

METKEM

Journal

PUBLICATION OF THE METTUR CHEMICAL & INDUSTRIAL CORP.

36
X8(E) 221, 048 MAR
MS. 2. 14
1788 52



OUR NEW CH

24 ft. 6 inches

METTUR CHEMICALS SERVE MYSORE INDUSTRIES

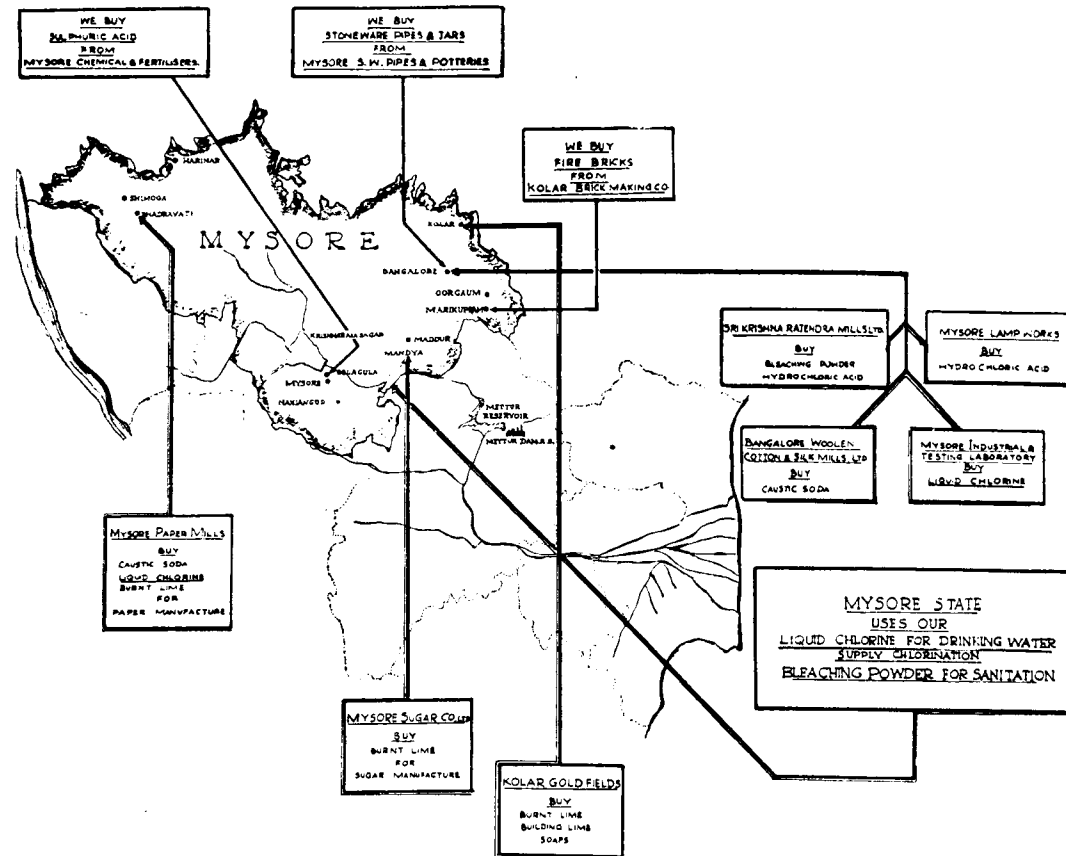
METTUR CHEMICALS

BUY FROM MYSORE

SULPHURIC ACID
FIRE BRICKS
STONEWARE PIPES
& TARS

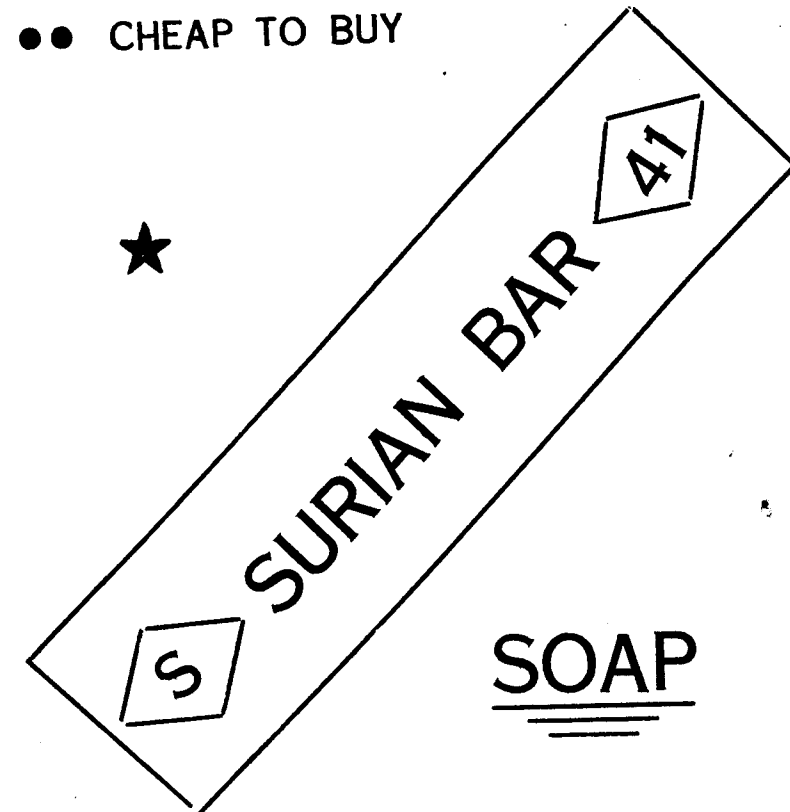
SELL MYSORE

CAUSTIC SODA
BLEACHING POWDER
LIQUID CHLORINE
HYDROCHLORIC ACID
BURNT LIME
BUILDING LIME
VANASPATHI
SOAPS



(See page 132)

- BEST FOR WASH
- CHEAP TO BUY



Manufactured by:
KUMARAN SOAP WORKS, ERODE.

SALES DEPOTS:

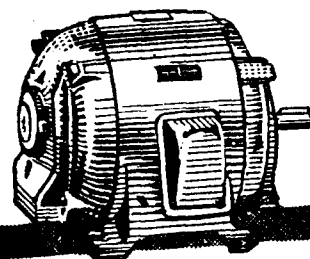
COIMBATORE
608, Rangai Gowda Street.

KARUR
Mettu Street.

TRICHY
200, Big Bazaar.

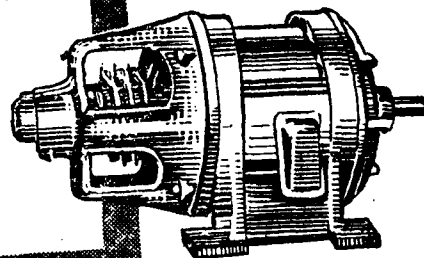


AMERICAN ELECTRIC MOTORS



SQUIRREL CAGE, DRIP-PROOF MOTORS—The most economical constant speed Induction Motor for Industrial use
(From 1 H. P. upto 20 H. P.)

