

RECEIVED 10/20
RAS

RURAL INDIA

(Journal of the Madras Forest Panchayats)

A monthly Periodical devoted to the discussion of all
Topics of Rural interest.

EDITED BY

A. SWAMINATHA AIYAR.

Office—No 22, Brodie's Road, Mylapore, Madras, S.

Vol. IV. September, 1929. No. 9.

No.	CONTENTS.	Page
I.	Utilisation of Waste Materials By Dr. Gilbert J. Fowler, D. Sc.	231
2.	The Agriculturist and his uplift By Rao Bahadur A. Vedachala Aiyar, B.A.	241
3.	Rural Medical Relief By Dr. E. Forester Paton	245
4.	Rural Re-construction Notes By A Social Servant	248
5.	Madras Forest Panchayats	252
6.	Notes and Comments The Viceroy's Thanks Giving Fund— Mr. R. D. Anstead—The Co-operative Movement—Agriculture as a business —The Mango Blight—An Agricultural Bank for Madras—An Agricultural Prize—Economic Enquiry Committee —Travelling Cinema Cars.	255
7.	Reviews and Notices	259

Annual Subscription (inclusive of Postage)

Inland Rs. 3 : Foreign Rs 4—8.

Single copy, Inland As 6 : Foreign As 8.

Rural India reaches the Villages and Towns of India
It is the best medium for advertisement.

UPANISHADS

By Swami Sharvananda.

Isha and Kena	...	each	As 6
Katha and Prasna	...	each	" 12
Mundaka Mandukya (combined)	...	each	" 12
Taittiriya	...	each	" 14
Aitareya upanishad	...	each	" 6

(To the Subscribers of "Vedanta Kesari" each As 2 less.)

A high-class religious and philosophical monthly in English devoted to practical and popular exposition of the Vedanta-interprets religion in the light of the universal teaching of Sri Ramakrishna and Swami Vivekananda. Deals with the most momentous questions of the day, social, educational, economic etc.,—on non-sectarian lines. Having a wide circulation all over India, Burma, Ceylon, F. M. S. United States of America and other foreign countries, it is an excellent medium of Advertisement.

Volume XV began from May 1928. Annual Subscription Inland Rs. 3, Foreign Rs. 4 8.

(Many books at concession rates to the Subscribers)

Apply to **The Manager, Vedanta Kesari,**
Sri Ramakrishna Math, Mylapore, Madras.

THREE DAYS FREE TRIAL.

The Watch may be sent by V. P. P. on 3 days free trial, if after that time you don't think good and valuable, send it back to us and we will refund your money. Trial Solicited.

The Golden Pocket Lever Watch

Guaranteed for 3 Years.

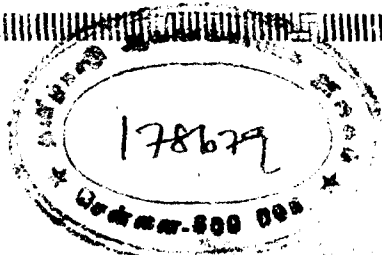


The case of this Watch is 18ct. Gold plated and nicely engraved. Gives the watch every appearance of solid Gold. It has well finished lever movements, very good time keeper. Absolutely Swiss Made. Price Rs. 3-15. Do. Nickel plated plain case Rs. 2-15. V. P. extra.

Jupiter Almanac for 100 Years from 1001 to down 2000 A. D. is sent free with each watch.

Apply to :—

Reliable Stores,
107 (R. L.) Bowbazar St.,
CALCUTTA.



The Student, Chingleput S.I.

The only All-India Magazine for High School Students

ANNUAL SUBSCRIPTION } **Single Copy Against 3 Annas in stamps**
Rs. 2. } (Free Copies Positively No.)

Send M. O. to the **MANAGER No. V. P. P.**

JUNGLEWALLAH.

A monthly journal dealing with Forestry, Sylviculture and kindred subjects. Published by Mr. C. P. Garudacharya Mudaliar, Retired Forest Range Officer, Wee-Nestle, Mambalam Madras.

ANNUAL SUBSCRIPTION

Rupees 5 for those whose monthly income is above Rs. 75 and Rs 3 for those below 75.

SAMPLE COPIES FREE.

Sample copy Free.

Of the Monthly Illustrated "Lasting Youth" dealing in topics of Sex & Health. Yearly Subscription Rs 2 only. Manager, "Lasting Youth" Amritsar.

Why The Tropical Insurance Company, Ltd.
Attained Unparalleled success in the First year

Because Among other causes, it has, an

Influential Board of Directors

Attractive tables

Special Disability provision

Agencies all over India

Applications from respectable Parties invited

Apply to :—Managing Director

P. O. Box No : 13—Delhi.

Bharata Dharma

A Magazine of Liberal Hinduism
The Official Organ of the Bharata Samaj
Published Monthly—Every Full-Moon Day
Editor Mr. S. Raja Ram
Annual Subscription Re. 1-8 ; Single copy As. 4 ;
Foreign 3Sh. & 4d.
The best Medium for Advertisement.
For copies & Advertisement rates apply to :—
The Managing Editor,
'Bharata Dharma' Adyar.

LAKHPATY PRINTING : :
: AND PUBLISHING HOUSE.

Racing Annual Vol : 7	Rs. 5-8
do Vol : 8 from Novr. 1928	
do to June, 1929 part I	Rs. 3-0
do Vol : 8 part 2, June to	
Novr 1929	Rs 3-8
do Busrah ond Bagdad up	
to date	Rs. 2 0

Apply to:—SECRETARY,
1. Empire Building, First Floor
Bori Bunder, Bombay.
2. 680, Taboot Street, (Camp), Poona.
3. 75-75a, Jamnadas Building, Bombay 9.

THE INDIAN EDUCATOR, MADURA.

An Illustrated High Class Cheap Monthly.
Editor : V. Aravamuda Iyengar B.A., L.T.
Annual subscription Rs. 2 only: Sample copies 3 As.
Controlled by an influential Editorial Board.
Recommended by District Educational Officers
For use in Schools, Colleges, Clubs and Libraries
Best Advertising Medium.
Send M. O. to the Manager
The Indian Educator, Madura.

Wonders of the Ancient Manuscripts.

Original. Valuable, Worth Reading, Interesting and very useful
Celestial Correspondence Vol. II.

Book of strange secrets, wonders & Mysteries in Lucid
English. This book contains many hidden mysteries. Price
Rs. 2 Postage Extra.

Apply to :—Tata Indian Science Institute,
Vizianagaram City, B. N. Ry (S. India)

THE NATURE HEALER

The only Indian Monthly Journal in English on
NATURE CURE.

Edited by Mr. N. C. Chatterjee, B. L.

Apply to :—

The Manager,—THE NATURE HEALER,
20-a Kaliprasad Chakrabarty Street,
Baghbazar, Calcutta

PEACE.

A high class Monthly of Life, Light & Love, in English
Annual Subscription Rs. 3.

SANTI.

A high class Telugu monthly run on the same lines as that
of the English journal. Annual Subscription Rs. 2 only.

For both the journals Annual Subscription Rs. 4—8 only
Swami Omkar President
Swami Rajeswarananda Editor

SRI SANTI ASRAM,
Totapalli Hills, Santi Asram Post,
Peddapuram Taluk, Godavary Dt. India

THE EASTERN HERALD.

A high class Monthly Journal.
Annual Subscription Rs 2 Foreign 5 Shillings,
Kalinga Buildings, Vizianagram City.

"Hindi Pracharak"

The monthly organ of the Hindi movement.
(Now enlarged)

Consists of two Sections

The Hindi Section Gives among other things a Hindi Correspondence course through the medium of English and easy articles from Hindi students in South India.

The English Section Discusses the movement in articles and gives reports of Hindi activities throughout South India.

To Subscribe to it

is

To Advertise in it

is

To increase your Business as it has a special clientele.
YEARLY SUBSCRIPTION Rs 2 ONLY.

Manager,

"Hindi Pracharak"

Triplicane, Madras.

The Mysore Economic Journal

THE ONLY JOURNAL OF
ITS KIND IN INDIA.

Has a large number of First-Class

Contributors on Economic Topics.

Sir Roper Lethbridge Writes :—

"MOST ADMIRABLE JOURNAL"

Sample copy : One Rupee.

Apply to Editor :—

'Mysore Economic Journal'

Gundopunt Building, Bangalore City P. O.

FEDERATED INDIA.

