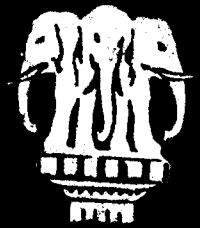


1134 WASTE & SCRAP UTILISER



OFFICE OF THE REGISTRAR OF COMPANIES
 DEVOTED TO SECONDARY RAW MATERIALS
 17 MAR 1959 THE FIRST OF ITS KIND IN ASIA
 Vol. I MADRAS—JANUARY & FEBRUARY, 1959

1134
 1-59.

No. 6 & 7

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Official Organ :

PHONE: 66870

THE WASTE & SCRAP UTILISERS COTTAGE INDUSTRIES ASSOCIATION
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ASSOCIATION CORNER

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JANUARY 1959

No. 6

BUDGET

When we think of Budget we should start right from the home to the national budget. In every point we find deficits. We may recall every house and body having the same trouble. Where is the trouble?

We have not lost potentiality of earning or production. But the only thing we may emphasise when we do not understand where we are wasting. Let us take an individual case. A family whose earning capacity is Rs. 500/- p.m. actually, would be spending 1/10th of their income for the food products and other necessary things for mere existence. Balance 90% will be wasted through luxury which is probably not necessary for living. They are spent in such as transport, entertainment, dresses, and other 101 things which every reader can visualise, if he really cares to think seriously and can come to a conclusion. Can we not live without such luxury? Such things are developed either in big bodies or at state levels. We should consider everything runs in parallel and one depends upon the other. Such is the law of the nature, which cannot be altered. Recently every reader understands there is a deficit budget in Madras State, and so is in Central. To get over deficit, either more taxation or postponement of some projects is necessary. Let us just investigate the Corporation which is near to us. It had been shown a 12½ lakhs of deficit which wants further enhancement of taxation. By the best of our survey, the Corporation needs overhaul, by way of the following:—

The taxation has to be done on a basis of sq. ft. areas and value by a separate body, which should not be under the hands of the staff of the Corporation (low-paid officials). It is filled up by inefficient staff and many departments are existing without any necessity. Lot of waste material which are being collected in the street every day are not finding proper utilisation and their financial value. Most of the regulations were designed and practised and made into a law by eminent foreigners with a view to exploit us and produce more ignorance and

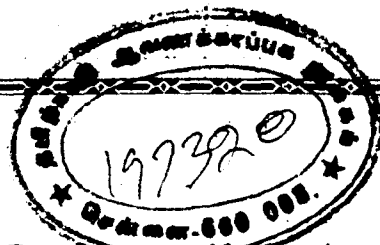
incompetency which we are following without giving a thought about it.

For instance, Mount Road, which is a populated area, is considered an industrial, whereas a place like Nungambakkam which is much less populated for sq. foot calculation is considered to be residential and not allowed to run any industry. We may say, when they enacted the law 40-50 years back, till 1939, the foreigners were keeping a check on the industry should it ever develop in their backyard. When a right man thinks about it, he can certainly improve the income of Corporation without any deficit and reduce even taxation which is the highest, when we compare them with a thickly populated city like London or very advanced city like Berlin.

There is a possibility of recovery of 30 lakhs worth of valuable products out of street collections like every other country. Either we can erect a plant for recovery or we can sell the whole lot to private agencies, who in turn, will recover. Licensing for shops has to be carefully considered and no shop of particular variety should exist within 100 yards between one to another. This will reduce unnecessary transport difficulties. For instance, the entire population of Madras

city either themselves or through agents should visit Kothwal Bazaar which is the only centre for vegetable products. Though there are many bazaars in the city, the feeding has to be done through one channel. The Corporation can certainly acquire and build markets, for every 500 yds. area in residential circles. A right official should investigate and see how he can do.

About the material budget, we are running wild in expenses, by way of buying equipments, which are either unnecessary or worth scrap value. Many valuable equipments were sold recently in Naiveli, Bhopal and Heavy tractor Organisation in Delhi. Let us take lignite which is being visualised as a most important material. Lignite's value is 20% heat value of the coal. 60 crores investment in it means 6 crores of interest per year. The reader can understand how far it is very necessary for our nation when we do not have sufficient to eat. A group of clever men who can change the destiny of our nations can think to do something about changing the policy and not to take any advice from foreigners. Worthless experts in their country are imported as advisers for our nation. But whatever may be, the nature is such, and bad advice would turn to be good, since we are harmless human beings of the world.



APOLOGIA

Due to unavoidable circumstances, we have to publish both issues of January and February together for which the Subscribers and Members, we hope, will bear with the inconvenience caused thereby.

We assure the publication of the journal in time in future.

OUR RECOMMENDATIONS TO INDIAN INDUSTRIES

These are our recommendations which apply to Indian industries as a whole. We have, however, picked out and present, under appropriate headings the main matters to which we think attention could be directed with advantage by what we might call the average firm. A number of the recommendations require action by the Government or by other industrial organisation.

We recommend that monopolies

Monopolies legislation in India should be considerably strengthened and its range extended to ensure competitive conditions. As a first step, we recommend Parliament to consider enforcing by law that trade and industrial associations (and trade unions) where they do not already do so, should publish any rules or agreements which bind their members. This, in our opinion, is essential to attain greater efficiency and reduction of cost.

Finance for capital investment

The facilities available to small firms for obtaining finance for capital investment should be more widely publicised and more widely used.

Depreciation allowance

The annual depreciation allowance made by the tax authorities should be revised to make possible more rapid writing down of machinery and equipment. The new investment allowance will be welcomed because it will tend to encourage capital outlay.

Import Licensing

A more liberal import licensing policy should be adopted to encourage firms to obtain new equipment that is essential to increase productivity but is not available in India or cannot be fabricated.

Specialisation

Small form should be encouraged to specialise in certain types of products or components to obtain the economic advantages of longer runs.

Shift Work

The importance of shift work needs to be realised if expensive machinery is to be economically used. Far more industries than at present could with advantage operate shifts.

The hours of retail shops and the restaurants etc. should be arranged so that they are open at times when evening shift workers come off duty; and where necessary these arrangements should be legally sanctioned.

Drive from senior management

The drive from senior management found in American firms is impressive and a similar drive should be developed here. Very special care should be taken in selecting people for promotion to management. More use might be made of functional specialists to advise management.

Terminology

The Indian Standards Institution should set up a committee to cover the terminology of the whole field of industrial engineering.

Planning

Detailed preparatory planning of production should be undertaken before operational decisions are taken or even before the designs are completed, in order to reduce waste of time and effort during subsequent operations. This is frequently called pre-planning.

The industrial engineer, like the cost accountant and all production executives who are concerned with carrying out the plans, should take part in this preparatory planning.

Costing

A searching enquiry into practicable alternative courses of action and their comparative costs should be before business decisions are taken.

Cost and performance figures should be used more fully as a means of executive and supervisory control, and should be supplied more promptly, so that they may give early indication of where the industrial engineer's attention is required.

Cost accountants and industrial engineers should co-operate in devising the best use for the high-speed computing equipment at present being rapidly developed. A service should be provided to meet the requirements of small firms.

The cost of handling of materials must be analysed separately if the high proportion of total production costs which it represents is to be revealed.

Tool and fixtures

Specialised tools and fixtures should be more widely employed.

Standardised components should be more freely used in tools and fixtures. Specialist firms could then produce standardised tools and fixtures economically and supply them from stock. Whereas standardised components are available to some extent in India, they are not as widely used as they might be.

The requirements of maintenance should be considered more fully in tool design.

Design

The designer should aim to obtain the required performance at the minimum cost of production. To achieve this, industrial engineers should be consulted in designing new products or in modifying designs.

Far more attention should be given to the relative production costs and the relative productivity on the hand of making a limited range of designs (or styles) and on the other of making whatever special article the consumer requests. Simplification of design should be considered as a matter of production cost.

Control of quality

More attention needs to be paid to the methods and economics of inspection and control of quality. Industrial engineering

departments of firms will be well-advised to have a statistician on their staffs to exercise statistical quality control, for great savings can be made by it.

Production control

Production should be closely controlled to conform to a time-table planned in advance. If this were done throughout the country it would make it possible to keep exact delivery dates and also to reduce stocks of work in progress.

Lay-out and Materials Handling

Handling of materials should be considered in relation to the layout and the arrangement of the whole plant. Layout and methods of handling should be directed towards securing the optimum flow of production. Packing ought to be considered as a stage in production.

Three-dimensional models should be used more frequently in explaining the planning of layout.

Preventive Maintenance

Each firm should work out and implement a policy of preventive maintenance and replacement of equipment.

Motion Study and time study

Motion study and time study should be more widely used to improve methods, to balance operations in line production as well as to provide data for incentive schemes.

Training in motion study and time study should be given at all levels to develop an interest in improvement of methods.

Pre-determined motion-time systems should be investigated as an alternative to time study, they may be found useful at the planning stage in determining methods of operation.

In the improvement of methods, human and economic matters should be given as much attention as technical problems.

Job Evaluation

The evaluation of jobs should be undertaken more commonly within companies. We consider it to be the best existing method of assessing the relative worth of different jobs.

Incentives

Research is required in the purpose and application of incentives, including non-financial incentives. More thought should be

given to team incentive schemes and the encouragement of workers by their fellows to maintain high standards of performance. We draw attention to the value high-task day payment where it is necessary to maintain production at a high but constant rate. Time study should be used more widely to establish performance standards. Plan providing for sharing savings made in production costs should be concerned.

Employee Participation

The participation of employees is essential for the success of any campaign to improve methods. Employees should therefore be kept fully informed of their company's progress.

Suggestion Participation

Where suggestion schemes are in existence greater efforts should be made to increase their effectiveness. Rewards that are really adequate should be paid on a percentage basis of savings made over a year. Encouragement is required from senior management, and full publicity should be given in the workshop both to good suggestions and their rewards. Schemes should be introduced or continued only if senior management is willing to back them whole-heartedly.

Redundancy

A nation-wide effort should be made to overcome the fear of redundancy which at present often impedes the introduction of new methods. Management should recognise that discharges resulting from technical improvements can very frequently be avoided by advance planning to ensure the absorption of the surplus labour force. When discharges are unavoidable, agreement should be sought with the trade unions and joint consultative committees on the principles of selecting those for discharge last-in-first-out clauses should be investigated. Compensation might sometimes be given. The scheme of unemployment insurance must be included as in Britain.

Safety

Far more education is required in factories on the subject of safety. In U.S.; education in safety is considered more important than safety devices and regulations. More propaganda on the subject is required.

Management and Supervision

The responsibilities and authority, and therefore the status and salary, of foremen should be higher than they are in the majority of companies in India. Foremen should be treated as a part of management and not merely as a tool of management. In particular they should be kept informed of the production costs of their departments.

Companies, as a normal practice, should adopt the informal committee in order to achieve effective managerial co-ordination.

Organisation inside firms

All industrial engineering techniques should be grouped under one executive, particularly in small firms.

Industrial engineers can function properly only if they work in co-operation with factory managers and foremen. Senior managers should ensure that their production departments are making full use of industrial engineering services.

The industrial engineers should be a member of senior management. Industrial engineering should be made an attractive career to young men who take on junior posts in the industrial engineering department.

Education

Industrial engineering studies in universities and technical colleges, whether as single subjects or as courses should be introduced wherever it is not and expanded wherever it is.

More single specialist courses in industrial engineering subjects should be offered by technical colleges wherever industry is willing to support them.

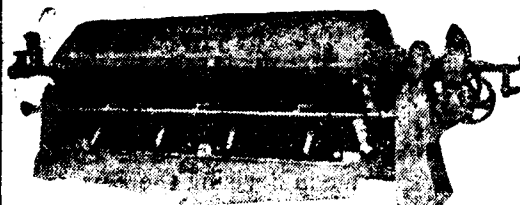
Technical colleges should develop further short courses to serve the needs of small businesses.

Teachers should have more outside contact with research activities and industry. Courses in industrial engineering should be provided for teachers.

Trade Union

Trade unions and especially craft unions should give extensive training in industrial engineering techniques to their officials and local leaders in order that they can better understand and assist in industrial develop-

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ments while safeguarding their members' interests.

Industrial and professional

Industrial management associations should play a more lively role in industrial life; for example, by encouraging more detailed discussion of case studies and by making wider use of the study-group (seminar) technique.

Responsibility should be accepted by management for periodic assessment of the potentialities and needs of individuals employees in order to organise suitable training for them throughout their careers. Attention should be given to the U. S. procedure for training and development of management called executive development.

Professional institutions in India should offer more facilities and activities to attract non-professional members and should try to expand their membership outside professional ranks. In particular, the institute of Cost and Works Accountants should provide for a wide range of members so that the facilities provided by the Institute are not limited to professional accountants.

Contact with Technical and industrial press.

Research or trade associations should make an independent advisory service available

at low cost to small and medium-sized firms in their own industries. But such a service would sometimes need to be followed up by consultants, manufacturers of equipment or staff industrial engineers.

Every effort should be made to ensure the rapid application of the discoveries and improvements resulting from research. To this end advisory services and wider dissemination of technical information would assist; but such services can only introduce new ideas to a concern. Industrial consultants are usually needed to ensure their application.

Indian firms should more often engage consultancy firms to work from the inception of design to implementation on the shop floor.

Reduction of Waste—Waste of manhours and materials.

All materials that are available which are considered not useful.

May be informed to us we will find a user who can use more profitably.

Any opinion and sound argument may be sent to us for publication which will be more useful to our readers.

Association Corner :

The Chief Minister of Madras State, Mr. Kamaraja Nadar, with Mr. Karutherman, Congress Party Whip, paid a visit to our Association premises on 6-3-59 and enquired about the Association's activities and took great interest in Scraps Utilization.