WOUND ROTOR (SLIP-RING) MOTORS — Open Type—Heavy duty construction—High starting torque and low starting current.
(From 20 H.P. upto 50 H.P.)



ALLIS CHALMERS—one of the World's Big Three in the manufacture of Electrical Machinery.

ALLIS CHALMERS Motors are built for heavy duty jobs.

Motors of all types available to suit every type of drive.

THERE IS AN ALLIS CHALMERS MOTOR TO MEET EVERY MOTOR APPLICATION PROBLEM.

Easun Engineering Co. Ltd.,

5-7, SECOND LINE BEACH, MADRAS-1.

EZ 9.

Editorial Board:

S. RAMASWAMY
R. NATARAJAN
K. RAMANATH
T. M. KRISHNA RAO
P. B. SRIRANGAN
C. S. SRINIVASAN

Photos: K. Ramnath

R. PARTHASARATHY, Editor

Metkem

A MONTHLY JOURNAL DEVOTED TO THE HEAVY CHEMICAL INDUSTRY

ACHIEVEMENT OVER FOUR YEARS

IN the history of a country which has emerged from the thralldom of centuries, four years is but an insignificant period. Nevertheless, periodical stock-taking is as important to the well-being of a country as it is to that of a company. For our own national stock-taking no date is, probably, better suited than historic August 15.

Even if India had not had to undergo all the travail that preceded the birth of freedom and the anguish and suffering that followed, in its wake, her achievement would, still, have ranked high. As it is, her record is phenomenal.

Politically, India's prestige to-day is very high, indeed, amongst the counsels of the nations. Her stand on Korea and China, and more recently, on Japan has wrung unwilling admiration even from countries who could not be described as being "over-friendly" to us. In a world sharply divided into two hostile camps, it requires moral courage of the highest order to pursue an independent line of foreign policy. Unafraid, India is working out her own destiny. All credit to her Prime Minister for this.

In the matter of food—during 1950-51 in particular—India faced

a great crisis, but it was surmounted—thanks to the goodwill and co-operation of her own people and assistance from abroad.

From June 1950 onwards, calamity of one kind or another always seemed to overtake the country. There were floods in some parts and such a terrible drought struck other parts—practically the whole of the “rice bowl”—that we lost about five-and-a-half million tons of foodgrains. Still, we beat back famine. True, we beat it back with imports from abroad, but a desperate situation demanded drastic remedies. This does not, however, mean that we can lose sight of the goal of self-sufficiency; so all our energies should be bent on reaching it.

Even industrially speaking, India's record in 1950 is an improvement on that of 1949, as witness, for example, the adjoining table. Only in the case of textiles (and sugar, to a little extent,) is a decline seen, factors like strikes, etc., being chiefly responsible.

Industry.	Unit.	1949	1950
Coal	(lakh tons)	314.40	319.93
Steel	do	13.52	14.37
Yarn	(million lbs)	1,359.19	1,174.20
Cloth	(million yds)	3,904.03	3,650.91
Cement	(lakh tons)	21.02	26.12
Paper	(tons)	1,10,000.00	1,13,421.00
Sugar	(lakh tons)	10.44	10.36

The record for 1951 is stated to be even better. But the country has still enormous industrial leeway to make, and unless both Government and the people make a determined effort, we would very much lag behind the countries of the West.

A constructive piece of contribution by Government in 1950-51 was the setting up of the Planning Commission. Its draft Plan, as was mentioned in these columns, in the last issue of this Journal, visualises an “order in which justice, social, economic and political, shall inform all the institutions of the national life”.

Towards working out that order, all of us have a part, however humble, to play.

It is the aim of this article to examine some of the technical features of the Expansion Scheme. Before considering them, however, it will be just as well to re-state, here, that the basic objective of the scheme was to expand our plant capacity, to make it a self-sufficient unit. Planning had to be done to the last little detail to ensure that the programme of expansion might not interfere with present production. It was, also, necessary that the whole scheme should be executed within the shortest time-limit possible.

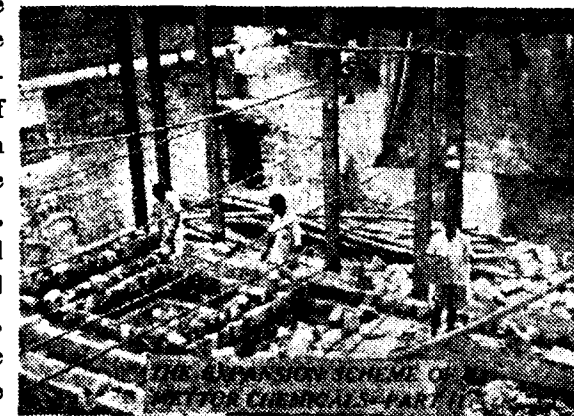
ADAPTATION

Before the actual field work was taken up, a careful study was made of the layout of the existing plant and godowns, with a view to adapting as much as possible of all the old structures and equipment.

Other factors that received the most careful consideration in our planning were: (1) Movement of raw materials and the finished product; (2) Ease of service connections (power, water and steam); (3) Maximum convenient floor-space; (4) Lighting; and (5) Ventilation.

Quite a number of drawings were prepared, and after the closest technical consultations, the most suitable layout was adopted.

* Mr. K. Rajagopal B. Sc., (Engg.) is Engineering Superintendent of the Mettur Chemical and Industrial Corporation, Limited.



The two sketches on P. 125 will give the reader an idea of “Before” and “After”, but it must be mentioned, here and now, that only such equipment as could not be fabricated, locally, was ordered out.

This point specially deserves to be mentioned for, as a result of devaluation, capital costs had gone up, at least by 30 percent.

We sent complete and detailed specifications of all the equipment to be released,

K. RAJAGOPAL*

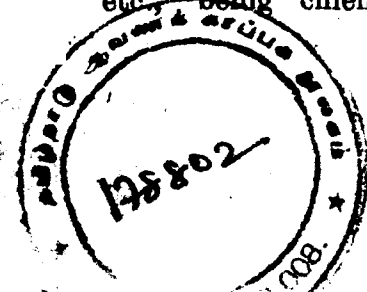
to our consultants, in the U. S., so that they could suitably adjust their ordering with manufacturers.