An All-India Popular Weekly.

Subscription Rs. 5 only, per annum.

323, Tiruvattyur High Road, Madras.

The Madras Journal of Co-operation

The Premier Co-operative Monthly in India.

Voices forth the Co-operative Opinion of the
Province.

ANNUAL SUBSCRIPTION

Inland :—(Including postage)—Rs. 4

Foreign :— " Rs. 4—12—0

Please Apply to :—

The Madras Provincial Co-operative Union,

Royapetta, Madras, S. India.

The Zarathustran and New-Thought Era.

An interesting occult and metaphysical publica-
tion that circulates around the world. Proclaims
Success, Freedom and Happiness for all. Issued bi-
weekly. \$ 1.00 yearly. Three months 25. c

Advanced Thought Index, P.O. Box 456, London,
Ontario, Canada.

Business MAGAZINE for Progress and Prosperity

A high-class English monthly devoted to Trade Industry,
Agriculture and allied topics. Contributions from accredited
penmen.

The best Advertiser circulating throughout India, Burmah
and Ceylon.

Annual Subscription Rs 2 post paid. Publishing Office :

George Town.

Madras.

No Educated Home should go without

THE SCHOLAR

A Monthly Journal devoted to Literature, Science and Art

The only Journal of its kind in India Recommended by
Eminent Educationists, District Educational Officers and Pre-
sidents of District Boards for use in Colleges and Schools.

Annual Subscription Rs. 3 Single copy As. 4.

The 'Scholar' needs and deserves your Support

Apply to:—The Manager, **The Scholar**, Palghat.

Get Acquainted with us

If courteous treatment, prompt service and the right jewellery at the right prices are what you are looking for, get acquainted with us and you will be delighted with the service we can render you.

Remember
we co-operate with
you by strictly adhering to the
policy of our ONE RATE SYSTEM.

Try
us once and
get convinced of the
benefits we offer you

Surajmal Lallubhai & Co.,
Popular Jewellers and Diamond Experts,
13, Esplanade
Madras.

RURAL INDIA

Managing Editor :—A. Swaminatha Iyer, B.A.

Vol. IV.

September, 1929.

No. 9.

Utilisation of the Waste Materials of the Farm and Country.

By Dr. Gilbert J. Fowler, D. Sc.,

Principal, Hercourt Butler Technological Institute, Coimbatore.



propose to consider first the utilisation of the waste materials of the farm and country and afterwards those of cities and towns.

In their little volume of condensed experience on Indian agriculture, recently published, the Howards write concerning wheat, "At the moment the most pressing problem in wheat production in India is the spread of intensive cultivation coupled with reduction in the volume of irrigation water used in raising this crop. Ground has been broken in this direction."

When the amount of organic matter in the soil is increased, yields of over 30 maunds to the acre have recently been obtained with only one watering.

I have myself seen fine crops of wheat growing at Indore, on land only recently barren but converted under Mr. Howard's instructions into well drained rich soil.

To obtain this result, in the first place the land is broken up and the weeds extracted—not by employment of heavy and expensive tractors but by the simple expedient of training oxen to "form fours." In this way, deep-rooting grasses can be removed and the land cleaned and the soil can be cultivated to

* Address delivered at the College Day and the Conference of the Madras Agricultural Students' Union, Coimbatore.

a depth of 8 inches without soil inversion. Weeds when brought to the surface can be rotted down to compost, and so a pest is made into an asset.

With the increase of crop resulting from improved methods increase of straw and trash is obtained, and the manure supply automatically increases.

Much work is now being done all over India, I am glad to know on the scientific preparation of artificial farmyard manure from the ordinary refuse of the farm.

The work of Richards and Hutchinson at Rothamsted showed us all the principles which must be followed if the preparation of artificial farmyard manure is to be successful. They showed that there must be a defined ratio between the nitrogen and carbon on the raw materials used. They found that the organisms responsible for the breaking down of straw and other carbonaceous material function best in the presence of air and further that the nitrogenous matter must be applied at suitable concentration and under neutral or slightly alkaline conditions.

Just as in the allied problem of sewage purification it has been possible greatly to accelerate the speed at which reactions take place by the production of a suitable activator, so the efforts of some of us have been directed to find out the conditions under which artificial farmyard manure or compost, as it used to be termed, can be produced in the shortest possible time. To sum up the result of the work so far done at Cawnpore, we find that compost is most rapidly made if the materials are cut either by hand or in a chaff cutter into small pieces and first of all thoroughly rotted down with a mixture of cow-dung and cow's urine applied in a thin decoction so that every portion of the mass comes in contact with the inoculant and fermentation takes place evenly in consequence throughout the mass. On piling in a heap not more than 3 or 4 feet high and turning over from time to time, keeping moist with the same decoction, very high temperatures are attained which destroy all insect larvae. When the temperature begins to drop a further quantity of chopped raw material is added to the heap which now becomes the "activator." About 25 per cent. only of new material should be added at one time and thoroughly mixed

with the activator, the cow dung and urine decoction being added at intervals as before. The method obviously can be readily systematised: At one end of a long heap is the finished rotted material which can be dropped if necessary into a pit to be stored until required and at the other end is the new material. The formula given to the mali is 2 old and 1 new, i.e. a given heap of the finished material is divided into three parts, one part sent to store, the other two parts mixed with one part of partly rotted raw material and so on.

There is no doubt whatever that apart from nightsoil which is specially effective, cow's urine is the best material to use in making composts and every care should be taken to conserve this precious source of nitrogen.

In the recovery then of the waste litter of farms and garden leaves of weeds, straw, etc., as well as cow dung and urine we have a striking example of the utilisation of one form of waste material for the benefit of agriculture. The Government farm at Dacca for the first time in its history, we are told, has had in this way an adequate supply of manure. At Indore, thousands of cartloads of such manure have been applied to barren soil with the result of a constant increase in crop.

It is sometimes argued and in any event practice implies the assumption that all this artificial preparation of composts is unnecessary and that the raw material can be simply applied to the soil and be allowed to rot there. Biochemical science and the experience of thousands of years of Chinese agriculture contradicts such an assumption. Again to quote from Howards's book, page 45:

"The practical problem is to prepare a supply of fermental organic matter and to apply it to the soil at the right moment. In this matter the Indian cultivator has much to learn. His scanty supplies of manure are allowed to dry outside the house and are applied to the land in an undecayed and unfermented condition. After the seed is sown the soil has to prepare this undecayed material at a time when all its energies should be devoted to providing the plant with food materials. Both these processes require large volumes of oxygen and thus compete for a substance likely to be in defect. The result is over-work and fatigue. Crop production really consists of two processes

which are best kept separate (1) the preparation of food materials which should be done outside the field and (2) the growth of crop—the real work of the soil. The Chinese were the first to discover and to adopt this master idea. They go to infinite trouble to convert all sorts of refuse animal and vegetable matter into finely divided manurial earth ready for the use of the crop”

Almost all kinds of vegetable matter can be utilised for the preparation of these composts.

The utilisation of oil seed cake has received much attention and greatly improved results can be obtained with a little scientific attention to the preparation of the material.

I have spoken of the use of oil seed cakes as manure; there are, however, other uses possible to the advanced technologist. We hear from the United States of the utilisation of groundnut husks for slab tiles and fibre concrete and attempts are being made to convert them into rayon and paper though these have not yet been successful. A systematic study should be made by thoroughly competent chemists of the possible uses of the waste material from seeds of all sorts.

My colleague Mr. J. A. Hare Duke, Oil Expert to the U. P. Government, has recently been experimenting with *linseed stalks*, a waste product of the linseed oil industry. He has obtained a fibre which he assures me is more than the equal of jute. Basing the value of the fibres at about half that of the lowest quality Russian flax and basing the yield of fibre at 3 maunds of good fibre and 3 maunds of tow per acre it would appear that at present India is annually throwing on the manure heap from linseed alone fibre and tow of the value of well over six crores of rupees.

As I have mentioned publicly on more than one occasion there is a great possible market in Europe for *tomatoes* and tomato products which, with reasonable care can be grown quite freely in various parts in India. The simplest method of marketing tomatoes for consumption out of India is as peeled tomatoes in tins. This yields a large quantity of tomato skins which by suitable treatment can be converted into quite a useful chicken food, and so we come to consider the question of egg production for which there would seem to be an unlimited

market specially since the troubles in China have disturbed the supplies from that quarter.