NEW MEMBERS ENROLLED

1. Raj Kishen,
17, Chitteranjan Avenue
Calcutta.
2. Honest, Engineering & Contractors
Pondichery.

செய்தி சுருள்

நூல் சிக்கலின் திண்மை (Cotton Waste)

உபயோகமில்லாத பருத்தி நூல் சிக்கல்களையும் துணிகளையும் இப்பொழுது இயந்திரங்களிலுள்ள எண்ணெய் முதலியவற்றை துடைப்பதற்காக உபயோகப்படுத்துகிறார்கள். இதைப்பற்றி ராபர்ட் W. ஹன்ட் கம்பெனியார் திரெட் மிஷினர்ஸ் இன்ஃகார்பரேட். (Thread Machine's Incorporated) என்பவர் துணி, நூல் இவைகளில் தராத உறுஞ்சும் தன்மைபற்றி அவர்கள் பரிசோதனை செய்து பார்த்ததில், பருத்தி நூல் சிக்கலானது, பருத்தி நூல் துணியைவிட அதிகமாக எண்ணெயை இழுக்கும் சக்தியுள்ளவை என்ற உண்மையை கண்டறிந்தார்கள். மேற்படி பரிசோதனையில் பருத்தி நூல் சிக்கலானது, அதனுடைய கண்டறியப் பெற்ற எடையைப் போன்று 400 சதவிகிதம் அதிகமாக எண்ணெயை உறுஞ்சி இழுக்க முடிகிறது. ஆனால் பொதுவாக வழக்கத்திலிருந்து வரும், துடைக்க உதவும் துணிகள் அதனுடைய கண்டறியப்பெற்ற எடையைப்போன்று 140 சதவிகிதத்திற்கு குறைவாக உறுஞ்சுகிறது. மேற்படி பரிசோதனையை பல ரக துணி, நூல் இவைகளைக் கொண்டு செய்து பார்த்ததில் மேற்படி முடிவையே கண்டறிந்தார்கள்.

ஏன் பருத்தி நூலானது, பருத்தி துணியைவிட அதிகமாக எண்ணெயை உறிஞ்சமுடிகிறது என்பதற்குப் பல காரணங்கள் இருந்தாலும் அவற்றில் முக்கியமானவை என்னவென்றால் ஒரு கையளவு பருத்தி நூல் சிக்கலில் உள்ள நூற்றுக்கணக்கான நூல்களின் முழு சுற்றுப் புறமும் (Circumferential area) அதன் நீளமும், அகலமும் எண்ணெயின் மேல் பட்டு உறுஞ்சுவதற்கு வழியிருக்கிறது. ஆனால் சாதாரண துடைக்கும் துணிகளிலுள்ள நூல்களின் மேலும் கீழும் மட்டுமே எண்ணெய் படுவதற்கு முடியும். அந்த நூலின் எல்லா சுற்றுப் புறங்களில் எண்ணெய் படுவதற்கு வழியில்லை. இப்பொழுது, ஆகவே வெளி நாடுகளில் மேற்படி பரிசோதனையின் விளைவாக துடைப்பதற்கு பருத்தி நூல் சிக்கல்களையே துடைக்கும் துணியைவிட அதிகமாக தொழிற்சாலைகளில் உபயோகப்படுத்துகிறார்கள். நமது நாட்டிலும் இந்த முறையை பயன்படுத்தப்பட்டாலும், இன்னும் சில இடங்களில் இதன் உண்மையை அறிந்துக்கொள்ளாமல் இருக்கிறார்கள். மேற்கண்டவாறு உபயோகப்படுத்தும் பருசுநூல் கழிவுகளை எறிந்து விடாமலும் எண்ணை ஊறிய வற்றை எரிய விடாமலும், அவற்றை பாதுக்காத்து அதிகமாக சேர்ந்தவுடன் எண்ணெயை எடுத்து விட்டு மீதியை காகித உற்பத்திக்கு பயன்படுத்தலாம்.

கழிவு ரப்பரை உபயோகப்படுத்தும் முறை

கழிவு ரப்பரை துண்டுகளாக்கி தூள் செய்து உருளைகளின் நடுவில் கொடுத்து புதிய ரப்பர் களேரடு கலந்து சரியான ஒரு கலப்புப் பொருளாக உபயோகப்படுத்தலாம்.

கழிவு ரப்பரை உலர்முறை வாலை மூலம் வடிக்கட்டினால் (Dry distillation) அதிலிருந்து காகசைன் (caucasine) என்ற ஒரு உயர்தர கரைப்பானை (Solvent) எடுக்கலாம். அது பெயின்ட் (pain) தொழிலுக்கு மிகவும் உபயோகப்படுகிறது.

கழிவுத் தோல் உபயோகம்

சாதாரணமாக நடைப் பாதையிலே தோல் தொழினர்களை காண்கிறோம். அவர்கள் உபயோகப்படுத்தப்பட்ட தோல்கள் போக எஞ்சிய துண்டுகளையும், துணுக்குகளையும் தூக்கி எறிந்துவிட்டு மண்ணோடு மண்ணாக மக்கவிட்டு போகிறார்கள். சுமார் 10 ஆண்டுகளுக்கு முன்னர் பெரிய தோல் தொழிற்சாலைகளில் அவற்றின் உபயோகத்தை அறியாது மண்ணிலே, ஆழக்குழித்தோண்டி அடியிலே புதைத்து விடுவர். அது சிறிது ஆண்டுகளுக்கு பின்னர் அவற்றை வயல்களுக்கு உரமாக உபயோகப்படுத்தி வந்தார்கள். ஆனால் இன்று அவற்றை பல அரியபெரிய வழிகளில் உபயோகப்படுத்துகிறார்கள். அவற்றை துள்களாக செய்து ரப்பர் தொழிற்சாலைகளில் அடைப்பானாகவும், (Fiter) அவற்றை ரப்பரோடு கலந்து செருப்பு முதலியவற்றின் அடிப் பாகங்களாக செய்யவும், அவற்றை ஒரு சரியான பிணக்கும் திரவத்துடன் (Bonding Agent) கலந்து சரியான அழுக்கத்திலே அழுக்கி, தோல் போட்டுகள் செய்ய உபயோகப்படுகிறது. அன்று மண்ணோடு மண்ணாக அழுக்கிய தோல் இன்று மாந்தர்களின் இல்லங்களிலே மாட்சியாக யிருக்கிறது.

துருப்பிடித்த நட், (Nut) போல்ட் (Bolt)

துரும்பு பிடித்த நட், போல்ட், ஸ்க்ரூ முதலியவற்றை சுலபமாக எடுக்க வேண்டுமா! அதற்கு மிகவும் சுலபமான ஒரு வழியிருக்கிறது. துரும்பு பிடித்தவை சரியான முறைகளில் கழற்றப்படா விட்டால் அவை உடைந்து தொழிலாளிகளுக்கு வீண் சிரமமும், பணச் செலவையும் அளிக்கிறது. அதற்காக கீழ்க்கண்ட முறையிலே நுழைந்து உள்ளென்று, துருவை கலக்க வைக்கும் எண்ணெயை தயார் செய்து கையிலே வைத்துக் கொள்ளுங்கள். இரண்டு அவுன்ஸ் மண்ணெண்ணையும் 7 அவுன்ஸ் மினர்ல் எண்ணையும், அல்லது 1 அவுன்ஸ் செகன்டரி பூடைல் ஆல்காஹையும் (Secondary Butyl Alcohol) கலந்து ஒரு கண்ணாடி சீசாவில் ஊற்றி அடைத்துக் கொள்ளவும்.

சர்க்கரையின் கழிவுப்பொருள்

நமது நாட்டில் வருஷம் தோறும் சுமார் 40 லட்சம் டன் சர்க்கரை உற்பத்தியில் கழிவுப் பொருள் எடுக்கப்படுகிறது. அதை பணம் படைத்த வியாபாரிகள் சர்க்காரிடத்தில் அனுமதிபெற்று அயல் நாட்டுக்கு ஏற்றுமதி செய்து வருகிறார்கள்.

அதே கழிவுப் பொருளை மேல்நாட்டு விஞ்ஞானிகள் பல உபபொருள்களாக மாற்றி, திரும்ப நமது நாட்டுக்கு விற்பனை செய்கிறார்கள்.

உதாரணமாக உற்பத்தியாகும் கழிவுப் பொருள் 40 லக்ஷம் டன் கள். ஒரு டன் அதாவது 2240 பவுண்டு அல்லது 220 காலன் ரூ. 10 க்கு வாங்கி விற்கிறார்கள். இதனை திரும்ப பலவிதமான உபபொருளாக நமது அவசியத்தை முன்னிட்டு வெளிநாடுகளிலிருந்து டன் ஒன்றுக்கு அல்லது 220 காலனுக்கு ரூ. 2000/- அன்னிய செலாவணி கொடுத்து வாங்குகிறோம். இதன்படி நாம் நம் நாட்

டில் உற்பத்தியாகும் கழிவுப் பொருளை அறிவாளிகள் இருந்தும் சரியானபடி பயன் பெற செய்யமுடியாத காரணத்தால் அண்டை நாட்டுக்குகொடுக்கும் செலாவணியை தேவையான முறையில் அரசாங்கம் கவனம் செலுத்தி சர்க்கரையிலிருந்து எடுக்கப்படும் கழிவுப்பொருள் நமது நாட்டிலேயே மாற்றுப் பொருளாக செய்யப்பட வேண்டிய முறைக்கு சகல ஏற்பாடுகளும் செய்து அன்னிய நாட்டுக்கு ஏற்றுமதி செய்யப்படுவதை தடுத்து நம் நாட்டில் மூலதனம், தொழில் வளம், உற்பத்திப் பெருக்கம், இவைகளுக்கு ஆதரவு கொடுக்கலாம் அல்லவா!

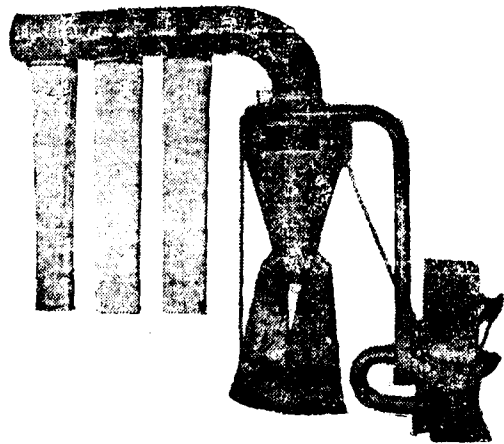
வேண்டுகோள்

உலகிலே 'உதவாதது' என்று எதுவுமே கிடையாது. 'உதவாதது' என்று உங்களால் உதறி எறியப்படும் பொருள், உலகிலே மற்றொரு வகையில் பயனளிக்கக்கூடியதாக இருக்கலாம். மற்றொருவர் அதைத் தேடி அலையலாம். எந்த ஒரு பொருளும் எந்த ஒரு உருவிலும் பயன் தரக்கூடியது தான். அவற்றை வேண்டுபவர் யார் என்று அறிய உங்களால் முடியாமலிருக்கலாம். அந்த உதவியை உங்களுக்குச் செய்ய நாங்கள் இருக்கிறோம்.

ஆகவே, பழுது அடைந்தது, உற்பத்தி செய்ய சக்தியில்லாதது, தள்ளப்பட்டது என்று எந்த ஒரு ஆயுதத்தையும், உபகரணத்தையும், இயந்திரத்தையும், ரசாயனப் பொருளையும், துண்டாக்கப்பட்ட பொருள்களையும்; உருமாற்றப் பட்ட பொருள்களையும், உங்களால் பயன்பெற செய்யமுடியாத எந்த

உலோக-ரசாயன பொருள்களையும், தயவு செய்து எறிந்தோ அல்லது நெருப்பில் எரித்தோ நாசமாக்காதீர்கள். எங்கள் சார்பாக இந்த வேண்டுகோளை, உங்கள் நண்பர்கள், அண்டை அயலார்கள் உறவினர்கள் மற்ற எல்லோருக்கும் விடுத்து, அவர்களும் மேல்கண்ட முறையில் நாசமாக்காமல் கவனித்துக்கொள்ளுங்கள்.

மேல்கண்ட பழுதடைந்த பொருள்களை நாசமாக்குவதற்கு முன்பு எங்களுக்கு முழுவீரங்களை யும் தெரிவித்து உங்களால் நாசமாக்கவிருக்கும் பொருளுக்காக காத்துக் கொண்டிருக்கும் நபர்கள் பயனடையும்படி செய்யுங்கள். இது விஷயத்தில் நாங்கள் தேவையான ஏற்பாடுகள் செய்து உங்கள் பொருள்கள் தேவையான இடத்திற்குப் போய்ச் சேர ஏற்பாடு செய்வோம்.



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CAR RADIATORS SCRAP

The handling of scrapped radiators from dismantled cars of different types in order to recover the metal values, has become more complicated with advancing years. In earlier times, the radiators of most vehicles were made up of nests of brass tubes suitably soldered together. To-day, a wide range of systems is used, and nickel and other alloys are sometimes used to replace the brass. Hence, in so far as working on the chain-belt system is concerned, operations have become more complicated. The solders used for connecting purposes, have likewise been improved upon, as distinct from the earlier simple tin-lead alloys. Specialized solders are taken advantage of, including some which contain small silver contents. In smaller scrap refining premises, the initial operations comprise manually setting-up individual radiators on a metal framework, and manually applying a blow-lamp to melt out the solder.

To-day, in view of the ever-increasing supply of old cars, more favourable and expeditious methods of handling are employed. The radiators are first dismantled from the cars at suitable site, located some short distance from the refinery, but sufficiently near to permit the use of a light overhead conveyor. They are up-lifted and dumped in close proximity to a furnace specially equipped for the purpose. Since low temperatures suffice for the initial solder removal, instead of charging them through conventional doors, the radiators are simply lowered through the roof with the assistance of a travelling crane. When the complement is charged, the roof is replaced, and the heat increased.