THREE DIVISIONS

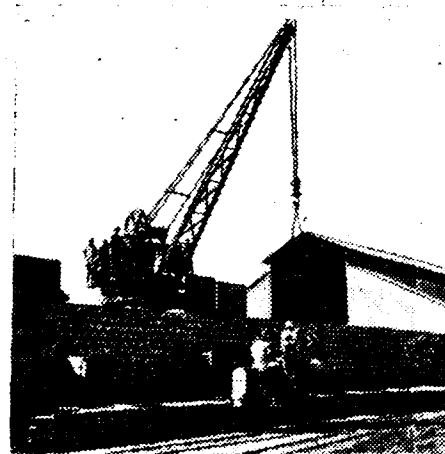
The scheme broadly falls into three subdivisions:

1. Remodelling of the existing plant
2. Installation — along with present units—of additional plant and equipment.
3. Installation of complete sets of new machinery.

Whilst the task of erecting and commissioning the new equipment was admittedly



one of great magnitude, the preliminary work of remodelling the existing plant



Transporting the Hooker cell units from yard to factory.

rooms was no less so; if anything, it proved to be one of even greater magnitude. It is, therefore, proposed to confine in this article to sub-divisions (1) and (2) above; sub-division (3) calls for treatment in a separate article by itself.

REMODELLING

Brine Purification Plant: The production of an ultimate 14 tons per day of caustic soda naturally meant consumption of thrice as much the salt, required previously. The storage and settling capacity of the brine room had, therefore, to be increased from 230 cubic metres to 480 cubic metres. We built three more R. C. tanks of rich cement-jelly aggregate, and sprayed the inside of these tanks with three coats of "line-tite" plastic

paint, to enable the tanks to withstand the corrosive action of brine.

We, also, replaced the two salt dissolving churners, each of 6 cu. metres with a saturator 20 ft. high and 9 ft. in diameter.

A bucket elevator was erected to dump the salt into the saturator from which, by forcing a column of water through the salt bed, raw brine could be obtained.

One of the two discarded churners was also converted into a sand filter to polish the purified brine before its entry into the main storage tank.

All along, chlorine was being dried by us in two different stations. These were now done away with, and only one central drying system was adopted.

At the end of the new drying towers, necessary connections and branches were



Dismantling work in the old chlorate plant.

provided so that chlorine could either be diverted to the various chlorine consuming sections or the entire output taken to the liquefaction system. Three plate-type towers with 14 plates in each tower of Doulton Stoneware (supplied by George Scott and Son, Ltd., London) were erected. To obtain maximum efficiency and economy in the consumption of sulphuric acid, we put up on the chlorine line, as it enters the drying towers, three units of coolers—two rubber-lined, glass tube coolers and one stone-ware cooler.

The drying section gets the acid supply from the Nash chlorine compressor in the chlorine liquefaction section at a concentration of about 90 per cent. The acid is circulated by means of "LaBour" acid pumps, counter-current to the flow of chlorine. The diluted acid is discharged from the third tower and the acid is

either sent to Sales or used for making alum.



Reinforcements for the new brine settling tanks.

Hooker Cell Room: The old liquid chlorine room—where it was decided to house the Hooker cells—was suitably altered. The big reinforced concrete covered cooling tank and the four supporting pillars were removed. The partitioning wall between the ammonia compressor and the liquid chlorine room was, also, pulled down.

Liquid Chlorine Room: It was proposed to erect the new liquid chlorine plant in the potassium chlorate plant room. Although the chlorate plant went out of production as long ago as 1946, all the R. C. structures like the crystallising vats, over-head tanks and supporting pillars, were still there and had now to be demolished. The task proved to be a tough one, but we, somehow, managed it, by requisitioning from our lime quarries, at Shankaridurg, their pneumatic drill.



Clearing concrete foundations with the pneumatic drill.

Evaporation Room: Several alterations had to be made in this room. The old steel structure supporting the caustic lye storage tanks was dismantled and the stanchion altered to suit the new equipment. Some pipe-lines had to be cleared from the space allotted to the new evaporators. (We did this, incidentally, without stopping the old set of evaporators).

Caustic Fusion Smelting Room: Formerly, the five-ton production of solid caustic was being achieved by smelting 50 per cent of the caustic liquor, in two smelting pots, each with a pre-smelter. The planned increase in production called for the duplication of equipment. Since the space available in the room would hardly serve our needs, an extension was made into the boiler house.

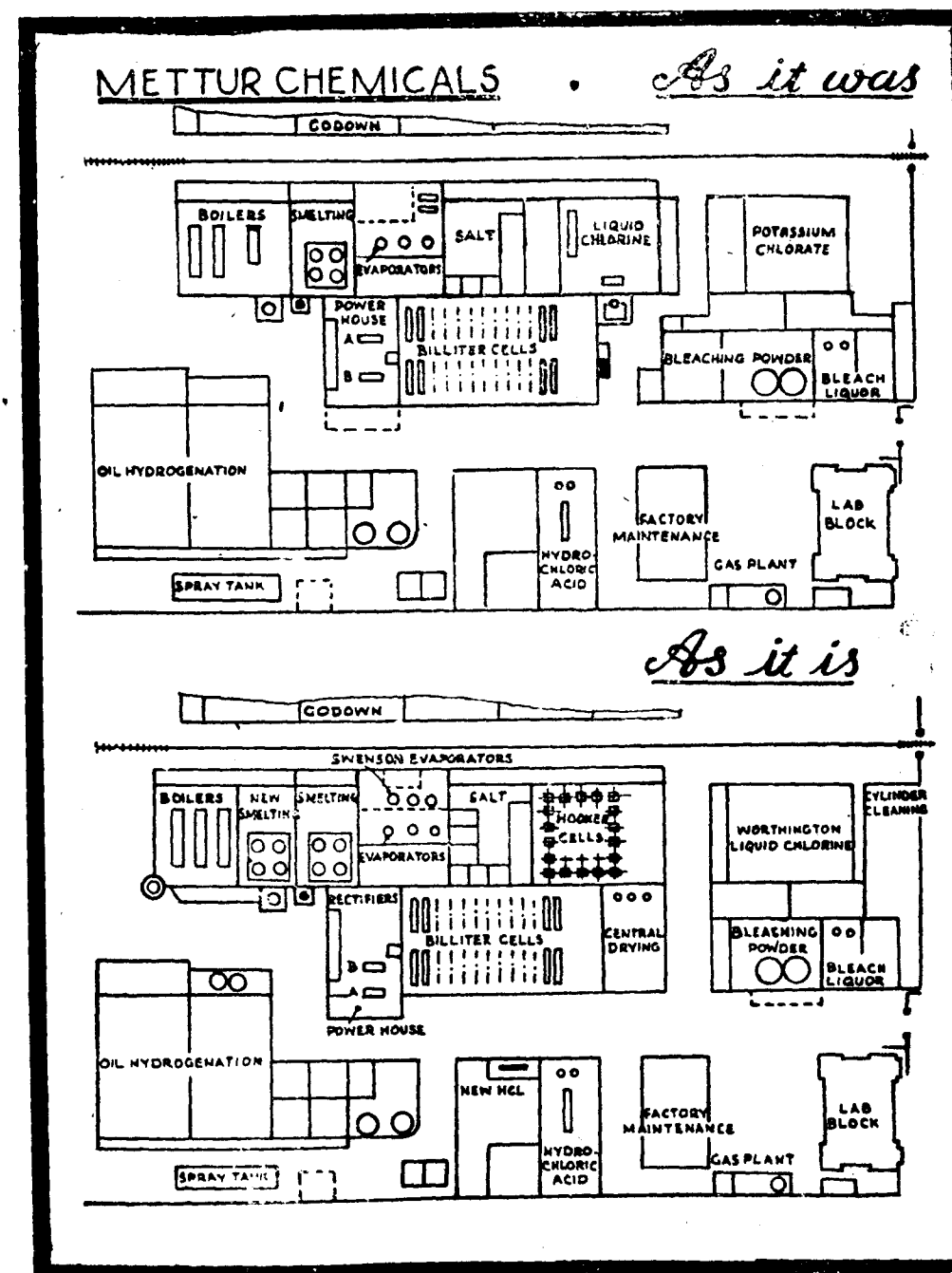
Boiler House: To improve the efficiency of the boilers, economisers were added. An additional Lancashire boiler capable of generating 8000 lbs. of steam was installed in view of the increased demand for steam which now went up