Before we leave the country for the town, mention should be made of the great waste due to *Kutchas* roads. Any one who has to visit a distant village off the beaten track will soon have experience of the waste of time and energy due to *kutchas* roads. Even in the more public highways the rough and ready methods used for temporarily patching roads are very largely a simple waste of public money. Howard suggests also that if the narrow wheels usually fitted to bullock carts can be replaced by stronger wheels with broad iron tyres, roads would last longer and break-downs would be far fewer than is now the rule. The loss of man and cattle power due to the collapse of cart-wheels on the main roads to large cotton markets must run into thousands of rupees annually.

To sum up then, apart from all these incidental possibilities, the results of intensive cultivation alone show at *Shajehanpur* that by the use of adequate manure and water the yield of standard crops such as wheat, gram and sugarcane can be more than doubled as compared with the yield of the ordinary cultivator. More striking figures even than these can be given and it is clear as Howard states that in the Punjab and the U. P. alone crores of rupees worth of potential crop production are literally thrown away.

To come now to the second portion of our subject the waste from towns and cities. The main waste materials which we have to consider are (1) Towns' Refuse; and (2) Human excreta.

Considering first Towns' Refuse; the composition of this will vary to some extent according to the season and according to the district and the product of Indian towns is quite different from that which is met with in richer countries. In the United States where there is considerable waste of food, town's refuse often contains a good deal of fat and before any further treatment it is usually submitted to a rendering process to get out this valuable constituent.

In India so far as my observation goes towns' refuse consists mainly of straw and paper and the ordinary sweepings of streets together with a good deal of mere dust. It is often

intermixed with a certain amount of night soil and cowdung and consequently has a certain value on this account. At Nasik with a population of nearly 40,000 people some 85 cart-loads of sweepings are removed daily to the Municipal Depot. Experiments indicated that this material could be rotted down to an excellent manure by a systematic fermentation with cowdung or night soil in the manner I have already described.

In general it seems to me that the best method for dealing with kutchra would be to submit it to a double screening process i.e., in the first place to remove large objects such as old tin cans and pieces of glass and metal. The material passing through this open screen should fall on to a second and fine screen through which will pass the dust which can be used for rough concrete or similar purposes. In this simple way the organic material present will be concentrated and can then be scientifically fermented in the manner already described.

We now come to the very important question of the enormous waste involved in the non-utilisation of the manurial value of *nightsoil* and *sewage*. The figures given indicating possibilities if this material were fully utilised are almost unbelievable. In the very interesting volume "Uses of waste Materials" compiled by Prof. Bruttini and published by the International Institute of Agriculture at Rome very full statistics are set out on this subject showing the value of the sewage from most of the capital cities of the world. Among them Delhi is mentioned and it is stated that the nitrogen derived from its population of 283,000 is sufficient to fertilise a minimum of 10,000 and a maximum of 95,000 acres, according to the dose given. Consider what this means for all the towns in India.

When we consider that a very large proportion of this material is either simply wasted in India or worse than wasted in that it is allowed to become a centre of disease breeding infection by flies and in other ways, we shall realise the wisdom of a recent utterance of Mahatma Gandhi who states that "Indians are clean as individuals but not as members of the Society or the Nation of which the individual is but a tiny part." He observes that "corporate insanitation is not the least of the diseases to which India is subject"

Anyone whose duty it is to look into the sanitary disposal of town waste must agree with him.

Of the village the sage of Gurgaon says: "There is very little manure in the fields but plenty of filth in the village and on the children. Do you think that by manuring your children they will grow better?"

It is true that the problem of the sanitary disposal of human waste has been one of increasing complexity but I hope to show you how by the most modern method known as the *Activated Sludge Process* all this vast abomination can be rapidly transformed into clean and valuable products by a simple process of scientific aeration.

Before discussing this important subject in detail it will be well if we have a clear idea of the main constituents of the sewage which has to be purified. These constituents can be broadly divided under the following heads:

1. Soluble matters.
2. Colloidal matters.
3. Matters in suspension.

An ordinary sample of sewage taken in a bottle has the appearance of a grey turbid liquid, from which about half an inch of dark grey deposit will generally settle. The turbidity is caused by the colloidal matter, by which we mean, very simply, sticky substances which are not entirely dissolved nor yet entirely in suspension and which are exceedingly difficult to deal with, since they clog up the surface of land or of artificial filters. The colloidal matters in sewage are mainly derived from the churning up of faecal matter in the sewer.

The matter in suspension which settles down at the bottom of the bottle, consists of sand and other mineral detritus which mechanically retains a certain amount of sewage matter.

In solution are the soluble salts of ammonia which are mainly derived from urine.

If the unpleasant mixture is allowed to remain in absence of air it undergoes putrefaction with production of evil smelling substances and hence arises the sewage nuisance.

We may inquire how is it that with the immense quantity of waste products of human life produced day by day there is not an overwhelming catastrophe. The answer is that Nature

has provided her own scavengers in the form of minute organisms known as bacteria. These are so small that were one of them to be magnified to the size of a man and the man magnified in proportion, the magnified man would be 1,000 miles tall or would reach from Bombay to Calcutta. Although these scavengers are so minute, fortunately they are immense numbers of them and so the work gets done.

Some bacteria work in absence of air and generally give rise to nuisance and putrefaction. The bacteria which are most useful in sewage purification are those which work in the presence of air or oxygen which is available either in the interstices of the soil, or dissolved in water.

The ordinary domestic cat has thoroughly scientific knowledge of sewage disposal, carefully burying its excreta in the soil and what is more, instructing its children to do so. Once buried in the soil the offensive matter is dealt with by the bacteria everywhere present in fertile soil, and converted into harmless nitrates which are soluble crystalline salts and into the brown humus characteristic of good fertile soil. The nitrate deposit found on the sites of old abandoned villages are obviously derived from old organic matter.

The activated sludge process is simply an adaptation of Nature's methods, so adjusted and developed as to obtain the maximum results, in the shortest possible space of time.

If air is allowed to bubble through a sample of sewage a number of changes progressively take place. The first to be noticed is the gradual conversion of the colloidal matter, which gives the turbid appearance to the sewage, into brown granular particles which readily settle leaving a sparklingly clear liquid. In course of time nothing is left in solution but mineral salts, viz., chlorides and nitrates.

This complete oxidation of sewage by the action solely of air in conjunction with the bacteria originally present in the sample of sewage occupies a considerable time, possibly many days, and for this reason purification of sewage by aeration alone has long been deemed impracticable. It has been found, however, that if the brown granular deposit which forms is allowed to settle out from the liquid and the latter decanted away and a further quantity of sewage aerated in contact with

the brown deposit and this process repeated, the brown deposit being retained at the end of each operation, then as the quantity of the deposit increases the time required for the purification of the sewage decreases. Finally when the deposit has accumulated to the extent of about a quarter of the total volume of the sewage the latter can be purified in a few hours time and the process becomes a practical proposition. The brown deposit has been termed "activated sludge."

For the practical carrying out of the activated sludge-process, artificial aeration is of course necessary and the sewage needs to be freed from heavy detritus and from floating solids; that is to say, it requires in general to be passed through a system of catchpits and screens before the aeration process.

Briefly the process is carried out in practice as follows: The screened sewage passes into a long narrow aeration tank into which air is forced in a state of fine division. It has been found that this fine division is necessary for the sake of economy of air and it is effected by the use of what are known as diffusers of porous material through which the air is forced creating a fine emulsion of air and sewage. The effluent passing away at the end of the aeration tanks is purified but contains, of course activated sludge in suspension which must be separated and returned to the inlet of the tank. The aeration tank is therefore followed by a settlement tank in which the activated sludge rapidly settles out and from which the clear and purified effluent passes. The deposited activated sludge can be lifted from the bottom of the settlement tank by means of compressed air either back to the inlet of the aeration tank or out of the system altogether on to sludge drying beds from which it can be removed and used as manure. Any surplus over and above the 15 or 20 per cent of the volume of the tank which is necessary to effect purification is thus removed from time to time. The whole installation occupies very little space. The sewage e.g., of 100,000 people can be purified in tanks holding a million and a half gallons, that is a space of 300 feet by 100 feet by 8 feet. In addition, building will be required to accommodate machinery for air compressing and possibly sludge pressing and drying.

To purify under European conditions the same quantity of sewage to an equal extent by means e.g., of septic tanks and

percolating filters would require approximately double the tank space and in addition 6 acres of percolating filters 6 feet deep.