The bottom of the furnace is lined with glowing coke or coal, and a blast of air suffices to raise the temperature to some 400°C by means of a blower located outside the hearth. A short period of time is allowed to elapse in order that all points of the furnace are at a temperature not less than 400°C. so that all solder will readily flow off. These drippings of molten metal then run through the glowing bed to a V-shaped line in the bottom, and thence through a chute to small pot outside heated by independent fire. It is claimed to be possible to reclaim upwards of 95 per cent of the solder available by this system. Incidentally, this heating suffices to render the brass easily breakable, although not always and which depends on the composi-

tion. When its natural flexibility has been removed by the heating, the remains of the radiators, with the tubes now loose, can be crushed in a baling press. As a rule, the metal is reduced to relatively consistent to baling. When this is not possible, the radiators are allowed to cool, and baled directly in the form of more crudely shaped pieces.

In the refining hearth, the more crude bales tend to deflect the flames, and cause an undue volatilisation loss of zinc, whereas the finer pieces form a more solid block, but there has been criticism of the methods. An alternative system is to pack the radiator remains with fine turnings, sometimes with the addition of a little binder, in order to keep down melting losses. In the large refineries, the metal is melted, and run into anode moulds for electro-refining. This practice, however, is almost superfluous, if the brass is of consistently good quality, i.e. 60 per cent copper, and 40 per cent zinc, with little or no evidence of lead or tin contents. There is sometimes the danger that some iron parts may be retained, and no direct melting give a poor quality product, whereas electro-refined metal is always pure.

The direct melting method is at a disadvantage where some of the new alloys are used in place of brass.

One small refiner got into serious difficulties in disposing of brass which contained nearly 1 per cent of nickel, which was attributed to the inclusion in the charges of radiators of unknown composition. The solder collected in the pot was at one time kept under a layer of potassium cyanide in order to ensure the maximum tin recovery, but today it is known that a good layer of old tallow, or fat suffices. Some of the solder thus recovered has been known to contain upwards of 66 per cent tin. It is simply skimmed and cast into marble moulds, which accord it a good surface appearance. The evidence of silver in some recovered solders has attracted more attention recently. Since it acquires almost the full market price. One firm which made a speciality of dealing with alloys of this kind, subjected them to a select electro-refining process. The metal is first cast into anode moulds, which are placed in a bath of hydrofluosilicic acid, to the extent of 20 per cent concentration. This gives a

solution of some 25 grams tin per litre, the temperature is maintained at between 15° and 20°C and current is applied at between 16 and 18 amps. per square foot. A little sulphuric acid is added to ensure precipitation of the lead content, while minute additions of gelatin assist the deposition. The tin recovered is upwards of 99.9 per cent pure, while all silver present accumulates in the lead sludge. (This in turn is subjected to the familiar Parkes process to recover the silver, the

following additions of zinc during subsequent melting). The very complete recovery of silver is claimed to be one of the features of this process and hence reclaimed solders from radiators are best disposed of to firms of the kind. Insofar as the small refiner is concerned, however, the plant layout required comprises a light elevated conveyor system, a capacious furnace with attached melting pot, a suitable baling press, and a refining furnace for melting the brass.

HOME TIPS

1. Common Table Salt

Common Table Salt will do when you are run out cleanser powder for removing stubborn stains from your bathroom fixtures. It works best when sprinkled on a cloth impregnated with paraffin. Rinse and dry around faucets and drains to prevent any corrosive action of the salt residue.

2. Keeping track of pins

Keeping track of pins in a sewing-machine drawer when you do not have a pincushion is no problem if you make use of an empty thread spool and a rubber band. Simply twist the rubber band over the spool a couple of times and insert the pins around the spool and under the band.

3. Handle on a cork.

Handle on a cork makes it extra convenient when necessary to open a bottle repeatedly as it keeps cork from wedging tightly. Simply wrap a length of adhesive tape around the cork as shown in the detail so as to provide a tap at the top.

4. Shoe Polish

It very often happens that our shoe polish becomes dry and cracks. Most of the people does not know how to render it usable. It can be made (wet) by using drops of turpentine.

5. Grass Killer

A simple grass killer for grasses found between bricks and stones of a walk can be made by making strong solution of calcium chloride in water. The above should be sprayed.

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NEW EQUIPMENT

The Planters Engineering Co. Ltd., and their Associates, Messrs. Entwistle and Gass Ltd., have for many years specialised in the design and manufacture of baling and compression units.

AUTOBRAAV: During the last few years, a considerable amount of research and development has been applied to the production of a range of presses which will simplify and improve the handling and reclamation of all types of industrial scrap metals. The most recent addition to this range is the AUTOBRAVV PRESS, which is capable of forming copper and brass millings into briquettes or pellets of convenient size for handling, storage and subsequent re-melting.

OPERATION: The cycle of operations is commenced by the delivery of the millings into a storage hopper, which forms part of the standard equipment, and then fed by vibratory feeders into the first stage low compression cylinder. This cylinder incorporates a variable setting electro-measuring device which automatically predetermines the weight and size of the finished briquette. In this first stage cylinder the millings are subjected to a preliminary pressing, and these automatically transferred to the high compression chamber for final processing. The finished briquettes or pellets are then automatically ejected from the machine in a complete stage of readiness for storage or re-melting.

CONTROL: The press is completely automatic in operation, and is remotely controlled by a single operator at conveniently situated consul type control panel.

SAFETY DEVICES: The machine is adequately guarded, and includes the latest protection and safety devices, amongst which is a cut-out to prevent the machine operating should be supply of millings cease.

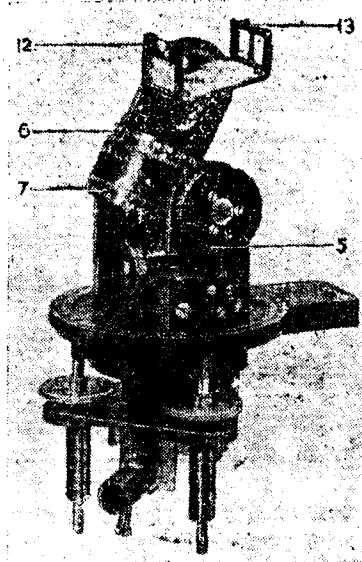
OUTPUT: The output approximates to 6½/7½ cwt. per hour, comprising some 210 briquettes of between 3 and 4 lbs. each.

RESULTS: It is considered that the AUTOBRAAV briquetting press will make a valuable contribution to the handling and reclamation of industrial non-ferrous millings, and in this connection, the briquetting process not only reduces the melting time, but also reduces considerably the loss of valuable metals due to volatilisation.

Successfully used on the continent for many years the Schlegel System of refining used oil is now available in this country.

Schlegel Regenerators, which combine distillation, absorption and filtration, work on a physical-chemical principle and can also be used for petrol, turpentine, kerosene, nitro solvents, trichlorethylene, etc.

They can be operated by an unskilled operator after very short training. The operation is simple. First a small F.E., is put into the open regenerator and thoroughly mixed with the waste oil. The lid is closed and by means of a hand-pump or compressor the inside pressure is raised to approximately 36 p.s.i. Further processing will be completely automatic. The electric heating is switched on by the air pressure provided. The heat so generated will, together with the refining agent, start off what is called a soft refining process by which all oxidising products dissolved in the waste oil are separated. At the same time all engine-created grit and other foreign particles are completely removed, while slight pollution will evaporise. The regenerated oil, which has the characteristics of brand new oil, flows out of the regenerator in an even stream. When the entire charge has been completely processed, the heating is switched off automatically and the regenerator does not require further attention. The residue remaining after the regenerating process is a dry compressed cake which is easily removed by a scraper in a matter of moments. (From W. & R. T. R.)



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Editor.

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Editor.

DICTIONARY OF TRADE TERMS

PRINCIPAL QUALITIES OF COTTON WASTE PRODUCED IN THE SPINNING AND WEAVING PROCESSES

Cotton waste may be classified under two headings, "Soft" waste and "hard" waste. "Soft" waste signifies any waste produced in the spinning processes before the cotton is spun into a thread. "Hard" waste signifies the various qualities of thread waste produced in the spinning and weaving processes.

Waste is again classified by the cotton from which it is produced, e.g. American Strips, Egyptian Strips, Indian Strips, Peruvian Strips, Brazilian Strips, etc.

The following are the principal qualities of waste produced in a spinning mill:—

COTTON PICKINGS

... Dirty and stained cotton picked from the cotton tares.

DROPPINGS

... Waste produced in the opening and scutching processes.

TAKER-IN-FLY

... Waste produced in the carding process.

ROLLER FLY

... Waste produced in the carding process.

FLAT STRIPS

... Waste produced in the carding process.

VACUUM STRIPS

... Waste produced in the carding process.

CYLINDER STRIPS

... Waste produced in the carding process.

CAN OR SILVER WASTE

... Waste produced in the carding process.

CARDROOM SWEEPS

... Floor sweepings from the card room.

ROVING OR BOBBIN WASTE

... Waste produced on the roving frames.

RING LAPS

... Waste produced on the ring spinning frames.

RING SWEEPS

... Floor sweepings from the ring room.

COMBER WASTE

... The sort fibres taken out of the cotton by the combing machine.

FLUKER WASTE

... Opened laps produced in the mule spinning room.

CARD CLEARERS

... Waste produced on slubbing intermediate and roving frames.

RING CLEARERS

... Waste produced on slubbing intermediate and roving frames.

CARD STOCKINGS

... Waste produced on slubbing intermediate and roving frames.

MULE OR KNUR LAPS

... Waste produced on the mule frame.

SPINDLE POINT WASTE

... Clean and oily thread waste produced in the mule room.

RING COPWASTE

... Thread waste produced in the ring spinning room.

MULE OR SPINNERS' SWEEPS

... Floor sweepings from the mule room.

FAN FLY

... Very short dusty waste collected in the fan chamber in a spinning mill.

WINDER'S WASTE

... Hard waste produced in the rewinding of cops spun on the ring or mule frames.

CARRIAGE FLY

... Sweepings from the mule carriage.

The following is a list of the principal qualities of waste produced in a weaving mill :—

COPBOTTOM WASTE	... Thread waste left in the shuttle when a pin cop is finished.
THRUMB WASTE	... Sized thread waste produced in slashing warps and from a finished weaver's warp.
TAPERS WASTE	... Unsized thread waste produced in slashing warps.
LOOM SWEEPINGS	... Floor sweepings in the weaving shed.
COLOURED WASTE	... Mixed colours of thread waste produced in the winding and weaving process.
COLOURED THRUMBS	... Mixed colours of thread waste produced in slashing and warp dressing.
DOUBLERS' WASTE	... Hard twist thread waste produced in doubling yarn.
OILY WASTE	... Thread waste saturated with oil having been used in cleaning machinery.

Miscellaneous waste handled by cotton waste dealers :—

OLD TARES	... Cotton bale wrappers.
OLD PICKERS	... Worn out buffalo hide pickers used on a weaving loom.
RAGS AND TAB ENDS	... Clean or dirty fents and rags produced in the weaving process.
COTTON ROPES	... Broken ropes used for driving spinning and weaving machinery.
SPINDLES BANDS	... Broken cotton banding (tubular) used for driving ring spindles.
RAISINGS	... Short cotton fibre collected in certain cloth finishing processes.
HEALDS	... Old cotton varnished healds discarded from the loom.

The above constitute a general glossary of the most important items of cotton waste produced, although there are other qualities produced in speciality spinning and weaving and also in cotton waste spinning and weaving. Mixtures of cotton and wool waste are also produced in varied forms which are handled both by wool and cotton waste dealers. Various qualities of Rayon waste and "Spun" Rayon waste are produced in both spinning and weaving mills and handled by cotton waste dealers. There are also many qualities of imported waste which are sold under the names used in the country of origin, e.g. Peeler comber, the name used in the U. S. A. for comber waste from American cotton.

The following are terms used for some grades of waste which have been collected by dealers from the producing mills and either been sorted, machined, willowed or transformed in some way in order to meet the requirements of some section of the waste manufacturing industry :—

(To be continued in the next issue)

WANTED

VACUUM PUMPS 14" to 30" Piston Types. B. No. 1050. C/o. Waste & Scrap Utiliser, MADRAS-4.	WIRE ROPES in description and quantity B. No. 1059. C/o. Waste & Scrap Utiliser MADRAS-4.
CARBON-DIOXIDE Compressor 5 to 50 tons. B. No. 1052. C/o. Waste & Scrap Utiliser MADRAS-4.	Trailors, Road Scrapers Tractors B. No. 1055. C/o. Waste & Scrap Utiliser MADRAS-4.
Well Boring Machine 6" x 8" Fitter Large Quantity B. No. 1056. C/o. Waste & Scrap Utiliser MADRAS-4.	Large Quantity of Glass Manufacturing Moulds. B. No. 1049. C/o. Waste & Scrap Utiliser MADRAS-4.
RADIO VALVES, ELECTRICAL BULBS, X-RAY VALVES, TRANSMITTER VALVES B. No. 1058. C/o. Waste & Scrap Utiliser MADRAS-4.	Electric Motors A.C. or D.C. Alternators, Generators, Diesel Engine Highest price paid. Prompt payment. B. No. 1048. C/o. Waste & Scrap Utiliser, MADRAS-4.
Military Surplus Paints Offer with price, quality and sample We gladly pay for sample. B. No. 1054. C/o. Waste & Scrap Utiliser, MADRAS-4.	Machinery, Lathe Presses, Shaping Machine Grinding Presses, Shapers, Milling New Secondhand or Broken-Inspection at your place at our cost without obligation. B. No. 1046. C/o. Waste & Scrap Utiliser, MADRAS-4.
Boilers, Repairable as Scrap Small or Big B. No. 1060. C/o. Waste & Scrap Utiliser MADRAS-4.	Waste Silk, any quantity, colour White Apply with sample B. No. 1075. C/o. Waste & Scrap Utiliser, MADRAS-4.
Roots Blower. B. No. 1051. C/o. Waste & Scrap Utiliser MADRAS-4.	100 Windows & Doors, Secondhand or New B. No. 1078. C/o. Waste & Scrap Utiliser, MADRAS-4.
WOOL CLIPPINGS, WOOLLEN SCRAP, of any form or any quantity B. No. 1076. C/o. Waste & Scrap Utiliser, MADRAS-4.	New Ball & Roller Bearings. All types and sizes. B. No. 1024. C/o. Waste & Scrap Utiliser, MADRAS-4.
AEROPLANE DOPE and PAINTS B. No. 1080. C/o. Waste & Scrap Utiliser, MADRAS-4.	AIRCRAFT BULBS B. No. 1077. C/o. Waste & Scrap Utiliser, MADRAS-4.
Second-hand Diamond Tipped tools B. No. 1082. C/o. Waste & Scrap Utiliser, MADRAS-4.	TELESCOPE, LABORATORY SCALE B. No. 1057. C/o. Waste & Scrap Utiliser, MADRAS-4.

