	1 6 0	1 12 0	1 12 0	0 15 0	2 0 0	1 10 0
10	Helper to Fitter ..	2 4 0	1 6 0	1 8 0	1 12 0	0 15 0	..	..
11	Fitter—II class ..	4 0 0	2 11 0	3 0 0	3 4 0	3 7 0	3 0 0	4 12 0
12	Helper to Fitter ..	2 4 0	1 6 0	1 8 0	1 12 0	0 15 0	2 0 0	1 10 0
13	Welder ..	5 8 0	3 0 0	3 8 0	4 0 0	3 7 0	3 0 0	4 12 0
14	Helper to Welder ..	2 4 0	1 6 0	1 8 0	2 0 0	0 15 0	2 0 0	1 10 0
15	Nozzleman ..	5 8 0	5 0 0	5 0 0	5 0 0	5 0 0	5 0 0	5 0 0
16	Gunman ..	4 0 0	(assumed)	(assumed)	(assumed)	(assumed)	(assumed)	(assumed)
17	Helper to Gunman ..	2 4 0	(assumed)	(assumed)	(assumed)	(assumed)	(assumed)	(assumed)
18	Compressor Driver ..	5 8 0	5 0 0	5 0 0	5 0 0	5 0 0	5 0 0	5 0 0
19	Helper to Driver ..	2 4 0	(assumed)	(assumed)	(assumed)	(assumed)	(assumed)	(assumed)



Fig. ix. Prefabricated, single wall, double floor, flat roof GUNITE HOUSE at Vile Parle, Bombay.