That every problem has been solved cannot be said of activated sludge any more than it can be said of human nature itself, but at any rate a great many initial objections have been overcome and the process has shown itself to be one capable of purifying sewage efficiently and at a reasonable cost. The tanks, now in operation at the Madura Mills, Tuticorin, are situated immediately under a latrine serving 2,000 people. A slight smell is necessarily present where the fresh sewage enters the tanks. This can easily be got over by covering up the inlet. When once the sewage has met the activated sludge there is no smell whatever.

To come now to the interesting subject of the fertilising value of activated sludge, this from the first has been shown to be quite exceptional; not only is there a percentage of nitrogen and phosphorus, but these elements are present in organic combination and in forms specially suited for plant food.

The activated sludge process does for manure in solution what the compost making does for solid material. It prepares it for the plant.

The aeration of the sewage in the activated sludge tank, is equivalent to constant tillage of the soil, and the consequent result is attained in a much less laborious and more efficient way.

Moreover the effluent if not required for irrigation can be stored without nuisance.

There are vast possibilities of increasing the wealth of this country if material which is at present wasted or worse than wasted is properly made use of. It would seem worth while indeed for a special officer to be appointed by every Government to obtain statistics of the available wealth-producing materials in the Province which are at present being wasted and to stimulate and correlate their utilisation by officers of the various Departments concerned. Such a beginning has already been made in the Bombay Presidency and I have on my files a tabular statement of the receipts from the sale of kutchara and night soil actually collected in 23 towns of the Nasik district.

On calculating the actual value of these materials and the price obtained, there is a very great discrepancy showing enormous possibilities of increased returns if the matter were seriously taken in hand by the agricultural department working in conjunction with the sanitary officials, the whole work being as I have suggested correlated throughout the Province and ultimately throughout India. Thus, taking Nasik alone, the value of its night soil, not theoretically, but on the basis of what is paid by Chinese contractors in Shanghai, amounts to Rs. 35,000 annually. Actually only Rs. 2,500 are received and no account is taken of the kutchar available. The necessity for such a systematic attack cannot be doubted, if any increase is to be made in the real wealth of India. It is becoming almost a commonplace that without a general rise in the standard of living, real industrial development in this country is hardly possible.

How often it has been said to me when discussing possibilities of improvement, "That is all very well, but India is too poor." India does indeed suffer from what in the jargon of present day psychology is termed a deep seated "poverty complex" which is due not to fate or to foreign rule, but to ignorance, superstition and inertia. It is for the students of such Colleges as this in which we are here assembled to spread the enlightenment which they have received within these walls and on these fields to their less fortunate brethren in the scattered villages all over the Presidency. It is not an impossible task. Gurgaon, Indore and the demonstration vans of your own Agricultural Department have shown the way. Good humour, kindness, energy and deep heart-whole sympathy and desire for better things will in due time cause to arise that new India which is present in the mind of every man of good will.

The Agriculturist and his Uplift.

By Rao Bahadur A. Vedachala Aiyar, B.A.

Retired Registrar of Co-operative Societies

In trying to ameliorate the condition of the agriculturist we have to find out the various causes which have brought out his depressed condition at present and to formulate schemes so as to remove such disabilities and to secure well ordered pro-

gress. In the pre-British days, the village ryot was self contained in the sense that he produced what was wanted for food and a small surplus to meet his clothing and his obligations to the State. Disputes between the members of a village never went beyond the limits of the village, their settlement having been effected in the village panchayat or caste guild. Even religious festivals were undertaken in common by a sort of family tax which was uniform. The village servants were all given their hire in the form of grain in a fixed proportion to the yield. The villagers led a simple life. Pleasures were not enjoyed by pledging the future income. It might appear that life was stagnant then, but it was progressive with reference to the means of the people and contentment reigned supreme. The people loved their home, their lands, and their cattle and had a pride in the advancement of the village: community life was prominent in their minds. The British Government, after all a foreign agency, had to apply its own administration from a trader's and military point of view and as a conqueror had to carry on the administration so as to produce the minimum benefit to the agency employed in the administration. Exploitation by trade had to be encouraged and the welfare of the people had to be attended to so long as it was not inconsistent with exploitation. Contentment by the people had to be practised more as a matter of fateful necessity. Community life could not be encouraged. The idea of the ruler and the ruled had to be stressed and had to be permeated into the lower ranks of servants who had to be employed to carry on the administration. The village head-man became a servant of the Government, was given a low pay and was tacitly allowed to get his quota from the village as best as he could. The administration became more and more centralised. Education was practically confined to the creation of Government servants to assist the administration, but having been free to all, the Indians who were really civilised people invited such education and began to study the conditions of people elsewhere. The English educated Indians became the interpreters between the Government and the people and led the way to educate the people about their rights and responsibilities. Exploitation in various ways by the administration which was allowed owing to the ignorance of the people was resented at first mildly but later

was loudly proclaimed in the press and the platform. The British administration has been trying to smoothen such discontent by various methods but it has not been successful. The surest way of removal of such discontent is in the resuscitation of the village by ameliorating the condition of the village inhabitants and in short by raising their income to meet the needs according to the present standard of life. The transference of power to the villager is not all that a villager wants. He must have freedom to live, fair opportunities for earning his living and must be in a position to live a better life. Simplicity of life means that the villager should not waste his income in frivolities, and should not indulge in unwanted pleasures at the expense of his future or his neighbours. By all means, let him live a simple life but he should not be denied the improved amenities of life to be enjoyed suited to his environment and his earning capacity. Economic uplift is to be secured by various methods. The problem for real solution is how to improve the economic well being of the village population. It is also a matter for investigation as to whether the village economic condition at present is capable of such improvement. Land holding by the agriculturists which was once considered the life blood of the people is at present the monopoly of the money-lenders, traders, and non-cultivating classes who have saved money by speculative enterprises. The people who once held lands and were actually connected with the agricultural industry as labourers, supervisors, are becoming rare. Many classes of people lease out their lands for rent and seek other occupations. The result of such an evolution in the village is that cultivation has to be actually carried on by tenants at will who have no interest permanent in the lands or even for a fixed number of years. They do not care to improve the land or raise valuable crops by application of productive manures. They do not keep strong bulls for ploughing nor do they secure adequate credit to carry on cultivation adequately. They themselves could not get sufficient lands to engage him throughout the year. They have to fall back on some work or other in the off seasons and have in many cases to migrate to other places to secure work.

Lessees, landless field labourers, tenants-at-will should undergo a complete change and should be such as to breathe a

co-operative self reliant and selfrespecting spirit as opposed to competitive and individualistic spirit. The latter has become a habit with the rural people during the last 60 years and it has also fostered a tendency for living beyond one's means imitating the baneful town life and its attendant evils of ever borrowing from others with absolutely no means or chance of returning them. A detailed economic survey could be made and a constructive programme formulated so as to bring within it the rural folk who can contribute labour and who can be placed in a better economic position on business lines and not in a philanthropic spirit. Self help should be the watch word and we can think of no other *manthra* than this for the amelioration of the rural population. Extraneous aid, governmental or non-governmental, should take the form of inculcating knowledge to the rural folk on various matters relating to village life, sanitation, economic adjustment, increased production by improved methods of cultivation, reduced expenditure by closer adjustment of absolute necessities, thrift, and intelligent study of religious precepts and practices. Social and economic advancement must be aided with a sympathetic turn of mind by the agencies of Government (Revenue Department, Agricultural Department, Industries Department, Forests) etc.

Settlement of disputes should be secured by village courts, village Panchayats and by Village Arbitration Courts. This kind of rural work can be undertaken by politicians of various creeds. Drinking and untouchability should be wiped out of the rural folk. The favoured fortunate rich might help the rural folk to rise to the full height of their stature by giving them well equipped village guides, philosopher and friend.

The labourer should be helped to secure longer leases and to serve permanent employees of land lords and should be assured of a living wage, not merely to keep body and soul together but to maintain his self respect and to be within easy reach of ordinary amenities of life. The landlords who are mere owners of land but who consider it *infra dig* to attend to cultivation or effectively to superintend the cultivation, manuring and irrigation operations should be educated to understand the dignity of labour and to earn more by increased production, the result of efficient methods of cultivation. A regular economic survey should be made and a healthy atmosphere created

under which the tenants and the landowners will put their conjoint intelligence, and industry to secure the maximum of profit from the agricultural industry. Both should be educated to think out subsidiary industries of commercial value so as to use their spare time for their benefit. They could spin yarn and arrange for their clothing at very little cost. In fact the mentality of the agriculturists, and landowners, might be expected to take up such work as an important item for spending their resources which are got mostly from the ryot population. The Taluq Boards should also change their mentality by careful regulation of their resources and by careful rationing of the money so as to provide for the benefit of the rural population in preference to other wasteful items of expenditure which only benefit the better class of people in raising loans.