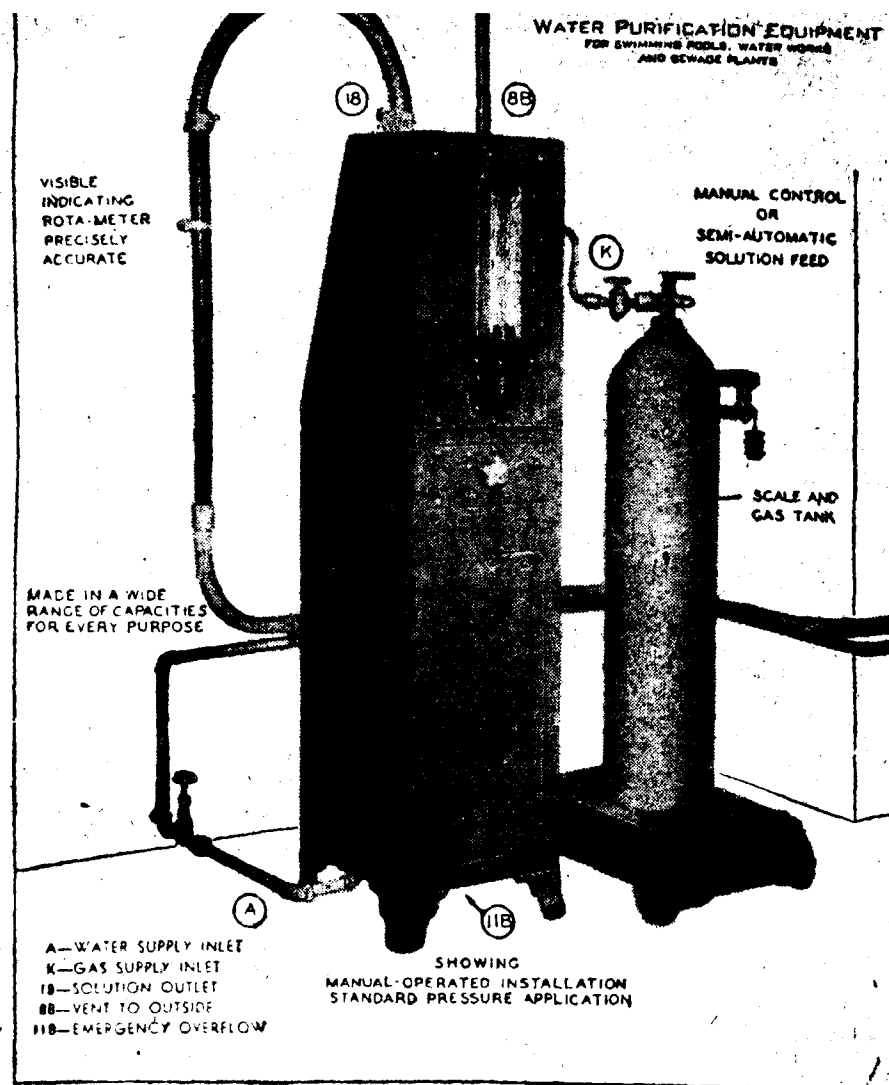
from about 3000 lbs. to about 7000 lbs. per hour for the evaporators alone. To handle the flue from these boilers a new chimney 125 ft. in height and 4½ ft. in diameter was erected. (See cover)

Power House: Arrangements were put through to work the two old M. G. sets independently, one for the Hooker Cells and the other for the Billiter Cells. The ultimate proposal is to work the cells at 8000 amps. by installing two units of 4000 amps. of Brown Boveri Mutators to work in parallel. On the recommendation, of the manufacturers, one of the M. G. sets was shifted to the front side of the power house.

Remodelling in one section went on side by side with the erection of equipment in the other sections.

As mentioned already, the idea was to put up additional plant and machinery without hampering production. And thanks to the unstinted co-operation of all concerned, erection work proceeded smoothly, production suffering only the barest, unavoidable minimum.





PROTECTED WATER SUPPLY

by

M. R. DORAISWAMI IYENGAR*

IT is superfluous at the present day to expatiate on the necessity for a plentiful supply of purified water for drinking and other purposes in towns and cities. Indeed, it is only, in recent years, that the influence of water supply on the health of a community has

come to be thoroughly understood. In western countries huge sums of money are spent by local authorities for ensuring a good and plentiful supply of pure drinking water. India has considerable headway to make in this direction. It may be an eye-opener to many that out of about

Mr. M. R. Doraiswamy Iyengar, B. E., is Municipal Engineer of the Tiruchi Municipality.

100 municipalities in this State only about 45 have protected water supply systems. Even these do not have very satisfactory systems, and, in a large number of cases, the supply is only partial or inadequate.

Generally the sources of water supply to a city are :

- (1) Spring Water.
- (2) Deep Well Water.
- (3) Up-land Water.
- (4) River Water.

NEED FOR PURIFICATION.

Before a source of supply is decided upon, two factors have to be taken into account—namely, quality and quantity. It is widely known that the quality of different waters varies greatly. Some are pleasant both to taste and smell and some are not. What is, perhaps, even more important, is that some are perfectly harmless, whilst others are likely to cause ill-health and may lead to the spread of epidemics. A number of samples have to be taken at different seasons of the year and analysed both chemically and bacteriologically. The common impurities met with are :

- (1) Dissolved organic matter.
- (2) Suspended organic matter.
- (3) Dissolved inorganic matter.
- (4) Suspended inorganic matter
- (5) Micro-organisms.