WANTED

Non-ferrous Scrap and Residues.
High Prices Paid for uniform parcel
components, Armatures, etc. Striping.
Immediate Cash Settlement.

B. No. 1001.

C/o. Waste & Scrap Utiliser
C. I. Association
MADRAS-4.

All Nickel Content Materials,
Pure nickel, Anodes, Cutting,
etc., Stainless Steel, Scrap, Offcuts,
Bars, Special Prices for Tungsten and
Cobalt-Bearing Materials.

B. No. 1002.

C/o. W. & S. U. C. I. Association.
MADRAS-4.

CASH BUYERS

Of

Rags, Metals, Iron, Paper,
Felt Cuttings, Flock, Hair,
Bagging, Plastic Scrap, etc.

B. No. 1004.

C/o. W. & S. U. C. I. Association,
MADRAS-4.

All Types of Ball and Roller
Bearings and Steel Balls,

B. No. 1006.

C/o. Waste & Scrap Utiliser,
MADRAS-4.

PURCHASED REGULARLY

Upholstery and Motor Hide Off-cut
large or small quantities.

B. No. 1009

Waste & Scrap Utiliser,
MADRAS-4.

Because:-

We are buyers for our own manufacture.
We pay top prices promptly, and collect
from your works. Let us quote you.

B. No. 1007.

C/o. Waste & Scrap Utiliser,
MADRAS-4.

ZINC BASE ALLOY SCRAP,
IRON, COPPER &
ALUMINIUM SCRAP.

B. No. 1021.

C/o. Waste & Scrap Utiliser,
MADRAS-4.

Recovered Mercury

B. No. 1015.

C/o. Waste & Scrap Utiliser,
MADRAS-4.

**HYDRAULIC PRESSES & WELDING
MACHINES**

2-10 Gauge

All Sizes

B. No. 1020.

C/o. Waste & Scrap Utiliser,
MADRAS-4.

Coloured and White
ALUMINIUM FOIL WASTE.
With or without paper.
Also Aluminium Scrap of all grades.

B. No. 1003.

W. & S. U. C. I. Association
MADRAS-4.

PAPERS

Wet Strength, Wood free, white, with
or without print (map paper). Monthly
quantity 20 tons.

Only serious prices acceptable.
One year's contract.

Waste & Scrap Utiliser,
B. No. 1011. MADRAS-4.

Goods Collected
BRASS SCRAP 20
IN 5, 10 or tons lots.
B. No. 1012.

C/o. Waste & Scrap Utiliser,
MADRAS-4.

WASTE FATS
of all Description

B. No. 1008.

C/o. Waste & Scrap Utiliser,
MADRAS-4.

Feather Beds, Elderdown, soiled
Mutton Cloth, Rayon Rope.
For spot cash

B. No. 1100.

C/o. Waste & Scrap Utiliser,
MADRAS-4.

About 40 tons
SCRAP MOTOR TYRES.
20 tons gaints, and passenger (20 tons)
B. No. 1015.

C/o. Waste & Scrap Utiliser,
MADRAS-4.

S/Hand Steel Shelving.
Useful condition.

B. No. 1108.

WASTE & SCRAP UTILISER, MADRAS-4.

WANTED

PURE NICKEL ANODES,
PURE NICKEL SCRAP,
"NIMONIC", "INCONEL",
"MONEL", Etc.,

B. No. 1022.

Waste & Scrap Utiliser,
MADRAS-4.

Job Toned of c/sk Brass woodscrews,
c/sk Galvd. woodscrews, Rensable
Bronze propellers. All Marine
equipment.

B. No. 1028.

C/o. Waste & Scrap Utiliser
MADRAS-4.

Used Wet Strength
KRAFT PAPER TOWELLING.

B. No. 1018.

C/o. Waste & Scrap Utiliser,
MADRAS-4.

MIXED RAGS MIXED STOCKINGS
for spot cash.

B. No. 1029

C/o. Waste & Scrap Utiliser
MADRAS-4.

MULTI-PLAY KRAFT SCRAP and
CEMENT BAGS.

Free of Contraries.

B. No. 1017.

C/o. Waste & Scrap Utiliser,
MADRAS-4.

Light Toned Shavings White and coloured
Shavings, White Heavy Letters, Coloured
Heavy Letters. Tabulating Cards

Prices and Tonnage to:-

B. No. 1027.

C/o. Waste & Scrap Utiliser,
MADRAS-4.

TANKS from 100 to 1 lakh of Gallons
Circular,

Rectangular, pressed or any size.

B. No. 1047.

C/o. Waste & Scrap Utiliser
MADRAS-4.

MILITARY DRAWERS (Khaki)

B. No. 1045.

C/o. Waste & Scrap Utiliser,
MADRAS-4.

FILTERCLOTH

B. No. 1016.

C/o. Waste & Scrap Utiliser,
MADRAS-4.

EX. A. M. Stocks.
Radio and Electrical Equipment,
Instruments, particularly Rotax,
Smiths and Plessey equipment.

B. No. 1019.

C/o. Waste & Scrap Utiliser,
MADRAS-4.

All sorts of
FEATHER, FEATHER BEDS,
EIDERDOWN.

Keenest prices.

B. No. 1025

Waste & Scrap Utiliser
MADRAS-4.

CRAFFORD JUNIOR PRESS and
1/2 BOXES

B. No. 1014.

Waste & Scrap Utiliser,
MADRAS-4.

MIXED STOCKING, SCREEN, SERGES,
GENUINE MIXED UNRIPPED.

B. No. 1023.

Waste & Scrap Utiliser,
MADRAS-4.

Industrial Diamonds.

Any quantity

B. No. 1061.

C/o. Waste & Scrap Utiliser,
MADRAS-4.

Used CINEMA FILMS

Highest Price Paid

Weather Exposed or Cleaned.

B. No. 1044.

C/o. Waste & Scrap Utiliser
MADRAS-4.

Stainless Steel
High Grade 1000 tanks

URGENTLY.

B. No. 1053.

C/o. Waste & Scrap Utiliser
MADRAS-4.

WAY BRIDGES in condition or broken

B. No. 1074.

C/o. Waste & Scrap Utiliser,
MADRAS-4.

ACID JARS. Any number.

B. No. 1081.

C/o. Waste & Scrap Utiliser,
MADRAS-4.

FOR SALE

Aircraft Landing Mats, 10 ft. length
15" breadth. Each 50 lbs. weight.
Condition good. 200 Numbers available
B. No. 1065.

C/o. Waste & Scrap Utiliser,
MADRAS-4.

RAIN COATS, BR. MAKE NEW M.S.

New Rs. 20/- Each

B. No. 1037.

C/o. Waste & Scrap Utiliser,
MADRAS-4.

TENTS Rs. 1/- Per Pound

From 30 to 250 pounds.

B. No. 1039.

C/o. Waste & Scrap Utiliser,
MADRAS-4.

SHOWELS. Rs. 3/- Each

B. No. 1041.

C/o. Waste & Scrap Utiliser,
MADRAS-4.

OLIVE GREEN PAINTS

Rs. 8/- per gallon.

In 5 gallons tins.

B. No. 1040.

C/o. Waste & Scrap Utiliser,
MADRAS-4.

EGYPTIAN COTTON SKIRTS

Rs. 1-8-0 Each

B. No. 1042.

C/o. Waste & Scrap Utiliser,
MADRAS-4.

HYDRAULIC PUMPS 9 Pistons.

1500 per Square Inch 4 Gallons per Minute

B. No. 1079.

C/o. Waste & Scrap Utiliser,
MADRAS-4.

Cass Iron pipes 6" x 12"

B. No. 2006.

C/o. Waste & Scrap Utiliser,
MADRAS-4.

ASBESTOS CLOTHING 36" width
1/8" thick. 500 yards. available

B. No. 1063.

C/o. Waste & Scrap Utiliser,
MADRAS-4.

WATER—BUCKETS

COLLAPSABLE

NEW—MILITARY SURPLUS

CONCRETE Mixture

Various Types (needs repair)

B. No. 1066.

C/o. Waste & Scrap Utiliser,
MADRAS-4.

Evin Rude out board motor parts at
Competitive rates

Contact:—

B. No. 1185.

C/o. Waste & Scrap Utiliser,
MADRAS-4.

GENERATING SETS

B. No. 1067.

C/o. Waste & Scrap Utiliser,
MADRAS-4.

VARIOUS TYPES OF CLOTH SCRAP

Contact with offers

B. No. 1038.

C/o. Waste & Scrap Utiliser,
MADRAS-4.

TRAILERS

B. No. 1068.

C/o. Waste & Scrap Utiliser,
MADRAS-4.

PAINTS

Red, Yellow & Olive green Rs. 8 per gallon.

B. No. 1070.

C/o. Waste & Scrap Utiliser,
MADRAS-4.

RED LEAD

RED OXIDE

B. No. 1071.

C/o. Waste & Scrap Utiliser,
MADRAS-4.

ASBESTOS GLOVES, British made
Military Surplus

B. No. 1064.

C/o. Waste & Scrap Utiliser,
MADRAS-4.

WHAT IS WASTE?

"MADHIUM"

Dirt, from the philosopher's standpoint, is simply matter in the wrong place, and industrial waste may be regarded similarly as useful material produced or dumped in places where it is not required. When transported to the right spot an industrial waste will often form the raw material for some secondary industry or manufacture. During the war period the truth of this was proved over and over again in all the belligerent countries, for owing to the difficulties of land sea transport, each nation was thrown back upon its own resources the supply of the materials required for its manufacturing industries, and in many wastes were turned to good use during the years 1914 to 1918. The brief spell of booming trade which followed the close of the war led to the discarding of a great many of these methods for utilising industrial wastes; and it is unfortunately true that up to the present date, they have not been brought again into use in this country.

Messrs. Austin and Lloyd, in their widely noticed book upon the "Secret of High Wages" have stated that the elimination of waste, both of materials and labour, has been one of the contributory causes of low manufacturing costs in America.

"The importance of reorganising waste, as such, has not always been so great as it is now. Industries have been created, thriven, and become famous, even though honeycombed with waste. Many of their traditions continue, and means of stopping the waste are disparaged as theoretical because they did not enter into the practice of earlier generations of the industry.

"Why stopping waste has now become the most important industrial objective is, because waste has become Extravagance. Waste is the sacrifice of energy, material, or other resources, without obtaining a corresponding equivalent. It is a perfectly tolerable process, if the waster can afford the loss; that is to say, if what he has acquired, or is acquiring, is enough to make good the otherwise uncompensated sacrifice. Extravagance, on the other hand, may occur in transactions on which a full equivalent is given for the individual sacrifice of resources,

if the equivalent is in a form that cannot be immediately exchanged, and the person who makes the sacrifice has not other resources to make it good.

"It is common ground that at the present time our country (India) is not Earning its Living. Until it does so, every avoidable sacrifice of its resources, without full equivalent, is therefore not only waste but extravagance. There is no fund available for maintaining the standard of living in any industry, and the present taxation of industry is analogous to using live-steam from a locomotive for cooling by known-air-conditioning railway carriages. This can be carried out only at the expense of speed and tractive power, and if too much steam is used the train will not arrive.

The methods of treating industrial wastes may be divided into two broad classes, according to the aim with which they are carried out. The treatment may be dictated solely by the desire to make a profit from some waste material which, if unutilised, could be otherwise disposed of without causing any nuisance. On the other hand, the treatment may be dictated by the necessity of converting into an innocuous form some waste material, either solid, liquid, or gaseous, which, in its untreated state, is objectionable to the eyes or nose, or is detrimental to the health of the community; and the question of producing from it, something which can be sold at a profit is entirely secondary in importance.

The number of waste products which come under the latter class is increasing rapidly with the growth in the extent and complexity of our industries; and the law is also strengthened by the Government of every civilised country as regards the prevention of pollution of the air and of the natural water courses with objectionable wastes. It is satisfactory to note, therefore, that many processes which were imposed upon the manufacturer originally by legal Pressure have become profit-earning at a later date, and have thus passed from one class into the other. It is highly probable that the efforts now being made to reduce smoke emission from the domestic and factory chimney will

follow the same course and that the laws which have been passed recently, in order to reduce the nuisance and damage caused by smoke will lead ultimately to the use of coal with a much higher thermal efficiency both in our homes and in our industries.