Rural Medical Relief

By Dr. E. Forester Paton of Tiurpattur
Medical Ashramam.



THE present condition in South India with regard to the medical profession is that in spite of the very large expenditure on medical work by Government the villages are yet almost left untouched and the poor people in rural parts are dying practically without any medical help. The present position is that there is too much overcrowding of medical men in towns and that the medical learning imbibed by young men is not being utilised to make the lives of the great mass of people in rural parts healthier. The general health and physique of these people is going down for want of adequate medical relief nor are any real attempts made to change the non-hygienic customs and insanitary habits of the masses. The Western system of medicine which is looked upon as the only scientific up-to-date system has not yet been fully favoured by the masses. The villager is still clinging to his ancient system of medicine. What are the reasons for this state of affairs? One of the

* Extracts from the Inaugural address delivered to the Madras Medical College Association with Major K. G. Pandalai I.M.S. in the Chair.

underlying causes is the poor economic condition of the people. Another is illiteracy. The average villager is a shrewd man and not an ignoramus. Again, there are the many social customs that stand in the way. Leaving aside all these factors have they, the educated and the Government, done what they could in the matter? A great deal of fault lay with themselves. The spread of the Western system of medicine was accompanied too often by officialdom and red tapism. If the villager hated anything it was red tapism. He did not understand why the distinguished Medical Officer should spend a great deal of his time sitting in his office instead of looking after him and fellow-villagers. There was lack of understanding among medical men about villagers' habits and manners and what he expected of a medical man. The average medical man has not got the patience or the kindness to win the villagers' confidence. It is useless to try and hustle the villager. There is also the pressure of work and the doctor has not got time to pay individual care and attention to each patient. This led to slipshod work. There is too little interest in getting at a correct diagnosis. A medical man must keep up his interest and keenness in diagnosing the disease.

Again in many of their hospitals there is a real lack of moral honesty. Both in Government as also in missionary hospitals, too much advantage was taken of a patient's condition and money was squeezed out of him. This made the patient miserable. Again some doctors were too interested in their fees and there was an impression created that the treatment was prolonged in order to get more fees. In the hospitals generally, there was unwillingness to take trouble or inconvenience oneself for the sake of a poor villager. Under these conditions how could they expect the villager to have faith in them. In many mofussil places there was also lack of professional courtesy and co-operation. When a rich man was ill many doctors were called in not for consultation, but for treatment. They would all give separate advice and separate prescription. In the end, the patient would die without any substantial medical relief. Again few doctors took trouble to find out whether any fellow doctor had treated the patient he was called in to treat. It was not fair to go and treat the patient in the absence of the fellow doctor. They

must all try to pull up the standard of professional courtesy and co-operation so that they might all have real respect from the people.

The fault for these things was not only in them but in their training which was bound up with foreign conditions of life as well as learning the system in the foreign language. The villager did not understand Western imprint upon the system nor could the doctor explain to him in vernacular to the patient like the 'Vydiar' and satisfy the patient as what he was suffering from. In China the whole medical education (Western system) was imparted in the Chinese language in a very efficient manner. The colleges and schools were exceedingly well-off. In India also they must show an adaptability. Then only the spread of Western medical system would make headway in the villages.

The difficulties in the way of a medical man going and working in the villages were many. His social upbringing was against it. It was difficult for him to suit himself to village conditions, having been brought up in town. He might feel lonely. There would be lack of conveyance. There was also very little chance of making large profits. He could not expect fees from the villagers except perhaps in Chettinad, where fees were commensurate with his services. Even then if honest and sincere work was put in, the village would recognise it and pay them a living wage.

There was a great mass of unrelieved suffering in rural areas. Young medical men should undertake rural medical practice on their own initiative, either for some years or if they were able to make a livelihood on it as a life work. What was needed was to make this possible. The idea might sound as utopian. But it is not really so. I have been working in rural parts in Thiruppattur for the past seven years. Myself and my colleague, Dr. Jesudasan, without any help from Government were able to help the people in those parts to a great extent. They had in the Ashram about 25 beds. A great variety of cases were brought there. We lived with them and visited their huts and dwellings and mixed with them. We also believed in prayer with the patient for his recovery. We simply used to pray with the patient and this helped a great deal to win the confidence of those rural people.

By rendering such medical relief in rural areas the young medicees would get a real thirst for knowledge gained in experience and a desire to make themselves thoroughly proficient in their own art. What was needed was a spirit of adventure and resourcefulness. Such work could be carried by two friends doing work by partnership. This would also give them moral support and companionship. It would be a stimulus to efficient work and exchange of thoughts between them. Each could specialise in one or two subjects and thus divide their work in the villages. The knowledge they gained in their colleges was out of the taxes of the poor villagers paid to the State. They were debtors to the villagers to some extent. Their colleges were maintained by the villagers. Would they not do something to relieve their sufferings? Should they not devote at least some years of their services to the less fortunate brethren in the villages? He would appeal to them to take up that work. In such a work, primarily, they might not get the greatest gain for themselves but it would be of the greatest gain for the uplift of their community and country. There is no greater joy than in really helping people in distress.

Rural Reconstruction Notes.

(By a Social Servant.)



On the 31st of May last, Mr. N. Gopalaswami Aiyengar, Collector, Anantapur District, performed the pleasant function of opening a Rural Reconstruction Centre at Lepakshi, a village with a famous temple, some eight miles from Hindupur. This is the sixth and last of the centres that we re-opened during the last co-operative year by the higher co-operative institutions of this province under a scheme drawn up by the Hon. Mr. Ramdas Pantulu and worked under the auspices of the Provincial Co-operative Union. As elsewhere, the work will be in charge of a local committee—the members of this committee being Mr. D. G. Sastri, Secretary of the District Co-operative Federation, Mr. G. Rameswara Rao (ex-M.L.C.) of the Anantapur Bar and Mr. Venkatanaranappa of Lepakshi. The function was a very successful one. It was attended by a large number of people from all over the Taluk and even outside. There were several

lawyers of Anantapur, the Dt. Munsiff and some vakils of Penukonda, many members of the District and Taluk Boards, and representatives of Panchayats and co-operative societies. The Provincial Co-operative Union was represented by Mr. V. Venkatasubbayya one of its secretaries, and the officers of the Co-operative and Public Health Departments were there.

It is fortunate for the Lepakshi centre that Mr. Gopalaswami Aiyengar is the Collector of Anantapur now. As Registrar-General of Panchayats he endeared himself to one and all by his accessibility and devotion to the cause. No one, official or non-official, is more keen on village uplift than he. To snatch a day in the midst of official duties for this function was indeed a pleasure to him. His thanks were due to the organisers of the function, not theirs to him, he said with sincere feeling. He assured the gathering more than once that he would be most happy to render to this centre all the assistance he could as Collector of the district and the people in charge of the work had only to ask him. A number of persons took part in the proceedings which lasted from 4 p. m. to nearly 8 p. m. with an interval for tea and photo. The most important speeches were naturally those of Mr. Venkatasubbayya and the Chairman. The former explained the scheme under which the centre was started and outlined its probable programme of work. He then contrasted the rural life of today with its utter lack of self-reliance, its lack of unity and corporate feeling and its fondness for litigation with what it was in olden days when the central Government was not so all in all as it now is; he showed how poor India is, economically and physically, compared with any of the civilised countries of the West or Japan and he pointed out that God has given us capacity just as much as to other people and all that we need is a strong will to be better. With such a will we could be the equals of any nation; without it we would continue to be the inefficient subject nation that we now are.