These impurities may be removed to a large extent by what is usually called the settling method and by ordinary sand filtration. No water is entirely free from bacteria of some description or other, but while some forms are harmless and may be ignored, others have to be rigidly excluded from any supply system. Bacteria of the intestinal type which are responsible for the spread of epidemics like cholera and typhoid should be completely de-

troyed by filtration and sterilization, before the water is let into the distribution system for consumption. Sterilization is effected by the addition of chlorine into water by means of special types of equipment or apparatus. The action of chlorine as a germicide is due to the release of nascent oxygen from unstable hypochlorous acid produced when chlorine is dissolved in water. After the administration of the proper dose, the reduction in the number of bacillus coli will be marked. A well-known brand is "Steralator" manufactured by Everson Manufacturing Corporation, Chicago.

The minimum quantity of water required per head per day is 25 gallons. This will make for ample provision for baths and flush-outs.

The quantity of water consumed varies with the seasons. Only during the summer months, when there is general scarcity of water at source, there is the greatest demand for water. The position will be aggravated if there is failure of monsoons during consecutive years, as has been our unfortunate experience here in the south in recent years. Even in the course of a single day there is great variation in the quantity of water consumed from hour to hour. Domestic consumption falls to zero during some hours of the night and is much above the mean during certain hours of the day, say, from 6 A. M. to 9 A. M. and 3 P. M. to 6 P. M.—being as much as two-and-a-half to three times the average consumption per hour. To supplement the quantity of water pumped during these hours, water is drawn from service reservoirs which are generally located in different high level areas of the city and which are usually filled during nights.

(Extracts from an address to the Rotary Club of Tiruchirapalli.)



THE review we did of Sir Ernest Growers's *Plain Words* has provoked wide-spread interest.

Among other letters we received there was one from Sir Archibald Nye, United Kingdom High Commissioner.

Says he :

"I have read your review of *Plain Words* with great interest. Curiously enough, I have recently been re-reading this pamphlet, and find it highly entertaining as well as instructive. It makes me realize how difficult a language English is and how many pitfalls surround us. But such a high standard of English has been attained by so many in this country that it is my sincere hope nothing will be done to allow the present standards to fall."

And this is what an I. A. S. says :

"Whilst in the U. K. I came across this book and finding it worthwhile to possess a copy of my own, I really did annex one. Back in Delhi I handed it over to the Principal of the I. A. S. School, suggesting to him

the desirability of Indian Civil Servants becoming familiar with its contents. He ordered 12 books on the spot and they are all now in the Metcalfe Library. Every I. A. S. probationer has to read it at least once before he leaves the school... I am so glad you hold identical views on the superlative merits of *Plain Words*."

So that's that!

H. H. or the Etymology of Indian names :

The man of the month is K. Rajagopal, our Engg. Superintendent, who, as has been reported elsewhere, in this issue, has been elected a Vice-Chairman of the Indian Section of the Electro-chemical Society, Inc. An engineering graduate of the Benares Hindu University, he has been with MCIC right from 1941—



K. Rajagopal in which year, its foundations were well and truly laid. In 1947, along with S. Ramaswamy, Production Superintendent, he was sent to the States and Europe for training.

"Engineering is a great profession," says Herbert Hoover, former President of the United States and himself a mining engineer of rare distinction, in a recent article. "There is the fascination of watching a figment of the imagination emerge through the aid of science to a plan on paper. Then it moves to realization in stone or metal or energy."

Rajagopal is among those few who savour, in full, all the romance of this "great profession". For his personal contribution to our Expansion Programme he deserves an out-size in bouquets. More of a doer than a talker, he is never more happy than when he is hard at work. Around the days our new Hooker cell installation was being switched into commission Rajagopal was a sight, but not for tired eyes. Pale, care-worn, and bearded, he looked somewhat like a minor prophet and a Marxist with a touch of dyspepsia, rolled into one! Nevertheless, you could say from his eyes that he was supremely happy.

An interesting anecdote about Rajagopal once went the rounds in Mettur, thanks to the currency given to it by R. V. Ramani, (Director, Seshasayee Bros, Ltd.) a raconteur of brilliance.

It seems in one of the cables that went from here to London round about the time Rajagopal went abroad, his name had been spelt as two words "Raja" and "Gopal". Small wonder, therefore, his uninitiated hosts thought that no less a person than His Highness the Raja of Gopal was coming! If there could be a

Nawab of Bhopal, it stood positively to reason, there should be a Raja of Gopal. Perfectly logical, wasn't it?

Short of spreading the red carpet, the hosts would appear to have done everything else. Rajagopal had a man-size job disillusioning them, but it was grand fun, particularly the speculation about the number of his wives, so long as it lasted.

Budding Eleanor Powell : Talking of Rajagopal (and his "wives") we must say a word or two about his five-year old darling of a daughter, Vasanta, who some

months ago, created a local sensation. It was the School Annual Day and the girls had just concluded their choralsinging. The child was so moved by the music that she ran to the rostrum and treated the audience to a



Vasanta

brief but delightful spell of impromptu dancing. In this picture, the *artiste* is seen in one of her characteristic poses.

Bye-bye, Rao : We said farewell to Mr. T. V. Rao, our Soap Expert at a small function, on August 18. Mr. K.K. Raman, Director, Managing Agents, Messrs. C. S. Srinivasan and T. S. Subba Rao spoke eulogisingly of Rao's services to the

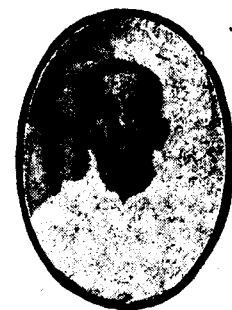
Company. All speakers stressed Rao's single-minded devotion to duty, his passion for "technica" reading, his persistent endeavour to give our customers a better and a still better product and his supreme loyalty.



T. V. Rao

Mr. Rao replied suitably.

Here's METKEM wishing a genial and a most helpful member of its Editorial Board all that's best—only lots more.



P. R. Parthasarathy

the bereaved family.

Obituary: It is with feelings of the deepest regret we announce the sad and untimely demise of P. R. Parthasarathy one of our assistant time-keepers. He passed away after a brief illness on August 23. We extend our sincere sympathy to his young wife and other members of

R. P.

How much are you worth?

A man may be worth Rs. 30,000 a year in his business capacity, but this capacity is dependent upon a physical body worth about Rs. 3—12—0.

Chemically speaking, it contains 65 per cent oxygen, 18 per cent carbon, 3 per cent nitrogen, 2 per cent calcium, 1 per cent phosphorus and 1 per cent copper zinc and what not.

It is a wonderful machine, of course, with spare parts—namely a spare eye, a spare ear and several spare fingers and so on—which is partly why he survives.

METKEM News

True Prophets: A short but loud earth tremor which occurred in Mettur on August 2, at 3. 12 A. M. confirmed the worst fears of Mr. B. P. Radhakrishna, Secretary of the Mysore Geologists' Association, who about a fortnight earlier said at their annual meeting, here, that earth tremors were likely to occur in the Mettur region on account of irregular formations in the substrata.