The most notable example of a recovery process imposed upon the manufacturers by law, which after wards became a source of large profits, is that of the recovery of hydrochloric acid from the waste gases of all alkali works. Prior to the passing of the Alkali Act of 1863 in England practically the whole the hydrochloric acid produced in the manufacture of sulphate soda was allowed to escape as a gas into the atmosphere; and not only, had this gas a detrimental effect upon the health of those who lived in the neighbourhood of the works, but it also caused great damage to crops and buildings over considerable area. The condensation of this gas, and its recovery in liquid form, led to the foundation of a new branch of industry; and a very large share of the profits made in the alkali industry, during the latter part of the nineteenth century, were derived from the chlorine products, for which the recovered hydrochloric acid served as the source of chlorine.

Another notable example of this kind from the past history of the chemical industry is that of the Chance process by which sulphur was recovered from a waste material in the manufacture of sodium carbonate by the Le Blanc process. Huge mounds of evil-smelling calciumsupphide were at one time accumulating in the vicinity of all the alkali works where caustic soda and soda ash were, manufactured; but the introduction of the chance process in 1888 solved the problem of the further disposal of this waste material, and it became the starting point and raw material of a new branch of chemical manufacture.

(To be continued in the next issue)

ACKNOWLEDGEMENT

We gratefully acknowledge, that the article titled "Electrolitic Recovery of Antimony and Lead, from Lead Acid Battery Wastes by Messrs. P. B. Day, V. Aravamudam, and P. R. Rajagopalan, was originally published, in *Indian Mining Journal* and reprinted in our December Issue, with the permission of the authors.

The Le Blanc process, however, has now had to give place to the electrolytic method of decomposing common salt for the manufacture of soda and chlorine compounds, and the two recovery processes referred to above are relegated to the Serapheap.

Passing now to more recent history, one of the most striking recovery processes which has been introduced in recent years is that of the use of the waste slag from iron smelting furnaces for the manufacture of road making materials.

Another branch of waste disposal and treatment which has undergone great development in recent years is that of the method of dealing with city and urban refuse. It was the general custom, up to the beginning of the present century simply to collect this refuse and to dump it on waste ground which was later used for building purposes. Unsightly rubbish tips, which were decorated with collections of old tin cans and scraped iron objects bedsteads and kettles, were thus common on the outskirts, of all our larger towns, and were the sources of many objectionable odours and the haunts of colonies of rats. Rubbish tips of this kind, unfortunately, are still to be seen in many places; but it may be hoped that a more educated public opinion will in time enforce the general adoption of more scientific and sanitary methods of dealing with this waste material. The second stage in the treatment of town refuse by the more progressive municipalities was its combustion in special destructor plants, followed by the dumping of the slag on these waste tips instead of the unconsumed materials. This plan has now given way to the still more scientific one of extracting all the valuable material from the refuse before passing the residue into the destructors, and the use of the slag obtained by the combustion of the refuse for the manufacture of slag concrete and other building materials.

RECOVERY OF ALUMINIUM

"SCRAP MASTER"

The method of working up fine turnings of aluminium and scrap metal practised in this country is that known as the "pasty" system of recovery. In order to carry this out, the turnings are mixed with 5 to 10 percent. of carbonate of soda and with 3 to 5 per cent of powdered charcoal, and the mixture is heated in a crucible upto the temperature at which reduction occurs and the mass is reduced to a pasty state. In this condition it is kneaded together and the temperature is raised to the melting point of the metal. The molten metal can then be separated from the mixture.

As usually practised, this method results in a considerable loss of aluminium, caused by beads of the reduced metal becoming entangled in the dirt, from which it is impossible to squeeze them out. The best method of recovering these beads is to place the scum or dirt in another crucible, with a few lbs. of zinc on top, and to heat the same until the zinc melts. This metal will then trickle down through the dirt and will pick up any aluminium that it encounters. This aluminium zinc alloy can be used over and over again for operating this recovery process, until it contains sufficient aluminium to render it marketable as a commercial product.

The scrap aluminium industry is quite a considerable one in this country, but no figures are available to show the amount of value of recovered metal. In U.S.A., however more information is available concerning the development of the industry, and the following figures are taken from a report by R. J. Anderson.

The author states in this report that in ten year period 1913 to 1922, aluminium metal and aluminium alloys to the value of £1,900,000 were recovered from 116,000 tons of scrap metal. As the metal produced in this way could be purchased at a lower price than new metal, it displaced an equivalent amount of the latter. About 54 percent. of the metal recovered was in the form of Al alloys, and the remainder was in the form of 98 to 99 per cent. metal.

As regards the classification of the metal available for reclamation, the five main sources were:—

1. Drosses and skimmings from the melting pots.
2. Clippings and similar scrap from manufactured aluminium and light alloys,
3. Borings from machines producing light alloy castings.
4. Castings and similar scrap from old motor cars.
5. Miscellaneous scrap.

DROSSES AND SKIMMINGS

The amount of aluminium melted annually in U.S.A, according to Anderson, based on the average of recent years, is 245,000,000-lbs. Of this total about one-half is melted for the production of aluminium ingots and bars, while the other half is employed for the production of alloys. The actual amount of dross produced per annum, on the assumption that 2 per cent of metal is lost in this way and that all the metal is melted twice, is therefore about 9,600,00 lbs. Since the dross contains on the average 50 per cent of metal and a recovery of 70 per cent can be attained the amount of aluminium recoverable from this source is estimated at 3,360,000 lbs. The larger proportions of this metal are recovered by the producing firms themselves, and it is only in the foundry industry that the dross is sold to the outsiders, who purchase this waste material.

MANUFACTURING SCRAP

This form of waste aluminium comes on the market from the production of the sheets and shaped goods, wire, utensils, motor-car bodies and trimmings, stampings and pressings; and the average amount of waste in the production of these various manufactures is estimated at 25 per cent. This type of scrap is generally quite clean and of good quality, and a possible recovery of 98 per cent of the 15,000,000 lbs. of scrap available can be looked for.

BORINGS FROM MACHINES

The total production of aluminium light alloy castings in 1923 in U. S. A. was 100,000,000 lbs., and about 92 per cent of the total were castings for the motor-car industry. Calculating that on the average the total weight of rough castings for each car amounted to 166 lbs and that the loss per car due to machining and boring was 15 per cent of this total, or about 25 lbs., the annual production of this form of waste aluminium would be about 15,000,000 lbs. The bulk of this scrap in 1923 was available for the recovery works specialising in this branch or metal reclamation; but there is an increasing tendency on the part of motor-car manufacturers in U. S. A. to erect and operate recovery plants for treating their own scrap.

CASTING AND SIMILAR SCRAP FROM OLD MOTOR CARS

Very large amounts of heavy alloy aluminium scrap are placed on the market through the scrapping of old motor cars, and the total

Kind of Scrap	Total Amount in lbs.	Amount Available for Dealers	Average Recovery
Drosses and skimmings	4,800,000	1,500,000	70 per cent.
Manufacturing scrap	30,000,000	15,000,000	90 to 98 per cent
Borings	15,000,000	12,000,000	80 per cent
Motor car scrap	30,000,000	15,000,000	95 to 98 per cent.
Miscellaneous scrap	3,000,000	2,000,000	85 per cent.
Total	82,000,000	45,500,000	Average, 85 per cent

As regards the methods of dealings with scrap in U. S. A., the drosses are generally crushed and screened before smelting, in order to remove as much of the oxide as possible, while borings are passed over a magnetic separator in order to remove any iron and steel that may have become mixed with them. The drosses are, therefore, less in demand than the borings and the scrap metal, while new aluminium cheap clippings and other clean scrap command the highest price.

Heavy aluminium alloy scrap, such as that obtained from scrapped motor cars, also commands a good price, since it can be melted with small oxidation loss, and cast directly into pig form. As regards actual prices, when new aluminium pig is selling at 28 cent per lb. in U. S. A. aluminium alloy borings will

from this source is increasing rapidly. More aluminium is being employed than formerly for motor-car construction, and scrap from this source has been found to be a very good material for remelting, since the composition is fairly regular.

There is consequently, considerable competition between the foundries and the secondary smelters or scrap dealers for the class of material, and the foundries can generally afford to pay higher prices for scrapped crank-cases and transmission boxes. Anderson has estimated that in U.S.A. 1,000,000 motor cars are scrapped annually, and at least one-half of these will each contain 60 lbs. of aluminium and aluminium alloys. The amount of scrap available from this source is therefore 30,000,000 lbs, and one-half of this goes to the smelters and the other half to the foundries, and in each case the recovery may be as high as 98 per cent.

The figures given above are summarised in the following table, but it must be understood that they refer only to the production in U.S.A.

command 8 to 9 cents per lb., aluminium alloy castings 15 cents to 16 cents per lb.; and new aluminium sheet clippings 19 cents per lb., whereas the dross containing 50 per cent. of the metal will only sell for 31½ cents per lb. It is customary for the recovery works to purchase all kinds of aluminium wastes, provided the price is low enough and the successful operation of such a plant will depend chiefly upon skilful work in blending the raw materials so as to produce a saleable pig from the varieties of scrap available. The difficulties of blending are much increased now that a larger number of alloys are employed in the casting industry, and the time is past when an aluminium recovery plant can be operated without the assistance of a skilled metallurgist.

AIR POLLUTION ABATEMENT

The two most important pillars of a legal structure through which air pollution abatement is to be achieved are, first, a law which will encourage the full utilization of technical knowledge, because this is a highly technical problem and, second, a law designed to give industry encouragement and authority to take the responsibility to achieve abatement.

Real air pollution abatement cannot be achieved without the cooperation of industry. Consequently, any law which makes industry suspicious or which does other than encourage and induce full industry cooperation is bound to fail. This is not to ignore the significant contribution to air pollution by non-industrial sources.

Industry today is quite convinced, and in fact became convinced and before many other segments of society, that cleaner air must be achieved over industrial cities. The techniques and technicians assembled by industry to work on this problem could never be duplicated by public agencies.

Those who argue that air pollution abatement must be done by law, find their best argument, it seems, in the assertion that unless abatement is required by law there will always be some backsliding companies which will not go along.

Industry will, do the job and cooperate fully if it is satisfied that those publicly charged with the job of air pollution abatement are honest about their attempt and competent to treat with the subject matter.

Some other basic points that always arise when any consideration is given to air

pollution abatement legislation are the following.

When one speaks of air pollution, he is using a term that does not define itself and which does not mean the same thing to all people and to all sections of the country. Air pollution means, principally, getting rid of the dirt by smoke control in one place, whereas in another, one of the chief concern is to eliminate the chemical contamination causing eye irritation and reducing visibility.

Is it then to include in-plant exposures to employees a subject now generally covered by state health department regulations and workmen's compensation laws, or only the problem of the general public and not the relationship of employer-employee?

It must be realised, of course, that every one contributes to air pollution every day by smoking cigarettes, driving automobiles, burning trash, and so on. All these sources send unnatural substances into the air. Determining a definition is always a good way to start consideration of subject with sharp thinking.

The air pollution may be defined as the presence in the atmosphere of substances, resulting from acts of man, in quantities which are or may become injurious to human, plant, or animal life or to property; all aspect of the employer-employee relationship as to health and safety hazards are excluded.

Experience to date seems to support the view that control should be in the smallest local unit competent to do the job.

WANTED

Stainless Steel Scrap and Metallic Residue

Contact:

Messrs. SHAH BHAGAT & CO.
48, NEW BUILDINGS, MADHAV WADI
DADAR, BOMBAY-14.



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இம்மாத இதழ்
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காரைக்குடி

Waste & Scrap U. C. I. Association
V. R. M. A. Buildings
N. Pudur, Karaikudi

கூட்டு அமைப்பின் குறிக்கோள்

“Waste and Scrap Utiliser” என்ற இந்த தமிழ் ஆங்கிலம் மாத இதழ் இந்தியாவிலேயே ஏன் ஆசியாவிலேயே இதுதான் முதல் முயற்சி. இன்று உபயோகமில்லாத வற்றை மற்றைய கைத் தொழில்களுக்கு உபயோகப்படுத்த விரும்பும் இந்நாளில் இத்தகைய மாத இதழுக்கு நிச்சயம் நல்ல வரவேற்பு இருக்கும் என்று நாங்கள் நம்புகிறோம். நாங்கள் முதன் முதலில் ஆங்கிலத்தில் மட்டுமே இவ்விதழைக் கொண்டுவந்தோம். ஆனால் எங்கள் கூட்டமைப்பில் பல அங்கத்தினர்களும், மற்றைய ஏனைய தொழில் அதிபர்களும் விரும்பிய தற் கிணங்க பற்பலப்பட்ட தமிழ் மக்களுக்கு உபயோகப்படும் வண்ணம் இத்தொழில் மாத இதழைக் கொண்டுவந்து இதனை கலை வாணியின் பொற்பாதங்களில் சமர்ப்பிக்கின்றோம்.