Mr. Gopalaswami Aiyengar made some very illuminating observations in his concluding speech, especially on a controversy which had been semi seriously indulged in by some of the speakers as to the relative importance of co-operative societies and panchayats in the programme of rural reconstruction. Mr. Gopalaswami Aiyengar pointed out that there

were important spheres of life such as buying and selling, using improved seeds, manures &c. where compulsion was not to be thought of, and in all such spheres our efforts would have to be made through the co-operative societies. There were again other spheres in which the common good of the community could not be left to the caprice of individuals—such as *Kudimaramath*, prevention of epidemics &c and for such objects the co-operative society was no good and the Panchayat was indispensable. To put it in other words, all activities which are generally left to private enterprise in national life were very well suited for cooperative societies, but those activities which are taken up by the State must be assigned to the Panchayats. They were like two legs to the movement without either of which it would be a cripple. Mr. Gopalaswami Aiyangar then complimented the Penukonda Taluk Board on its liberal and sympathetic attitude towards the Panchayats, an attitude which was by no means characteristic of most Taluk Boards. He advised those that were connected with the work of the Lepakshi centre to keep in touch with the Labour Department in particular and secure for the Adi-Andhras through that Department all the help they could.

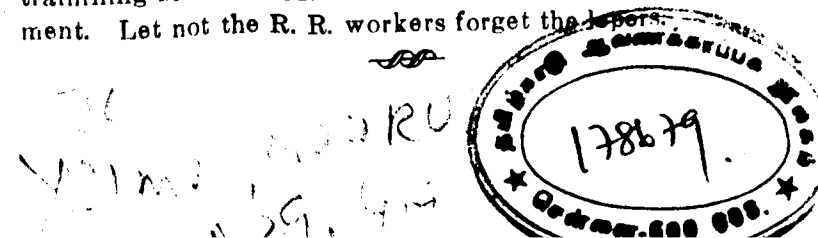
A very interesting piece of information relating to this centre is that a young and rising vakil of Anantapur, by name Mr. C. Ramachandra Rao has offered to give up his profession and become its paid worker at a considerable self-sacrifice and that his offer has been gladly accepted by the Provincial Co-operative Union. Let us wish every success to him.

x x x

The people of the villages which are included in the area of the Tirupachanur Rural Reconstruction Centre in the South Arcot District held a conference at Kandamadadi on Saturday the 27th July under the chairmanship of Rao Bahadur K. Sitarama Reddiar, Dist. Board President and member of the local R. R. Committee. It was more in the nature of a business conference than a spectacular one, though it was attended by many people who did not strictly belong to the villages of the centre. The main object of the conference was the framing of a programme for the local Committee and the paid worker, on examining the urgent needs of each village. It was

resolved to start Panchayats in certain villages, to obtain for the area the services of a trained midwife, to open night schools in five villages, to remove prickly pear in some of the villages and so on. Where found absolutely necessary help would be given for these objects out of the funds of the R. R. Centre. It appears, a suggestion was made that a breeding bull should be obtained from Government but strangely enough the Reddies of the villages received the proposal with marked indifference. In Chingleput and South Arcot, cattle have deteriorated to the lowest possible level and plough cattle are rarely raised locally but purchased from outside. It does not yet seem to have dawned on the minds of the cultivators of the R. R. area that this defect could be slowly remedied. The Brahmin landlords of one of the villages, however, were eager and willing to look after the bull if one was obtained from Government.

Among those that spoke at this conference was Dr. Santra of Bihar who was camping at the time at Villupuram as leader of the Leprosy Survey Party. He drew the attention of the villagers to the terribly high prevalence of leprosy in that area and stressed the point that it could be brought down only by improving the water supply, food, general sanitation &c of the villages—in other words, the eradication of the disease depended entirely upon the success of the rural reconstruction movement. It would appear in its early stages the disease is curable and even easily curable. There was no need and it was not good, said Dr. Santra, to get panicky about it. Though the object of his present visit to our province is only to study the prevalence of the disease, he is treating patients two days in the week. Several hundreds take injections from him each day and the onlooker cannot help feeling sad that so many are infected. But Dr. Santra bids the onlooker cheer up, for the disease is really not so infectious as it is supposed to be and it is capable of eradication like so many other diseases by early treatment and improvement of living conditions. An Indian, a young man, kindly and simple, Dr. Santra is drawing crowds in a wonderful manner. He is not only healing the patients but training several medical men of our province in the treatment. Let not the R. R. workers forget the lepers.



Madras Forest Panchayats.

A deputation consisting of Rao Bahadur B. Muniswami Nayudu Garu B. A. B. L., M. L. C., President, Madras Forest Panchayats Association, Mr. A. Swaminatha Ayyar B. A., Retired Dy. Collector and Editor "RURAL INDIA" and Mr. A. Rajagopala Reddi, President, The Forest Panchayatdars Union, Limited, waited on the Hon'ble Mr. A. Y. G. Campbell, Member of Government in charge of Forest Panchayats to represent various matters relating to the administration and working of the Forest Panchayats. Mr. Muniswami Nayudu as the spokesman of the deputation handed over to the Hon'ble Member a written representation which *inter alia* dwelt with the following matters.

The first request was to the effect that the Forest Panchayats should be placed on a statutory basis. At present, the Panchayats are now constituted by the local Forest Panchayat Officer subject to the control of the District Collector. Elections are held informally from among the ryots assembled. The Panchayats thus constituted have to levy grazing fees etc., and expend on forest watch, improvement etc. The Panchayats have obligations to discharge and contracts to be entered into. It was urged that for the satisfactory performance of these duties, the Panchayats should be constituted into a body under a statute with powers and liabilities defined, they determined and with powers to elect its members.

At present only some of the Panchayats are authorised to compound offences and the compounding fees levied by them are credited to the general revenues of the State. The request was made that no distinction should be made between Panchayats in respect of the levy of the compounding fees and that the entire amount collected under this head should be handed over to the Forest Panchayats concerned. In support of this request, it was urged that while Government would get no substantial benefit by the addition of this small income, it would be of material advantage to the Panchayats most of whom have only slender resources and they would be placed in funds to satisfactorily maintain and improve the forests entrusted to their care. The further request was made that the sale proceeds of forest produce being the subject of forest offences should be handed over to the Panchayats concerned.

The classification of forests now in force is not satisfactory and a large area of what is now classified as 'Provincial Forests' are really 'Local Forests' and yet Government have retained most of that area under their control. The deputation urged that a reclassification of forests should be made, and all forests classified as 'I V Forests' under the Horne Committee scheme should be transferred to 'Local Forests.' These areas are not of provincial importance but are only intended to serve local needs for fuel and grazing.

At present rents payable by each Panchayat are fixed once in three years in some cases and annually in other cases. This periodical settlement of rents is a cause of uncertainty as to the future and prevents improvements and results in an unprogressive condition of things. The deputation urged that it was necessary that a Panchayat should know definitely what rent it has to pay which should be on a permanent basis or for long periods so as to secure to the Panchayats the benefits of all improvements made by them in the forests. That would be an incentive to the Panchayats to embark on a progressive policy of Forest Development and preservation of grazing facilities. It was further urged that provision should be made for remission of rents or grant of rebate under certain circumstances. Some Panchayats are often faced with a deficit balance which cannot be attributed to mismanagement but is largely due to unfavourable seasonal conditions or unpromising local agricultural conditions over which the ryots can have no control. Such cases require sympathetic consideration and relief. The deputation pointed out that the rents now fixed are in the majority of cases high and more than what the incomes from the areas could justify, and urged that the Government might be pleased to appoint a Committee to investigate into the question and reduce the rents suitably. The further request was made that in the years in which the Panchayat Forests do not yield sufficient revenue to pay the lease amount after meeting incidental charges, a rebate be allowed to cover the loss.

At present grazing fees realised by the issue of permits for a larger number of cow units than are fixed in the agreements are credited to Government. The deputation requested Government might be pleased to order that excess grazing fees

should be handed over to the Panchayats concerned for effecting improvements to the Panchayat Forests and that the Panchayats be authorised to grant permits for quarrying in the forests and for tapping trees for toddy.

Another subject on which a representation was made by the deputation related to the location of coupes in close proximity to villages which was prejudicial to the interest of the ryots in that it was almost impossible for their cattle not to encroach upon ground reserved for coupes. Consequently the ryots are obliged to take their cattle by longer routes to reach the grazing areas and suffer much inconvenience. The abolition of coupes near the villages was urged and if that was not possible, to locate the coupes in consultation with the local ryots so as to avoid unnecessary inconvenience.