Science and Religion: At a meeting arranged on Aug. 10, Swami Vrajeshwarananda of the Ramakrishna Mutt answered questions put to him by members of our staff. Following this, Swami Desikananda of the Salem Mutt gave a talk, in the course of which, he traced the growth and development of relations between science and religion through succeeding ages.

Employer-Employee Relations: "Employees in a large industrial undertaking were like members of a joint family and even as love governed their mutual relationships, so should love govern the lives of the members of an industrial community," observed, Mr. K. Narasimha Iyengar, prominent Salem advocate, in the course of an address on "Labour and Love," at a meeting of our workers and staff held on Aug. 12, 1951.

Mr. K. K. Raman presided.

Continuing, the speaker pointed out that the old concept of master and servant was fast becoming outmoded and that in the India of today employer and employee alike had each their allotted duties and responsibilities to fulfil. Mahatma Gandhi had handed over to the nation one great weapon—*Ahimsa*; he himself had successfully used it against the might of an empire, Mr. Iyengar stated. As love conquered all, labour should eschew hate and violence, the speaker concluded.

Mr. K. K. Raman said that if only labour also owned some shares in industry labour would be able to appreciate some of management's problems.

Mr. C. S. Srinivasan, Secretary, Staff Association, proposed a vote of thanks.

Mysore Rajpramukh's Visit: We had the proud privilege of welcoming to our factory on August 15, H. H. the Rajpramukh of Mysore. The Rajpramukh was accompanied by the Maharani, members of his family and personal staff. In the unavoidable absence of Mr. K. K. Raman, Mr. R. Natarajan, Secretary, did the honours as host and showed the visitors round the various sections of the factory.

The Rajpramukh who showed great interest in the working of the factory

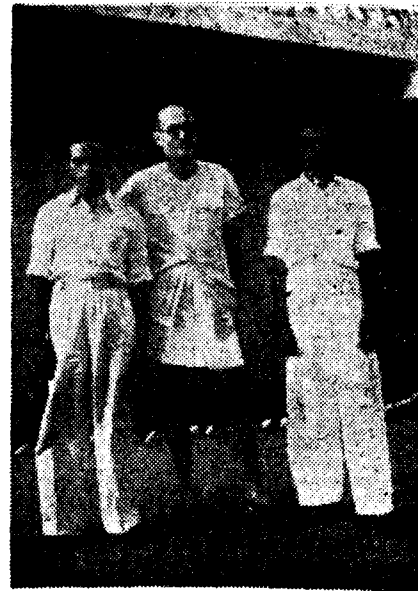
expressed in particular, his appreciation of a chart in our show-room, which brought out the inter-dependence of Mysore and Mettur. (Mysore takes from MCIC its requirements of caustic soda, liquid chlorine, bleaching powder and lime for its soap, paper, textile and other industries, and supplies us in turn our requirements of stone-ware pipes and jars, electrical goods, fire-bricks, sulphuric acid, etc.) (See chart on second cover.)

"India expects every man to don his dhoti:" Addressing the Society of Technologists on August 15, Dr. E.H. Ehrenfelds, Head of the Department of Anthropology, University of Madras, said that European costume was most ill-suited to Indian climate and that so far as personal preferences were concerned, he "fell" for the South Indian dhoti and upper cloth.

Mr. K. Rajagopal, Engineering Superintendent, presided.

One inescapable conclusion that forced itself on the student of anthropology, the

professor said, was that the peoples of the world were bound by the closest cultural ties.



N. Kalyanam, Dr. Ehrenfelds and K. Rajagopal

Mr. P. N. Subramanian, Secretary, proposed a vote of thanks.

Way to Celebrate Festivals: Prime Minister Nehru suggested to members of Parliament recently that the best way to celebrate a festival was to work harder in the service of the nation.

He was replying to Mr. H. V. Kamath who had urged that the House should not sit on *Ganesh Chaturthi* day.

Asked whether the same principle would apply to all holidays, the Prime Minister said: "It might have an upsetting effect on many people's minds, but I should like the gradual adoption of that principle, so that, ultimately, it would apply to most holidays."



Cricket: In a match played at Mettur, on August 5, against M. S. V. Thatham's Cricket Club, Srirangam, we won by 109 runs (202 for 8 and declared). An unbeaten century by R. Murugayya, whose 115 included 18 delightful fours, was one feature of this match. Its other features were the bowling form displayed by fifteen-year-old Nandakumar and his stolid fifty-minute partnership with Krishnakumar, in a heroic attempt to save the match for his side. Nandakumar returned an impressive bowling analysis of 3 for 21.

Mettur Chemicals XII 202 for 8 declared. (Murugayya 115 not out, Raja Ramalingam 3 for 59, Nandakumar 3 for 21).

Thatham's XII 93 (R. T. Parthasarathy, 39, Murugayya 3 for 21 R. G. Raghavan 2 for 36 T. D. K. Swamy 2 for 10).

In a practice match played on August 19, R. G. Raghavan's XI 94 (Kolandaishami 23, T. S. Subbarao 3 for 5, K. Ganesh 2 for 9 and R. Natarajan 2 for 11) lost to Subba Rao's XI 100 (R. Narain 51, K. R. V. Raman 3 for 28, N. Kalyanam 2 for 10 and V. Muthuswamy 2 for 11).

Our next match was played at Salem against the Salem Cricket Club. We lost the match by a narrow margin.

R. T. Parthasarathy who, besides being the top-scorer with his 46, also, claimed

seven of our wickets for only 18 runs. Our captain R. G. Raghavan and vice-captain, T. D. Krishnaswamy were engaged in a

Tennikoit: The "threatened" doubles tournament has been dropped for a most singular reason. In a circular to players,



Mettur Chemicals that XII VS. M. S. V. Thatham's XII

fourth-wicket partnership which yielded 69 runs in about as many minutes.