எங்கள் கூட்டு அமைப்பின் குறிக்கோள் யாதெனில் பொது மக்கள் உபயோக மில்லாதது என்று இன்று தள்ளப்படுகின்ற பொருள்களை, அவற்றையும் பற்பலப்பட்ட கைத்தொழில்களுக்கும் குடிசைத் தொழில்களுக்கும் மாற்று மூலப் பொருளாக உபயோகப்படுத்த முடியும் என்று அறியச் செய்வதே இன்றைக்கு நாம் நம்முடைய நாட்டை வெளி நாடுகளுடன் ஒப்பிட்டு பார்க்கும்போது பொதுவாக உற்பத்திப் பெருக்கம் தன்மை, கல்வி, தொழில் முதலியவற்றில் மிக குறைந்திருக்கிறது. உற்பத்தி சுருக்கத்தை எண்ணிப்பாராமல் பற்பலப்பட்ட தொழிற்சாலைகள் மதிப்பிட முடியாத மூலப் பொருள்களை உபயோகமற்றவை, தள்ளத் தகுந்தவை, கழிக்கக்கூடியவை என்று கருதி நாட்டின் செல்வத்தை அழிக்கின்றார்கள். இன்றைய பொருளாதார நிலையில் பல தொழிற்சாலைகள், தங்கள் தொழிற்சாலைகளில் உற்பத்தியாகும் உப பொருள்களையும், (By-Product) கழிப் பொருள்களையும், நல்ல முறையிலேயே பயன்படுத்த முடியாத வண்ணம் இருந்து வருகிறார்கள். இன்னும் சில

PROSPECTS OF REDUCING THE COST OF PRODUCTION OF HEAVY CHEMICALS

BY

V. ARAVAMUDHAN

(Senior Electro-Chemical Research Institute, Karaikudi)

(Continued from page 14 of December Issue)

Instead of the heading "Economics in the Reduction of Other Metal Sulphates" substitute the heading "Economics in the Production of other Metal Sulphates" and add the following at the end:—

CONCLUSION

In conclusion it may be pointed out that by adopting the procedures outlined in this contribution the use of sulphuric acid is eliminated in the production of

(1) Commercially important sulphates like those of ammonium, sodium, potassium, magnesium, manganese, aluminium and (2) Phosphatic potash and nitrogeous fertili-

sers. Sulphuric acid for (a) Rayon industry, (b) Pickling of iron and steel (c) for fixing ammonia as ammonium sulphate can be economically obtained by electrolysis of sodium sulphate solutions in the latest filter press type of mercury cathode cells. Valuable metal compounds are obtained economically from widely abundant low grade raw materials; not only to meet our requirements but also for exports. Self-sufficiency in sulphur is possible with simultaneous production of many alkali metal compounds economically. In the production of phosphatic fertilisers from rock phosphate, and metal sulphates from gypsum, calcium carbonate is obtained as a by-product suited for use in cement manufacture.

LETTER TO THE EDITOR

Triumph of Labour

Sir,

"TRIMPH OF LABOUR" a fine piece of Architecture recently revealed open by the Governor of Madras, brings up most to our mind certain thoughts.

It may be an accident that the statue is erected near University, the cream of education and intelligence probably reflects the present state of power of illiterate, uneducated and brutal over the educated in the sphere of State Politics.

It also gives us an idea, how our people are using manual power such as "CHARKA" when the most advanced machineries are available for the betterment of standard of living. This also makes us to realise how our Indian labour are semi-naked and half-fed while at the same time they are given fantastic promises and false ideals. Just as in the architecture where the men are lifting a rock by crude and manual methods when the same could be achieved very easily by using mechanical devices such as cranes, the condition of labour is proposed to be improved by methods such as strike etc, while the same improvement can be made, why even better by increasing the production in quantity and quality. This also bring our mind when in the same city of

Madras Corporation in which areas like Kodambakkam was denied of proper drainage facilities etc; the Madras Corporation thinks it is fit to waste several thousands of rupees in erecting the architecture and electrifying the Marina merely according to the whims and fancies of few. Such things are done by people who don't hear the cries of people for food. When the country needs all the resources for developing the country's economy for improving the standard of living and to give adequate food, sufficient clothing and proper shelter, these elected bodies irresponsible of their duty spend the valuable money extravagantly in the name of giving amenity to the people.

The State should come to the entertainment of the rich, only after providing the barest minimum needs of the people. When the men is starving for food, shivering in cold he is not interested to see and appreciate piece of architecture however fine it may be. It is only for those who are with time and money to enjoy the architecture. For the sake of a few, the Corporation need not have wasted such colossal amounts. Let the people in power realise that they have no authority morally to waste money when it is badly wanted for better purposes.

R. THAMBIRAN, B. Com., Madras

கள் இங்ஙனம் சரிசெய்யக் கூடிய, ஆனால் கெட்டுப் போன இயந்திரங்களை தங்களுக்கு கிடைக்கும் வருமான வரி குறைவுக்காக (Depreciation) அவற்றை தள்ளி, குறைந்த விலைக்கு விற்று அக்குக்காக உடைத்து எறிவதற்கு அனுமதி அளித்து, புத்தம் புதிய இயந்திரங்களை வெளி நாடுகளிலிருந்து கொள்னை -கொள்ளையாக பணம் கொடுத்து நாட்டின் செல்வத்தை சுரண்ட உதவுகிறார்கள். சில அன்னிய நாட்டு முதலாளிகள் இந்தியாவிலிருந்து பெருஞ் செல்வத்தை ஒரு கையால் கொடுத்து மறு கையால் அள்ளிச் செல்லுகிறார்கள்.

இன்றைய நாட்டிலே பல நூற்றுக் கணக்கான வியாபார கூட்டு அமைப்புகளும், தொழிற் குழுக்களும் (Chamber of Commerce) இருந்து வருகின்றன. அவற்றின் பெரும்பான்மையானவை இந்திய நாட்டின் முதலாளி வர்க்கத்தை முதுகெலும்பாகக் கொண்டவை. அவற்றின் பெரும்பான்மையானவை அரசாங்கத்தின் கொள்கைகளை தங்களுக்கு சாதகமாக ஆக்கிக்கொள்ளுவதிலேயே முனைந்திருக்கின்றன. ஆனால் இந்திய நாட்டின் சுபிட்சம், முன்னேற்றம் ஆகியவை ஏழைத் தொழிலாளிகள், நடுத்தர தொழில் அதிபர்கள் ஆகியோரின் உழைப்பிலிருக்கிறது. அவர்களின் வாழ்க்கை முன்னேற்றத்தைக் குறிக்கோளாக உள்ள கூட்டமைப்புகள் மிகக்குறைவு. ஆனால் எங்கள் கூட்டமைப்பின் முக்கிய குறிக்கோள் ஏழை, பணக்காரர் வித்தியாசமின்றி உபயோகமில்லாதவற்றை, உபயோகப்படுத்த விரும்புகின்றவர்கள், அவற்றில் வியாபாரம் செய்கிறவர்கள் ஆகியோர்களுக்கு உதவி செய்வதே எங்கள் குறிக்கோள். உதாரணமாக நமது அரசாங்கம் 5 டன் எடையுள்ள ரூ. 15,000 பெருமானமுள்ள ஒரு இயந்திரத்தை உபயோகமில்லாதது எனக் கருதி, அவற்றை சுமார் ரூ. 1,500-க்கு விற்று வருகிறார்கள். அவற்றை வாங்குகின்ற பழைய சாமான் வியாபாரிகள் அவைகளை உடைத்து அக்குவேறு ஆணிவேருக பிரித்து ஐப்பான் போன்ற நெளிநாடுகளிலுள்ள இரும்பு உறுக்கு சாலைகளுக்கு ஏற்றுமதி செய்கிறார்கள் அவ்விதம் ஏற்றுமதி செய்யப்படும் பழைய இரும்பு நமக்கு அங்கேயிருந்து புதிய சாமான்களாக பத்து மடங்கு, ஏன் சில சமயங்களில் 100 மடங்கு அதிகமான விலையில் வந்து சேருகிறது. இங்ஙனம் அன்னிய செலாவணி இரண்டு வகைகளில் நமக்கு பெருஷ்டத்தை உண்டுபண்ணுகிறது. அந்த பழைய இயந்திரமானது (சுமார் ரூ. 5000 அதிகமாக

கணக்குப் போட்டாலும்கூட) செலவழித்து சரி செய்யப்பட்டாலும், அது தேவைப்படுகின்ற ஒரு தொழிலுக்கு மிக உபயோகமானவையாக இருக்கும். அத்தொழிலும், அத்தகைய இயந்திரத்தை வெளி நாடுகளிலிருந்து இறக்குமதி செய்யாமல் நம்முடைய அன்னிய செலாவணியை மிச்சப்படுத்தும். மேலும் அதை சரிசெய்வதற்கான முழுச் செலவும் வெளி நாட்டுக்குச் செல்லாமல் நமது நாட்டின் தொழிலாளிக்கு செல்லுகிறது. ஆனால் சிலர் இங்ஙனம் பழைய இயந்திரங்களை உபயோகித்தால், உற்பத்தி தரம், எண்ணிக்கை, புதிய நவீன இயந்திரங்களைப் போன்று இருக்காது என கூறுபவர் இருக்கலாம். அவர்களுக்கு சரியானபதில் நம்முடைய அம்பர் சர்க்கா. (Amber charka)

நம்முடைய தினசரி வாழ்க்கையில் பலதரப்பட்ட பொருட்களை ஒதுக்கவும், உடைக்கவும் செய்கிறோம். ஏன் உடைக்கிறோம்? அவற்றைப் பற்றி எண்ணத்தில் எவ்வளவும் கொள்ளாமல் செய்கிறோம். இதே மாதிரியாக பற்பல தொழில்களிலும் நடக்கிறது. தோராயமாக ஏறக்குறைய இந்நாட்டிலே சுமார் 100 கோடி ரூபாய்கள் இந்த வகையிலே கேள்வி கேட்பாரற்று அழிகிறது. அந்த முறைக் கெட்ட அழிவுக்கு ஒரு முடிவுத்தேட நம் மக்கள் அனைவரும் ஒன்று சேர்ந்து ஒரு முனையாய் முனைந்தால் முடியாதது ஒன்று உண்டா?

“முயற்சி திருவினை ஆக்கும் முயற்று இன்மை இன்மை புகுத்திவிடும்”

என்ற வள்ளுவன் வாக்கை மனதிலே கொண்டு ஆராயவேண்டும். ஒவ்வொருவரும் தத்தம் தொழில்களில் பொருட்களை ஒதுக்காமல் உதறாமல் அவற்றை நல் உபயோகத்திற்கும், நாட்டின் வளப்பத்திற்கும், ஒருவழி வகுக்க வேண்டும். இந்திய நாட்டின் மண்ணிலே பிறந்த நாம் ஒவ்வொருவரும் நம் அறிவை கதிரோகைக் கொண்டு இன்று இருள் அடைந்து மங்கியிருக்கும் இத்துறையிலே வழிகோல வேண்டும்.

மேற்கூறியவை எங்களின் பொதுக் குறிக்கோளை உள்ளங்கை நெல்லிக்கனி போல் விளங்கும். இத்துறையிலே தங்களுக்கு தோன்றுகின்ற எப்பொருளைப் பற்றியும் எங்கள் கூட்டு அமைப்புக்கு (Association) எழுதினால் எங்கள் கூட்டுயமைப்பு இயன்ற உதவியை செய்ய தங்களுக்கு காத்துக் கொண்டிருக்கிறது.

நாடும் - நாமும்

(மதியம்)

இன்று நாட்டிலே பழைய சாமான்கள், உபயோகமில்லாத மூலப்பொருட்கள், பழைய இயந்திரங்கள், ஆகியவைகளின் வியாபாரம் பெரும்பான்மையாக அனுபவமுள்ள ஆனால் கல்வி அறிவு இல்லாத வியாபாரிகள் கையில் இருந்து வருகிறது அவர்களிடம் ஆழ்ந்த வியாபார அனுபவமிருந்தாலும் கூட அவர்களுக்கு தெரியாத காரணத்தால் பல உபமூலப் பொருட்கள் அவர்களுக்குத் தெரியாமல், உபயோகமில்லாதன (Scrap) கருதி வெளிநாடுகளுக்கு குறைந்த விலைக்கு ஏற்றுமதி செய்யப்பட்டு, அவர்களும் நஷ்டமடைந்து நாட்டிற்கும் நஷ்டத்தை ஏற்படுத்துகிறார்கள். ஒவ்வொரு பழைய சாமான் வியாபாரியும் ஏற்றுமதியாளரும், அரசாங்க அனுமதி பெற்று வியாபாரம் செய்ய ஓர் திட்டம் வகுக்க வேண்டும். அத்திட்டத்தின் கீழ் வெளிநாடுகளுக்கு ஏற்றுமதி செய்யப்படும் பொருட்களை துருவி ஆராய்ந்து அவற்றில் நம் நாட்டிலேயே பயன்படக் கூடிய பொருட்கள் இல்லை, உபயோகமில்லாதது (Scrap) என்ற பெயரில் பல அரிய உலோகங்களான நிக்கல், பிளாட்டினம் போன்றவை இல்லை என்று அத்தாட்சிப் பத்திரம் வழங்க ஒரு பொதுக்குழு இருத்தல் வேண்டும். மேலும் நம் நாட்டிலேயே முடிந்தவரைக்கும் உபயோகப்படுத்தக்கூடிய மேற்கூறிய உபமூலப் பொருட்களை வெளிநாடுகளுக்கு ஏற்றுமதி செய்ய அனுமதிக்கக் கூடாது. அரசாங்கம் மற்றைய தொழில்களிலிருந்து வரும் உபமூலப்பொருட்களையும் தேவையில்லா கழிவுப் பொருட்களையும், உபயோகப்படுத்தக் கூடிய தொழிற்சாலைகளுக்கு ஆதரவு கொடுக்க வேண்டும். அங்ஙனம் உபயோகமுள்ள மூலப்பொருட்களை எந்த எந்த துறையில் எவ்வளவு லாபகரமாக உபயோகப் படுத்தமுடியும் என்று ஆராய்ந்து கூற ஓர் ஆராய்ச்சிக்குழு அமைக்க வேண்டும்.