At the Conference of Forest Panchayats held on 21-3-26 which was opened by His Excellency Lord Goschen and Presided over by the Hon'ble the Home Member, Sir Muhammed Usman Sahib Bahadur, it was resolved that a Journal in three languages, English, Tamil and Telugu should be issued every month to let the Government and the people know about the progress and working of Panchayats, to enable Panchayatdars to exchange thoughts and to promote the general welfare of the Panchayats and the village community as a whole. The Journal is issued by the Forest Panchayatdars Union, Limited, which has been registered as a Company under the Indian Companies Act. The Union is the provincial organisation of the Forest Panchayats and occupies in this respect the same position which the Provincial Co-operative Union does to the Co-operative Societies. Besides conducting the Journal and doing propaganda work for the benefit of the Forest Panchayatdars and the Panchayat villages it serves as the spokesman of the general body of Panchayats and is a recognised organisation for representing the needs and requirements of the Panchayats and their grievances to Government. It has a programme of further improvements as indicated in paragraph 14 of the report of the Forest Panchayat Officer printed in G. O. No. 1028-9-S dated 27th May 1927, Revenue Department. These include the introduction and improvement of fodder and ensilage and improvement of the village cattle, and combating of diseases among them and undertaking such other ameliorative work as

will conduce to the economic improvement of the ryot and his cattle. Now that the stage of organisation of forests is over, the deputation prayed that the Forest Panchayatdars' Union Limited, might be given all the help financial and otherwise which the Government are now giving to the Co-operative Department to enable it to undertake the improvements indicated above. Also that *Rural India* which is the official organ of the Madras Forest Panchayats and is doing propaganda work for village uplift should, besides getting the facilities which a newspaper or a Journal gets by being placed in possession of 'Editors Table' papers, particularly those relating to Forest Panchayats, Agricultural Improvements, Co-operation, Rural Education and Sanitation and cottage industries receive a grant from the Government for carrying on the work which it has taken upon itself to do. Incidentally, the deputation brought to the notice of the Hon'ble Member the lack of uniform procedure in the administration and working of the Panchayat forests especially after the transfer of their control to District Collectors. The needless interference by the Panchayat Deputy Tahildars, often in trivial matters, causing unnecessary annoyance to Panchayats was also mentioned. The Hon'ble Member who heard the deputation patiently, kindly promised sympathetic consideration of the grievances urged. The deputation then withdrew after having thanked the Hon'ble Member.

Notes and Comments.

THE VICEROY'S THANKS GIVING FUND. The All-India Fund inaugurated by H. E. the Viceroy to express India's joy and thankfulness at the happy recovery of his Imperial Majesty the King Emperor from his serious illness is intended for the alleviation or prevention of sickness and disease in this country. This is a most appropriate way of commemorating the recovery of his Majesty. As well pointed out by one of the speakers at the Sheriff's meeting presided over by His Excellency the Governor, in loyalty and devotion to the person of the sovereign, India yields pride of place to none and there is neither East nor West, nor race nor creed, nor politics in commemorating this happy event and the object for which the proceeds of the fund are intended to be devoted, specially appeal to the people of this land, particularly in the rural areas. *Rural India* offers its most cordial support to the scheme and ventures to suggest that opportunities may be afforded even to

the humblest villager to offer his mite to this worthy endeavour. It is the poor suffering villager that knows what suffering is. The Madras Forest Panchayats will do well to vote a grant to the fund through their provincial organisation to testify to their loyalty and to the appropriateness of the object with which the fund has been started.

MR. R. D. ANSTEAD Mr. R. D. Anstead M.A., C.I.E., the popular Director of Agriculture of Madras is retiring this month after seven years of devoted service to the Madras Agricultural Department. The department has developed considerably during Mr. Anstead's regime both on the side of research and demonstration. After the report of the Royal Commission on Agriculture was published, Mr. Anstead lost no time in acting on the recommendations of the Commission. The work of the department has grown in several directions and Mr. Anstead's reorganisation proposals which have been accepted by Government will give additional impetus to the already growing work of the Department in that men and material will now be available. Mr. Anstead has deserved well of the people of this Presidency as testified to by the numerous references at farewell gatherings to his qualities of head and heart. *Rural India* to whose pages Mr. Anstead frequently contributed useful and valuable articles is particularly grateful to him. We wish Mr. Anstead all health and happiness in his well earned rest. Mr. G. R. Hilson B.Sc. (Edin), the Deputy Director of Agriculture who succeeds him will, we have no doubt be as popular and successful as his worthy predecessor has been.

THE CO-OPERATIVE MOVEMENT. The silver Jubilee of the passing of the Co-operative Act which was recently celebrated in the city and the province has given the opportunity to take stock of the situation to examine the foundations and to explore the possibilities of further lines of advance. Those who have closely studied the movement and carefully watched its working are beginning to think and rightly that there is greater need now for consolidating the existing societies and weed out the weak and undesirable ones instead of multiplying societies, good bad and indifferent. The Hon'ble Mr. V. Ramadas Pantulu in his Presidential address to the East Godavari Co-operative Conference laid special emphasis on this aspect of the movement and pointed out the need for paying more attention to the rectification of the existing societies than to expansion, which might be best achieved by recognising the difference between the inspection by a Central Bank and supervision of local Unions and Federations. The former concern itself mainly to preserving the financial stability of the society while the Unions are intended to devote more attention to the educative aspect of the movement. It becomes herefore necessary to separate the two aspects, inspection and supervision. Another defect which it is time, should be rectified is to see to it that the men entrusted with the management and supervision are the right kind of men by whose loyal and unselfish service the movement stands to gain. The defects which we should not be afraid to

own have been contributed by men who have no clear conception of the co-operative ideal and have utilised the movement for narrow selfish ends.

AGRICULTURE AS A BUSINESS. From the Report of the Department of Agriculture in the Bombay Presidency for 1927-28, we learn that attention is being paid to the business aspect of agriculture. It is now widely recognised that one of the main reasons for the unsatisfactory condition of agriculture is the large amount of spare time left in the hands of agriculturists, and economists have given very careful study to the solution of the problem through looking for suitable subsidiary occupations. There is, however, very little exact information on record in support of these views. The Professor of Agricultural Economics in the Bombay University has been collecting detailed information on this subject. From some data collected about the employment of agricultural families, the fact emerges how enormously a well adds to the efficiency of agriculture through providing more or less continuous employment to the labour force. But every cultivator cannot provide his land with a well for want of underground water but there must be several other forms of land improvement on which he might fully employ his spare time with the aid of *taccavi*. Other lines of investigation are the study of costs and the marketing of produce on both of which the efficiency of agriculture as a business greatly depends.

THE MANGO BLIGHT. The Trustees of the Sir Sassoon David Fund have financed a scheme for investigating mango blight. It is the experience of mango growers that the inflorescence becomes diseased causing serious diminution of crop. This blight is caused by an insect and mildew. The study of the insect and mildew is in progress. It has been found that where the crop is adequately protected from these pests, the out-turns are very materially increased. The problem of bearing in alternate years is also under investigation. The results of these investigations will be watched with interest.

AN AGRICULTURAL BANK FOR MADRAS. The other day, in the unavoidable absence of Dr. Subbarayan, the chief Minister, Dewan Bahadur P. Parankusam Navudu performed the ceremony of opening the Agricultural Bank of India, Limited. Mr. J. Sankar Lal, the Managing Director of the Bank in explaining its aims stated that facilities for rural credit were utterly lacking in India and the ryot was falling a victim 'To the blood-sucking leach of a village sowcar.' He added that 'The Joint Stock Companies doing banking business confined their operations in reality to only a limited circle of the public and transacted business mainly with some trading concerns, and men doing business on a large scale. Their territorial influence was again confined to the limits of big cities, and occasionally to some towns, but never did they extend their service to the agriculturists in the villages and towns, who in reality were the people who were in sore need of financial

help. These poor agriculturists were subject to fabulous rates of interest, and in addition to bearing the burden, they were often forced to sell their hard earned produce to their creditors at rates far below the prevalent market prices. Even the institutions that had come into existence with the avowed object of administering specific relief to the indebted downtrodden ryots like the co-operative credit societies, were not productive of any appreciable good."

Unless backed by substantial state aid, a private organisation like the new bank cannot do much to achieve its objects. With such aid amply given and with sound business capacity and character of the men at the top and of the staff, it can do a great deal for the economic uplift of the villager. It is a good thing that the Bank has come into existence at a most opportune time when the Banking Enquiry Committee has begun work. The essential purpose which the banking enquiry is designed to secure so far as the interests of the rural population are concerned is that the cultivators should be enabled to secure the credit he needs both for the improvement of his lands and its equipment and for the marketing of his produce. We wish the new Bank all success and prosperity.