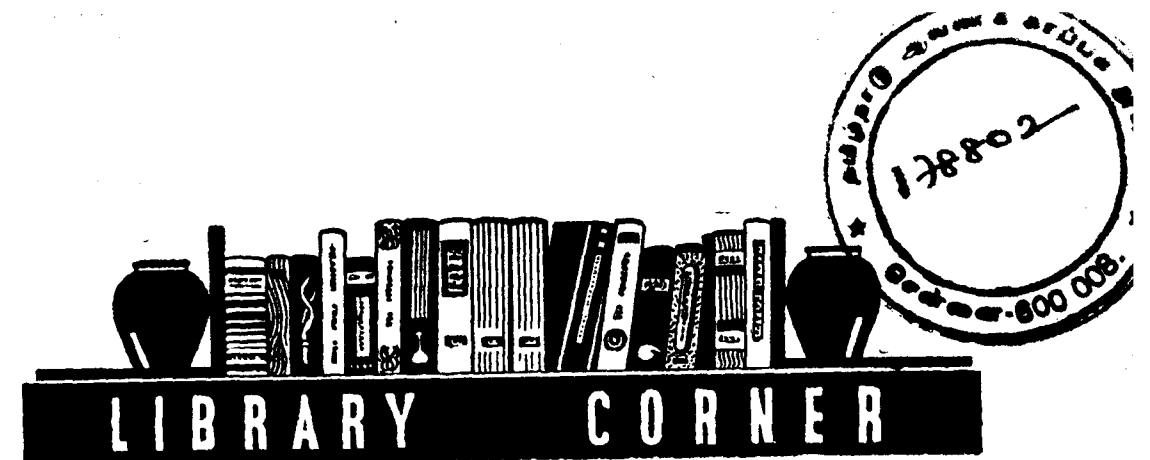
Salem Cricket Club 112: (R. T. Parthasarathy 46. Raja Ramalingam 32, K. Ganesh 4 for 11. T. D. K. Swamy 2 for 42).

Mettur Chemicals XI: 103 (R. G. Raghavan 29, T. D. K. Swami 29, R. T. Parthasarathy 7 for 18 Raja Ramalingam 2 for 27).

Tennis: In a friendly doubles match played at Mettur, on August 5, M. S. V. Thatham and S. R. V. Thatham of Srirangam beat our players, T.V. Krishnamurthi and N. Sunderesan (11-9). S. R. V. Thatham's sharp finishes at the net and M. S. V. Thatham's stubborn, defensive game gave them their not-so-easy victory over our players.

the Staff Association called for entries to be sent to the Sports Member by a certain date. As, surprisingly enough, only three entries were received by the deadline fixed, the Association decided to postpone the tournament to November, to be "taken" along with the other Annual Day tournaments. This decision was not well-received, but would-be competitors were told gently but firmly that their initials on the Circular, whatever they might connote did not constitute "entries" in the strict sense of the term. Apparently they were satisfied—or so we like to think.

The popularity of the game, however, remains unabated.



HIGHER BUSINESS CORRESPONDENCE: by Reginald Skelton—Sir Isaac Pitman and Sons, Limited, London Price 10 sh.

SO difficult, indeed, is the art of business letter-writing and so many are the pitfalls that beset the path of the unwary that we do not propose to make any apology for returning, in this issue, to the assessment of the merits of yet another book on correspondence.

Mr. Reginald Skelton, the author of *Higher Business Correspondence*, is a businessman, not a professor of English, but still he writes with the facile assurance of a Quiller-Couch or a Fowler. He hits out at jargon, and throws in, for good measure, a chapter or two on grammar and composition.

The book was first published in 1937, but as the principles that its author enunciated, then, still hold good, it is not at all surprising that he has had to make only "slight verbal alterations here and there", in this re-issue.

Mr. Skelton begins by analysing a typical letter and goes on to deal with such fundamental considerations, as accuracy, appropriateness, brevity, clarity, courtesy, persuasiveness and tact.

Mr. Skelton's chapter on "Circulars" makes both pleasant and profitable reading.

He mentions two serious difficulties with which any circular will normally have to contend. In the first place, a circular is uninvited and correspondingly an unwelcome arrival. The recipient's first impulse is to throw it straight into the WPB.

Sir Alan Herbert of *Punch* spoke, for all of us, when he wrote:

*'It's a pity, but I can't be bothered
And I won't be badgered about ...
Perhaps, it's Nature's law—
The more that people jaw
The more I feel like contradicting flat!'*

Secondly, as a circular is sent out to all sorts and kinds of people, it is almost totally impossible to invest it with that personal touch, which should make all the difference between a friendly letter and a formal communication.

These two basic handicaps of circulars can, to some extent, be overcome by the observance of the rules that the author suggests. This chapter includes, incidentally, the delicious story of a dear old lady who received a circular from an enterprising London draper inviting her to buy "undies calculated to make a bishop sit up and take notice"! Which only shows that when the personal note is carried too

far, a circular might border on the impertinent.

In Appendix III, at least two Indian names have been wrongly spelt, 'Ambodkar' for 'Ambedkar' and 'Patri' for 'Patro'. It is hoped that the author will correct these two mistakes in future editions of this book.

Higher Business Correspondence is one of the finest books of its kind, and should be read and re-read, until its leaves get dog-eared and fall apart. Then one should buy another copy and start all over again!

—R. P.

INDIAN STANDARDS INSTITUTION (ISI): Fourth Annual Report—19, University Road, Delhi 8. Price Rs. 2/-.

AN exhaustive account of the set-up and activities of the ISI for the year April 1950—March 1951 is given in this volume. Reported in detail here is the progress achieved during the year, entailing the formation of 260 odd technical committees and deploying some 2,500 experts representing the country's divergent interests of trade, commerce, industry, technology and the consuming public. It is no mean achievement that no fewer than 179 standards have been published by the Institution up to March 1951, whilst several more are either in the press or being given the final touches.

The implementation of the Standards drawn up by the ISI is a matter that deserves the serious attention of the consuming public, and a proper lead from the various purchasing departments of the Central and the State Governments should, certainly, prove to be helpful.

The liaison that exists as present between the ISI and various government laboratories and industrial establishments is, indeed, commendable and points the way for development. Contacts with international and other similar institutions will help the ISI in its further growth.

CHEMISTRY IN RELATION TO FIRE RISK AND FIRE EXTINCTION: A. M. Cameron, B. Sc., F. R. I. C. Hon. M. I. Fire E. - Sir Isaac Pitman and Sons, Ltd., London. 10 sh. 6 d.

ESSENTIALLY meant for the use of prospective fire engineers, this book is bound to be of interest to others as well. It contains a world of information on the usual causes of fires and explosions, methods of fire extinction and fire-proofing.

In the first three chapters are sought to be explained the physico-chemical aspects of combustion and the nature of flame and of gases.

Next, the several kinds of materials, which are involved in fires, are described in the order of gases, liquids and solids. Safe methods for storing and handling them are, also, suggested.

The two chapters dealing with spontaneous combustion shed illuminating sidelights on vegetable matter like hay-stocks, molasses, oil-cakes and coal.

The book concludes with useful notes on storage, fire-extinction and fire-proofing.

Invaluable for all those engaged in occupations involving fire hazards, the book should find a place in the libraries of all chemical works. —N. S.

CHEMICAL BRIEFS

Electro-chemical Society, Inc: At the first annual meeting of the India Section of the Electro-chemical Society, Inc., held in Bangalore on August 2, 1951, the following officebearers were elected.