நாம் மிகக் கஷ்டப்பட்டு அடிமைதனையிலிருந்து விடுபட்ட நாட்டை பொருளாதாரத் துறையிலும் வாழ்க்கைத் தரத்திலும் உயர்த்த 40 கோடி மக்களாகிய நாம் நெற்றியியர்வை நிலத்திலே விழ பாடுபடுகிறோம். இந்த நிலைமையிலே சில துறைகளில் நம்மிடமுள்ள குறைந்த அனுபவத் துடனே, மிகுந்த முன்னேற்ற மடைந்த நாடுகள் இன்று பின்பற்றுகின்ற முறையை நாம் பின்பற்ற முயற்சிக்கையில், சில சமயங்களில் தோல்வியடை

கிறோம். அத்தோல்வியின் காரணமாகவே பொருளாதார நெருக்கடி ஏற்படுகிறது. உதாரணமாக அமெரிக்கா போன்ற நாடுகள் பல நாடுகளில் தூதுவராலயங்களை திறப்பதையும் அவ்வாலயங்கள் பெரிய பெரிய விருந்துகளை பெருஞ் செலவில் வைப்பதை முன்னிட்டு; நம் நாடும், மக்கள் உண்ண உணவின்றி, உடுக்க உடையின்றி, இருக்க இடமின்றி, வருந்துகிற இந்நாளில் ஆடம்பரமாக பற்பல தூதுவராலயத்தை நிறுவி, பல லக்ஷக்கணக்கான ரூபாயை செலவிடுகிறது. நாம் அவர்களை எல்லா முறையிலும் பின்பற்றாமல் அவர்களிடையிலுள்ள நற்பண்புகளை, நல்லறிவுகளை நாம் பின்பற்றினால் நமக்கு நற்பயன் விளையும். அதையே பொய்யாமொழி திருவள்ளுவரும்,

“எப்பொருள் யார்யார்வாய்க் கேட்பினும் அப்பொருள் மெய்ப்பொருள் காண்ப தறிவு.”

என்று கூறுகிறார். திருக்குறளின் கருத்தை இன்றைய நாட்டின் உபயோகமில்லாத சாமான்கள் (Scrap) வியாபாரத் துறையில் உபயோகப் படுத்துதல் வேண்டும். அன்று ஆங்கிலேயர்கள் 2-வது உலக மகாயுத்தத்தின்போது உள் நாட்டிலே மூலப் பொருட்கள் குறைந்தும், வெளிநாடுகளிலிருந்து இறக்குமதி நின்றிருந்த பொருட்களை உபயோகமில்லாதன கருதி ஒதுக்கி வந்த காலத்தேயே உபயோகமுள்ள பொருட்களாக மாற்ற முயன்று அதில் வெற்றியும் கண்டனர். இன்று அந்நாட்டிலே இத்துறையிலே நூற்றுக்கணக்கான கூட்டமைப்புகளும் (Associations) எண்ணிக்கையில்லா பத்திரிகைகளும், அரசாங்க ஆராய்ச்சி கழகங்கள் பலவும் இயங்கிவருகின்றன. இந்தியாவைக் காட்டிலும் மக்கட்தொகையிலும், மானிலத்திலும் குறைந்த அந்நாடு நம் நாடுபோன்ற முன்னேற்றமடையா ஆசிய ஆப்பிரிக்க நாடுகளிலிருந்து உபயோகமில்லாதன என்று ஒதுக்கப்படும் பொருட்களை குறைந்த விலைக்கு வாங்கி உபயோகமுள்ள பொருட்களாக மாற்றி நம் நாட்டிற்கே திருப்பி அனுப்பி பல லக்ஷக்கணக்கான ரூபாயை பெறுகிறார்கள். அன்று பாண்டிச்சேரிக்கு முத்தும் மணியும், சேரநாட்டிலிருந்து அகிலும் துகிலும், மிளகும் தந்தமும் அனுப்பி புகழ் பெற்ற இத்தமிழ்நாடு (பொன்னாடு) இன்று கரலச் சூழலிலே சிக்கி நம் நாட்டிற்கு தேவையான பொருட்களை வெளிநாடுகளுக்கு அனுப்பி தனக்குத் தானே தீங்கு ஏற்படுத்திக் கொள்கிறது.

எங்கள் கூட்டமைப்பின் செய்திகள்

தமிழ் நாட்டின் முதலமைச்சர் திரு. காமராஜ் நாடார் காங்கிரஸ் கட்சிக் கொறடா திரு. கருத்திருமன் முதலியவர்களோடு, நமது கூட்டமைப்பிற்கு விஜயம் செய்து கூட்டமைப்பின் நடவடிக்கைகளைப் பற்றி தலைவர் அவர்களிடம் அளவளாவினார்.

TECHNICAL ASSISTANCE

The growth of applied sciences, particularly after the Industrial Revolution, opened up before mankind untold possibilities for advancement. While science applied to constructive, nation-building activities has brought health, happiness and comfort to the people, its destructive potential has brought in its wake war, misery and suffering.

The advancement of science has, however, shown that the world is too small for any one country to live in isolation, oblivious of what is happening in other parts of the world. This fact has painfully brought into prominence during the two wars of this century, which showed that prosperity in one region could only be short-lived if poverty, frustration and squalor prevailed elsewhere. It was realised that starvation, malnutrition, disease and ignorance were as much causes of war as greed and imperialist expansion, for latter took advantage of the low capacity of resistance and economic backwardness of people.

Thus collective security, as represented in the United Nations, seeks not only to prevent war by outlawing it, if possible, as a weapon for the settlement of international differences but also by raising the standard of living in economically backward areas.

An improvement in the standard of living in under-developed countries is sought to be effected in two ways;

(1) by direct financial assistance and (2) by the provision of technical assistance so that advanced technical skill and knowledge may be forthcoming for the development of such areas. The question of financial assistance is not discussed here except to the extent that such financial contribution is directly linked with offers of technical assistance.

Expanded programme of Technical Co-operation

The need for technical assistance to under-developed countries was recognised in the U. N. Charter. In one of its Resolutions, the General Assembly said that the rapid technological evolution of the past two to three centuries had led to the use of the World's resources, for the benefit of its inhabitants "With unprecedented and increasing effectiveness," but the rate of progress in different geographical areas was notably unequal. While great possibilities for economic development existed in most of less developed countries, the full use of their potential resources, the resolution said, would require the employment of the latest scientific and technical advances.

The gap between the developed and under-developed countries is one of the most significant and alarming aspects of contemporary society. Accordingly, the Charter of the

United Nations enjoins on the member countries to pledge themselves to co-operate:

- (a) in solving international problems of economic, social, cultural and humanitarian character;
- (b) in the promotion of a higher standard of living, full employment and conditions of economic and social progress and development; and
- (c) in the promotion of international, economic, social, health and related problems as well as in international, cultural and educational co-operation.

The United Nations had drawn up in 1949 its Expanded Programme of Technical Co-operation. This programme includes assistance not only from the United Nations but also from its specialised agencies.

The Colombo Plan

The need for such co-operative approach was also felt among the Commonwealth countries, and at a Conference of the Prime Ministers of the Commonwealth Governments held in Colombo in 1950, the idea of a joint plan for economic development of South and South-East Asian countries was first mooted. Subsequently, the idea developed into what is popularly known as the Colombo plan. Under this plan, apart from the financial assistance which the member countries may make towards the economic uplift of the

underdeveloped countries in the area, a council of Technical Co-operation has been set up with a view to co-ordinating the provision of technical assistance bilaterally.

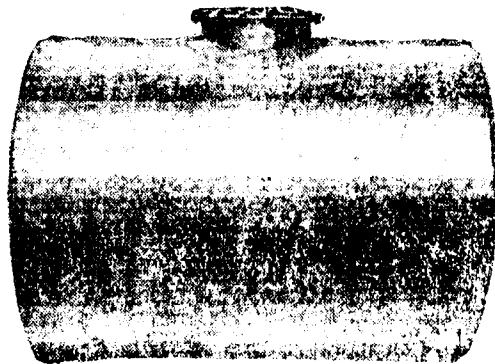
Bilateral Assistance—U. S. A.

Assistance by country to another on a bilateral basis, independent of any assistance rendered by international organisations, is another important feature of the post-war world economy and in this respect the United States of America, with her enormous resources and highly advanced economy, forms the largest single potential source and contributor of assistance. She has substantial assistance to many underdeveloped and war-devastated countries. The Marshall Plan and European Recovery Programme symbolised some aspects of this assistance, although these were confined largely to financial aid for the rebuilding of countries which had been shattered by the war.

Ford Foundation

Since 1951, the Ford Foundation, as a private philanthropic trust, has also assisted a group of nations of the Near East and Asia in their programme of development. The Foundation's object is to help these nations in their social and economic progress, to improve village life and to provide educational opportunities to the people, besides assisting their governments and private agencies in strengthening services which advance public welfare.

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சந்தாதாரர்களுக்குச் சலுகை!!

பொழுது போக்கு பத்திரிகைகளில் பணத்தைக் கொடுத்து விளம்பரம் செய்வது பயன்தருமா? இதை பெருவாரியான வியாபாரிகள் சிந்திப்பதில்லை. பத்திரிகைகளின் எண்ணிக்கையை கணக்கிட்டு விளம்பரம் கொடுக்கிறார்கள். மேல்கண்ட பத்திரிகைகளும் விளம்பரமூலம் பெறும் வருமானத்திற்காக ஏதோ ஒரு மூலையில் விளம்பரம் செய்கிறார்கள்.

வியாபாரம் சம்பந்தமான விளம்பரங்கள் வியாபாரம் சம்பந்தமான பத்திரிகைகளில் விளம்பரம் செய்வதுதான் உகந்தது. ஆனால் எல்லோராலும் பணம் கொடுத்து விளம்பரம் செய்ய முடியுமா? விளம்பரம் செய்து விற்பனை செய்து ஆதாயம் பெறும் அளவிற்கு உள்ள வியாபாரமா? இந்தப் பிரச்சனைகளுக்கு இடமே இல்லாமல் எங்கள் பத்திரிகையில் நாங்கள் சந்தாதாரர்களுக்கு விசேஷ சலுகை என்ற முறையில், கட்டணமில்லாமல் நாங்கள் விளம்பரம் செய்கிறோம்.

இன்றே உங்கள் வருட சந்தாவாகிய ரூ. 12-யை அனுப்பி சந்தாதாரராக சேர்ந்து, மேல்கண்ட சலுகையில் பயன் பெறுங்கள்.

In addition to the regular programme of assistance indicated above, *ad hoc* offers of technical assistance, training facilities etc., are also received occasionally from foreign governments, firms, institutions and Universities. These offers are dealt with in the central ministries concerned in accordance with such rules as the assisting organisations may prescribe.

Indian's faith in international co-operation

Ever since she became independent, India has been taking an increasingly important part in international affairs. She feels that the existing inequality in the distribution of wealth in different parts of the world contains the germs of war. From this reason she has participated wholeheartedly in the activities of the United Nations and in the Colombo Plan, while her own problems are many, she has not failed to extend the hand of co-operation in providing both financial and technical assistance to a number of countries in South-East Asia.

How to Obtain Technical Assistance

Applications for technical assistance are accepted by foreign Governments or organisations only from the Government of the requesting country. In India applications must therefore be sponsored by the Government of India in order to be eligible for such assistance.

Who are eligible to apply?

The Central and States Governments, recognised associations and institutions and private firms (through the respective State Governments) are entitled to apply for technical assistance. All applications must be addressed to the International Aid Co-ordination Unit, Ministry of Finance, Government of India, which will scrutinise them in consultation with the applicant organisation, the Union Ministry or the State Government concerned as well as the Planning Commission where necessary. Thereafter, the applications will be forwarded to the respective organisations.

Specimen forms of applications to be used are included in the Appendices. The number of copies to be submitted in each case has also been indicated.

Applications received direct from the candidates will not be considered. Only

those who are already in employment and whose applications are duly sponsored by their employers are eligible for consideration.

Field of Assistance

Experts or training facilities available relate to subjects which are likely to contribute to the economic development of a country, although the specific subject for which assistance is sought must be settled between the parties concerned. Generally speaking, assistance may be had on the following broad category of subjects:

- Economic Planning
- Power Projects
- Extractive Industries
- Other Industries
- Transport
- Communications
- Mutual Aid and Co-operation
- Housing and Town Planning
- Statistical Studies
- Public Finance and Fiscal Policies
- Social Welfare and Criminology
- Development Surveys.

Basic Considerations

Before applying for technical assistance, the Central Ministries, State Governments and other eligible institutions and organisations must take the following into account:

- (a) whether the type of assistance required is available from a particular country or organisation from which it is proposed to seek help. (The advice of the International Aid Co-ordination Advice Unit, Ministry of Finance may be sought in the matter);
- (b) whether the projects for which assistance is required are essential in the national interest; and
- (c) whether the necessary funds would be available to meet local expenditure.

After these aspects have been considered and found satisfactory, applications have to be made in the proper form. As these have to pass through a number of channels, only those which are submitted in the proper form, will be considered.