AN AGRICULTURAL PRIZE: The Department of Agriculture, Bihar and Orissa, has published the following notification:

In memory of Mr. E. J. Woodhouse, late Economic Botanist and Principal of the Sabour Agricultural College, who was killed in action in France in 1917, a prize in the form of a silver medal and books of a combined value of Rs 85 will be awarded to the writer of the best essay on a subject of botanical interest. The length of the essay should not exceed 4,000 words. The competition is open to graduates of Indian Universities and to Diploma holders and Licentiates of recognised Agricultural Colleges in India who are not more than 30 years of age on the date of submission of their essays. Papers should be forwarded to the Director of Agriculture, Behar and Orissa, Sabour, Bhagalpore, East Indian Railway Loop, before November 1, 1929.

The subject for the essay must be selected from the following list. Intermittent bearing of the mango tree, its cause and cure. The value of hybridisation in the improvement of crops. The law of organic growth. The bearing of the study of root development to agriculture. The bearing of Cytological research on heredity, more specially in relation to plant breeding.

The following **TOUR PROGRAMME** of the Re-Settlement Economic Enquiry Committee, has been sent to us for publication.—

<i>Halting Places</i>	<i>Date</i>	<i>Villages to be visited.</i>
Rajahmundry	11-9-'29 Morning	
Polavaram	11-9-'29 Night	
Kunavaram	12-9-'29 „	
Bhadrachalam	13-9-'29 „	
Kunavaram	14-9-'29 „	
Prakkilanks	15-9-'29	Vegaswaraparam.
Koyyalagudem	16-9-'29	Mangapati Devipata.
"	17-9-'29 Morning	Busarazupalli.
Kovvur	17-9-'29 Night	Devarapalli
Tanuku	18-9-'29	Khandavalli.
"	19-9-'29	Vaddur and Rachur.
Ellore	20-9-'29	Singavaram.
"	21-9-'29	Settivarigudem.

TRAVELLING CINEMA CARS. The Royal Commission on agriculture in India recommended that the Agricultural Departments should consider the advisability of undertaking the production of cinema films with a view to give a greater publicity to their doings. As stated in a note circulated to the Madras Agricultural advisory committee which considered the question, "A great deal of skill is required for the preparation of Cinema films if any real advantage is to be taken of this development of modern science from an educational point of view. The films which must be clear, should deal with local subjects and depict conditions with which the people are familiar and the captions must be carefully thought out and they must be in appropriate vernaculars and in English. It is necessary that a professional man should be asked to stage and take to films."

In this connection the suggestion of Mr. Anstead, the retiring Director of Agriculture that a whole time cinema photographer with experience to take films and utilising his services for the different departments which need him, and dividing the cost between them should be employed, deserves to be considered.

Reviews and Notices.

HINDU EXERCISES. We have received from the Andhra Ayurvedic Pharmacy Ltd, 43 Harris Road, (Mount Road, P. O. Madras.) the reprint of a paper on the subject by Charle

D. Roth printed in "Physical culture" edited by Bernarr Mac Fadden U. S. A.

In a "Forward" Dr. A. Lakshmipathi, the founder of the Andhra Ayurvedic Pharmacy well says that in reprinting the article it is his desire to awaken the lost interest of Indians in their ancient arts and culture. An American observer of India writing of the Indians said, "The men are all finely formed with a muscle tone, I don't often observe among our strong men. Their muscles are beautifully rounded and have the appearance of being covered with a thin layer of fat just enough to give them that beautiful rounded appearance so noticeable in the muscles of the ancient Greeks. They are perfect men". No wonder that the world famous American champion Zbyszco says of them "They are the most wonderful men in the world, those Hindus". It may be of interest to note that in India for thousands of years, this physical training was not confined to the athletic class alone. In families of the higher castes, it is a family custom to practice physical training. When a family can afford it there is always retained among the family servants a wrestling instructor. His duty was to instruct the youngsters of the family in physical exercises and also in wrestling, which naturally resulted in the body becoming strong and healthy and has made the upper class Indians physically the equal of any race of men on earth. The secret of the Hindu system consists in exercising those parts of the body where the seat of strength resides. There are two main movements in the Hindu system, one of them *dund*, exercises the middle of the body, the other *baithaks* provide leg movements exclusively. *Dunds* are performed from a position on all fours and their effect is upon the small of the back, the muscles of the sides, the muscles of the abdomen, chest and thighs. In fact *dunds* exercise practically every muscle in the body except the legs. *Baithaks* make up for this deficiency. Illustrations descriptive of the two modes of exercise are given in the pamphlet. Those who are interested in the revival of the ancient Hindu system of physical culture will do well to carefully read the pamphlet. Dr. Lakshmipathi has done a service in reprinting the article and making it available to the Indian public.

Student life in the West by A. J. Appaswami M. A. (Harward), D. Phil (Oxon). (Christian Literature society for India 1929)

We have perused with great interest these delightful pen pictures of "Student life in Europe and America", particularly in the Universities of Oxford and Harward with which the author is familiar. Dr. Appaswami has described things as he has seen them, in a direct, racy style with occasional references to the student life and conditions in India by way of comparison. The cost of education is comparatively low in America, unlike, in Oxford where education is for the few, not for the many. A characteristic feature of American education is that a student could during his term earn his way through college. Oxford stands for culture. The routine of Oxford life is not designed with a view to cram the largest amount of information into a student's mind in a given time, but rather to cultivate and ennoble the mind by a study of the great classics and a life of abundant social interest. About the methods of study, the one thing which impresses a visitor to the West is the full use which students, make of dictionaries and note books unlike here in India where the tendency is to store up the memory with all the facts relevant to the subject of study. Unlike our Indian student his western brother does not wholly depend upon the professor for his work. There is a habit in Oxford with regard to examinations which may well be copied by Indian students. An Oxford student takes a brief holiday before an examination to refresh and strengthen himself. He does not rush pell-mell into the examination hall after burning the mid-night oil, weary of body and dizzy of mind. Teachers in the Universities of the West are generally scholars first, and teachers afterwards. The personal influence of the teacher is more in evidence in the German universities and in this respect there is something analogous to the *guru sishya* of the old Hindu system of education. In the space of some 80 pages the author has managed to give all the information which an Indian student going to the West requires and we heartily commend this little book for his careful study.

The Madras Agricultural Journal. Though belated, the publication of the special issue of the Madras Agricultural Journal (formerly Journal of the Madras Agricultural students

Union) giving an account of the celebration in 1926 of the Golden Jubilee of the introduction of agricultural education in India (price Rs 1-8) is valuable as an authoritative history of agricultural education in this presidency since 1876 when Madrassaw the birth of a school of agriculture, the first of its kind in India, up to 1926, a period of 50 years. Photographic representations of patrons, Presidents at the Annual Conferences of the Agricultural Students' Union, Principals and professors of Agriculture, and the officials of the Union, past and the present with short biographical sketches are given in the pamphlet.

BULLETINS NOS. 195 and 196 of 1929. of the Agricultural Research Institute, Pusa.

The former deals with "Some diseases of the crops in the Andaman Islands" by Mr. Mitra, M.Sc., F.L. S., First Asst. to the Imperial Mycologist, Agricultural Research Institute, Pusa. The crops examined are cocoanut palms, Hevea rubber, jack fruit, mango, mangosteen, lime, tea, coffee, plaintain, sugarcane, tomato, and rice. The diseases and the methods of combating them are described. In Bulletin No. 196, "The cotton white-fly" which is becoming a pest in the cotton tracts in Northern India is described by Rao Bahadur C. S. Misra B. A. First Asst. to the Imperial Entomologist and Karam Singh Lamba M. Sc., Post Graduate student in Entomology, Agricultural Research Institute, Pusa.

There is no Magic way to Health

But there is the common sense way that Health teaches. A little self-discipline based on authentic information as set forth in the pages of the Health will bring you nearer to that universal goal, physical and mental well-being.

Articles from Noted specialists and health authorities appear in Health each month in entertaining non-technical style.

THE HEALTH

The Premier Monthly of its kind in India Edited by the Hon'ble Dr. U. Rama Rau and U. Krishna Rau, M. B. B. S.

Can be had in ENGLISH, TAMIL, TELUGU or CANARESE at Rs 1-8 a year Post paid.

From The Manager, The Health,
Post Box 166, Madras.