தேவை

30,000—முதல்கு பெரிய காக்கி வெப் துணிகள்—30,000 முதல் கிரேட் காக்கிதேவச்சாக்குகள்—50000 முதல் கிரேட் வெப் பெட்டுகள்—60,000 முதல்கு கைப்பட்டைகள்—இன்னும் வெப் சம்பந்தமான வகையராக்கள்—முதல் தர காக்கி நிஜார்கள் பிளேஸுகள் கோட்டுகள் சொக்காய்கள் முதலியன பெட்டி நெ. 1020	காகிதங்கள் சுத்தமானது கனமுள்ளது வெள்ளை—அச்சானதும் வெள்ளையானதும் (மாப் காகிதங்கள்) மாதாந்தர அளவு 20 டன்களுக்குக் குறையாமல். ஒரு வருட காண்டிராக்ட்—உயர்ந்த விலைகளா யினும் கவலையில்லை. பெட்டி நெ. 1011.
எல்லா கலரிலும் வெள்ளையிலும் அலுமினியம் பாயல் வேஸ்டுகள் காகிதமுடனும் இல்லாமலும் தவிர அலுமினியம் ஸ்கராப்புகள் எந்த வகையிலும் பெட்டி எண் 1003	சரக்குகள் தேவை பித்தளை ஸ்கராப்புகள் 20—5, 10, இன்னும் டன் கணக்கிலும். பெட்டி எண் 1012
இறக்கை மெத்தைகள், ஐட்டெளன், அழுக்க டைந்த இறைச்சித் துணிகள், ரேயன் கயிறுகள்—கைமேல் பணம். பெட்டி எண் 1100	40 டன்கள் சுமாராக ஸ்கராப் மோட்டார் டைர்கள்—20 டன் ஜெயின்ஸ், பாஸஞ்சர் 20 டன்கள். பெட்டி எண் 1015
சுத்தமான நிக்கல் ஆனோடுகள், சுத்தமான நிக்கல் ஸ்கராப்புகள் “நிமோனிக்”, “இன்கோனல்”, “மோனல்”, இன்னும் பல. பெட்டி எண் 1022	ஜாப்-டோன்ட் பிராஸ் வுட்ஸ்குக்கள், கால் வளைஸ்டு வுட்ஸ்குக்கள், டிரான்ஸ்பிராபெல்லர்கள்—எல்லாம் மரைன் சம்பந்தமானவை. பெட்டி எண் 1028
மல்டி-பிளே கிராப்ட் ஸ்கராப்ஸ்—சிமெண்டு பைகள்—எவ்விதமான சிக்கல்களும் இல்லாதது. பெட்டி எண் 1017	மிக்ஸ்ட் கம்பள வகைகள்—மிக்ஸ்ட் ஸ்டாக் கிங்குகள்—கைமேல் பணம். பெட்டி எண் 1029
கோட்டோன்ட் ஷேவிங்ஸ், வெள்ளை, இன்னும் கலருள்ள ஷேவிங்ஸ், வெள்ளைபளுவான கடிதங்கள் இன்னும் இவற்றில் கலர்கள், டாபுலேட்டிங் கார்டுகள், விலை இன்னும் டன்கள் சம்பந்தமாக பெட்டி எண் 1027	A. M. ஸ்டாக்கிலிருந்து நீங்கலாக ரேடியோ இன்னும் மின்சார சாமான்கள், ஆபுதங்கள், குறிப்பாக ரோட்கல்ஸ், ஸ்மிதஸ், பிளேஸ்ஸி சாமான் வகைகள். பெட்டி எண் 1019
எல்லா வகையான பெதர், பெதர் பெட்டுகள், ஐட்டெளன் வகையராக்கள், சரியான விலை. பெட்டி எண் 1025	இரண்டாம் ரக ஸ்டீல் ஷெல்புகள்—உபயோக முள்ள நிலையில். பெட்டி எண் 1103
மிக்ஸ்ட் ஸ்டாக்கிங்ஸ், திரைகள், ஸெர்ஜுகள், அப்பட்டமான கலப்புகள்—வெளுக்காதது. பெட்டி எண் 1023	ஸ்டெயின்லஸ் ஸ்டீல்—ஹைகிரேட் 100 டாங்கிகள்—உடனடியாக தேவை. பெட்டி எண் 1053
இண்டஸ்ட்ரியல் டைமண்டுகள் எந்த அளவிலும் பெட்டி எண் 1061	ஆஸிட் ஜாடிகள், எத்தனை இருப்பினும் சரி. பெட்டி எண் 1081
ரிகவர்டு பாதரச வகையராக்கள் பெட்டி நெ. 1015	வேபிரிட்ஜுகள், நல்லதாயினும், உடைபட்டதும். பெட்டி எண் 1074
வேஸ்ட் கொழுப்புகள், எந்த வகை—அளவிலும். பெட்டி நெ. 1008	ஈரப்பதமான கிராப்ட் பேப்பர் டவலிங் பெட்டி எண் 1018
டிராயர்கள் பெட்டி எண் 1045	100-லிருந்து 1 லக்ஷம் கால்கள் கொள்ளு டாங்கிகள்—வட்ட வடிவம், சதுரமானவை, அளவாயினும் சரியே. பெட்டி எண் 1047
பில்டர் துணிகள் பெட்டி எண் 1016	

C/o. வேஸ்ட் அண்டு ஸ்கிராப் யுடிலைஸர், சென்னை-4.

தேவை

புதிய பால்சூகனும் ரோலர் பேரிங்குகளும்—எல்லா ரகங்களிலும் அளவுகளிலும். பெட்டி எண் 1024	பாய்லர்கள்—சிறியவை பெரியவை எதுவாகியும் சரி—ஸ்கராப்புகளின் உபயோகத்திற்கு. பெட்டி எண் 1060
100 ஜன்னல்களும் கதவுகளும்—இரண்டாம் தரமோ அல்லது புத்தம் புதுசோ, எதுவாயினும் சரி விபரங்களுக்கு. பெட்டி எண் 1078	தேவை வேக்கம் பம்புகள் 14-30 அங்குலங்கள் வரை பிஸ்டன் டைப்புகள் பெட்டி எண் 1050
மின்சார மோட்டார்கள்—A. C. அல்லது D.C. ஆல்டர்னேட்டர்கள், ஜெனரேட்டர்கள், டிஸல் என்ஜின். உயர்ந்த விலை தரப்படும். கைமேல் பணம். பெட்டி எண் 1048	உல் கிளிப்பிங்ஸ், உலன் ஸ்கராப், துணி ஸ்கராப் பேப்பர் ஸ்கிராப் எவ்வளவு தேவைக்கும் எந்த அளவிலும்—விலையுடன் விசாரிக்கவும். பெட்டி எண் 1076
கடினமான கற்கள் (rags) வகையராக்கள், உலோகங்கள், இரும்பு, காகிதம், பெல்ட் கட்டிங்கள், கம்பளமயிரிகள், உரோமங்கள், பிளாஸ்டிக் ஸ்கராப்ஸ், முதலியவை, பெட்டி எண் 1004	இராணுவ உபரி பெயிண்டுகள் ஸாம்பிள்களுடன் விலை, மாதிரிகளும் தேவைக்கு அனுப்பப்படும். ஸாம்பிள்களின் விலைகளை நாங்கள் ஏற்றுக் கொள்ளுகிறோம். பெட்டி எண் 1054
மெஷினரி, லேத் பிரஸ்ஸுகள், ஜேபிங் மெஷின் கிரின்னிங் டிரஸ்ஸுகள், ஜேப்பர்கள், மில்லிங்—இரண்டாம் தரம் அல்லது உடைபட்டது—எதுவாயினும் சரி—எங்கள் செலவில் ஒரு கைம் மாறும் கருதாமல் நேரில் வந்து பார்க்கிறோம். பெட்டி எண் 1046	சகல நிக்கல் சம்பந்தமான சாமான்கள்—அசலான நிக்கல்—ஆனோடுகள், கட்டிங்ஸ், ஸ்டெயின்லெஸ் ஸ்டீல், ஸ்கராப்ஸ், ஆப்-கட்ஸ் பார்கள் டங்ஸ்டன் இன்னும் கோபால்ட்-பாகிங் சாமான்களுக்குப் பிரத்தியேகமான விலைகள். பெட்டி எண் 1002
வெல்-போரிங்மெஷின் 6 x 8 அங்குலங்கள் பெரும் அளவில் பிட்டர்கள். பெட்டி எண் 1056	துருப்பிடிக்காத ஸ்கராப்புகள், கழிவுச் சாமான்கள் ஆர்மேச்சர்ஸ், ஒரேமாதிரியான பார்ஸல் கம்போனெண்டுகள்—இவற்றிற்கு அதிக விலைகளும் தரப்படும். உடனே கைமேல் பணம் தரப்படும். பெட்டி எண் 1001
ரேடியோ வால்வுகள், எலக்ட்ரிக் பல்புகள் எக்ஸ்ரே வால்வுகள், டிரான்ஸ்மிட்டர் வால்வுகள். பெட்டி எண் 1018	டெலஸ்கோப், லேபரேடரி ஸ்கேல் பெட்டி எண் 1057
காரப்பேர்டு ஜூனியர் பிரஸ், 3 பெட்டிகள். பெட்டி எண் 1014	இரண்டாம் ரக டைமண்ட் டிப்ட் டீல்கள் பெட்டி எண் 1062
ரூட்ஸ் ப்ளோயர் (Roots Blower) பெட்டி எண் 1051	விமானங்களின் பல்புகள் பெட்டி எண் 1077
விமான வார்னிஷ் ரகங்கள், வர்ணங்கள் பெட்டி எண் 1080	எனினிமா பிலிம் சுருணைகள் உபயோகிக்கப்பட்டவை. பெட்டி எண் 1044
எப்பொழுதும் வாங்கப்படும் மோட்டார், ஹைட்ரோ ஆப்கட்டுகள், அப்ஹோல் ஸ்டரி வகையராக்கள்—எந்த அளவுகளிலும் சரி. பெட்டி எண் 1009	எந்த வகையான விலையானாலும் சரி. எக்ஸ் போஸ் செய்யப்பட்டதும் சுத்தம் செய்யப்பட்டதும். பெட்டி எண் 1075
எனென்றால்—எங்களது சொந்த தேவைக்கு நாங்கள் வாங்குவதால் எவ்வளவு தொகையானாலும் கைமேல் பணம் செலுத்தி உங்கள் பட்டரைகளிலேயே நேரில் வந்து பெற்றுக் கொள்கிறோம். விவரங்களுக்கு எங்களை அணுகுங்கள். பெட்டி எண் 1007	வேஸ்ட் ஸில்க்—எது இருப்பினும் சரி—நிறம் வெள்ளை—ஸாம்பிள்களுடன் எழுதவும். பெட்டி எண் 1075

C/o. வேஸ்ட் அண்டு ஸ்கிராப் யுடிலைஸர், சென்னை-4.

Complete information

correct and information should be in reply to the various questions. For the request be for an expert or for ing facilities, it is essential for a speedy proposal of the application to make it as self-contained as possible, so that no reference to back the application is necessary for clarification or further information. If, for example, the right man is to be found those responsible for finding him must have the most detailed information as to why he is wanted and what precisely it is that he will be required to do. They should also be provided with or referred to the findings of any previous consultant in the same field. If the expert is required to organise an industrial enterprise, he would like to know its size and the machinery to be used for it. A candidate for a job at university or technical college must know how many students he will have to teach and what standards they are expected to reach. In short, while it is possible to give too much background information about a particular type of job, experience has shown that it is too easy to give too little. It takes months to get the required supplementary information before the search for can even be taken up. It is therefore most important that the fullest possible information should be given when the application is made. Again, when an assisting organisation calls for any additional information, every effort should be made to supply it as quickly as possible.

It is, of course, important that in order to ensure the best use of the technical man-

power that is available, the qualifications for a particular post should not be overstated. In general, the higher qualified a man is, the more specialised will be the field in which he can be most usefully employed. The specification for a post should consequently be given very careful consideration.

Cost of assistance

The cost of technical assistance are borne jointly and every agreement for assistance stipulates the share of the cost to be borne by the parties concerned. As a rule, the organisation or Government offering assistance is responsible for the salaries of the expert's passage to and from the receiving country, and in the case of trainees, their passage from and to the receiving country and their maintenance allowance while they are abroad. The Government or the organisation receiving assistance bears local costs which, in the case of experts, include office accommodation and equipment, stenographic and secretariat assistant local transport.

Maintenance allowance for trainees

The actual amount of maintenance allowance for the trainees given by the Government or organisations offering scholarships and fellowships is determined by various factors, such as the type of trainees invited, the place of training, the period of training, the course selected, books and equipment required, etc.

(From Technical Assistance, Ministry of Information and Broadcasting)

அரசாங்கம் கவனிக்குமா?

அரசாங்க அலுவலகங்களிலே அவர்களால் தள்ளப்பட்ட தஸ்தாவேஜுகளை 'அஜாக்ரதை தடுப்பு'—'பந்தோபஸ்து' என்ற பெயரால் அவ்வப்போது தீயிட்டு எரித்து வருகிறார்கள். இந்த 'தஸ்தாவேஜு அழிப்பு' முறை தேவையா? அதைத் தவிர்த்து, தஸ்தாவேஜுகளை பெரிய அளவில் மீண்டும் காகிதத் தொழிலுக்கு மூலப்பொருளாக மீட்டி எடுக்க முடியுமா?

இதை அரசாங்கம் கவனிக்க வேண்டும். மேற்கண்டபடி மீட்சி முறையைக் கையாண்டு சுமார் 200 டன் காகிதத்திற்கு மூலப்பொருள்களைக் கொடுத்து, சற்றேறக்குறைய 8 லட்ச ரூபாய் அன்னிய செலாவணியைக் குறைக்கலாமல்லவா?

Statement about ownership and other particulars about newspaper
(to be published in the first issue every year after the last day of February.)

பிரதி

FORM IV
(See Rule 8)

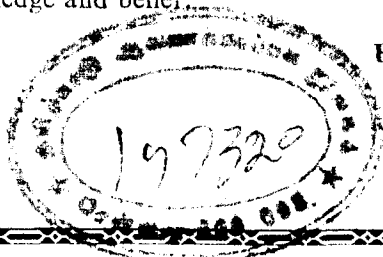
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Mylapore, Madras-4 |

I, Sri R. M. AVADIAPPA, hereby declare that the particulars given above are true to the best of my knowledge and belief.

Hony. President of the Association.

Dated 22-2-59.

Signature of Publisher



தவிர்க்க முடியாத சில சந்தர்ப்பங்களை ஒட்டி ஜனவரி, பிப்ரவரி மாத இதழ்கள் ஒன்றாக சேர்க்கப்பட்டதனால், சந்தாதாரர்களுக்கும், அங்கத்தினர்களுக்கும் அளித்த அசௌகரியத்தை பொருட்படுத்தாமல் இருப்பார்கள் என்று நம்பப்படுகிறது.

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