Dr. B. K. Ram Prasad ..	Chairman
Mr. K. Rajagopal & ..	Vice-Chairmen
Mr. J. Balachandra ..	
Dr. T. L. Ramachar ..	Secretary-Treasurer

"Power development and Electro-chemical industries in India" was the subject of an interesting lecture by Dr. Ram-Prasad. The lecturer stated that abundant water power was available in India and that the highest priority should be given to the development of hydro-power and for the exploitation of all the available mineral and other resources, by using the power thus obtained. He, also, indicated the lines on which new electro-chemical industries could develop and suggested methods for the expansion of existing ones.

Mr. K. Rajagopal, Engineering Superintendent, MCIC, then gave an account of the development of the alkali-chlorine industry at Mettur. He traced the beginnings of the venture to the year 1936, in which year, were completed both the construction of the Dam and the power station at Mettur. The Government of Madras had come forward with an offer to

supply power at cheap rates to industries started in the vicinity of Mettur, he stated. He, also, recalled the several difficulties that our industry had had to face with regard to the formation of capital, supply of raw materials, etc., in the early days.

Continuing, the speaker brought out how, with technical assistance from outside "shut off" to our industry on account of conditions created by the war, opportunities arose for our own "boys" and how they had made full use of them.

Concluding, the lecturer put forward a powerful plea in favour of scientific and technological institutions already functioning in the country, and where engineering and chemical engineering instruction was given.

He said: "It is futile to send our students to technological institutions abroad. Where, of course, some specialised courses were available only in other countries and not in India, and where technical "know-how" had necessarily to be obtained in foreign factories justification probably existed for our boys being sent out. Otherwise it was a drain on the country's slender resources."

New Specification for Salt: The Government of India have decided not to release for human consumption in 1951 any salt, if its sodium chloride content was below 92 per cent.

All salt of a lower degree of purity will be permitted only for industrial purposes, after it has been denatured.

Government have, also, decided to raise the sodium chloride content in edible salt gradually to 94 per cent in 1952 and 96 per cent in 1953.

Sindri Fertilizer Factory: The Sindri Fertilizer Factory, considered to be Asia's largest, is all set for production. It is the first big State-owned enterprise, since Independence, to come to fruition.

Sindri has a production target of 1,000 tons of ammonium sulphate daily or about 350,000 tons a year. This annual target is expected to be reached during 1953. The present demand for artificial fertilizers in the country is in the neighbourhood of 400,000 tons annually, but it is expected to multiply fast, in the next few years, as the Indian farmer gradually awakens to the advantages of modern methods in agriculture. It is estimated that Sindri's maximum capacity would meet only one-seventh of the ultimate demand — between two and three million tons annually.

Copper Sulphate Industry: The Government of India have accepted the recommendation of the Tariff Board that the copper sulphate industry does not need protection by way of customs duty at present.

According to a Press Note issued by the Ministry of Commerce and Industry, the recommendation of the Tariff Board was based on its finding that the fair selling price of indigenous copper sulphate was lower than the landed cost, without the duty of imported copper sulphate.

Government have also decided to bring copper oxide under export control to regulate exports, and ensure adequate supplies to the domestic copper sulphate and other industries which can use this material to supplement the limited resources of copper scrap.

Salt Analytical Laboratory: The Salt Analytical Laboratory, installed in the office of the Assistant Controller of Salt, Tuticorin, was opened on August 25 by Mr. Callanons, Assistant Controller of Salt. The laboratory was donated by the Tuticorin Salt Manufacturers and Merchants' Association.

Mr. K. N. L. Lakshmanan Chettiar, Secretary of the Association, said that this was the first instance in India of salt manufacturers establishing a laboratory at their own cost for the common good.

Requesting the Department to accept the gift and utilise it in educating manufacturers, Mr. Chettiar said the Department should use the laboratory in such a way as not to affect the interests of manufacturers by hindering production or distribution.

Accepting the gift Mr. Callanons explained the need to improve the quality of salt. He was happy to note that the manufacturers agreed with the Department on the need to improve the quality of salt. Though Government would be meeting the running expenses of the laboratory, he said, no charges would be levied here for testing the salt manufactured.

Production of Neem Oil: The Planning Commission has under consideration a scheme for the production and utilisation of neem oil, at an estimated initial cost of Rs. 10,00,000.

The scheme, stated to be self-supporting, will cost Rs. 13,00,000 every year by way of recurring expenditure, while an amount a little over that, is expected as proceeds of the sale of the oil and its products.

Under the scheme, 11 units, each comprising seven neem-seed pressing centres and a soap factory will be established in the various States.

The scheme is expected to be approved by the Commission.

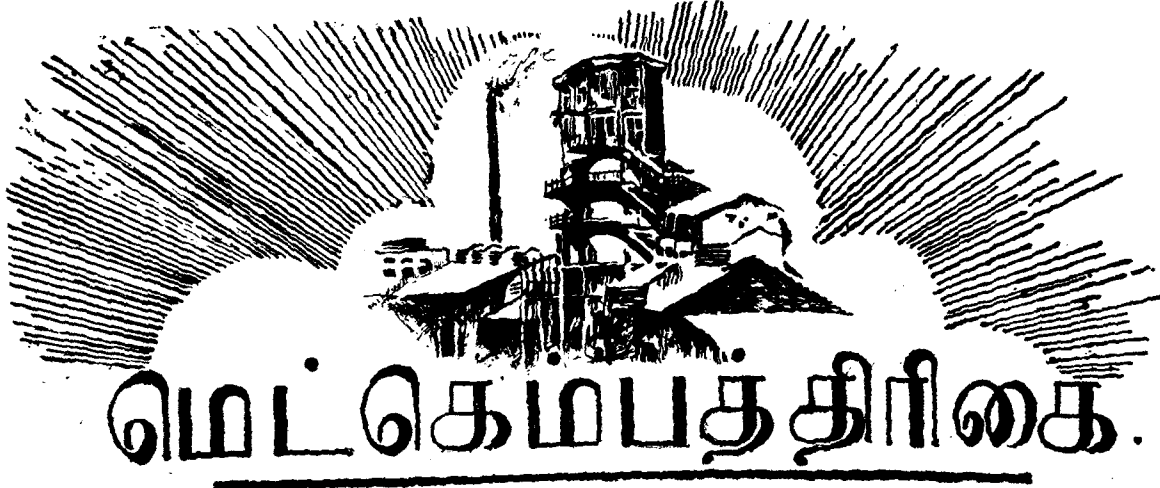
The neem oil, thus produced, will divert edible oils, now used for the manufacture of washing and toilet soaps for other uses. In the initial period, Government will itself make use of the oil at the eleven soap factories to be established for the manufacture of washing soaps.

According to a recent survey, about 21,270 tons of seeds are being collected now in Madras—the actual scope is somewhere in the neighbourhood of 80,000 tons.

Madras produces about 1,680 tons of neem oil every year, which could be increased to about 5,000 tons a year.

Expansion Programme in the Private sector: The following is a table of targets in the Heavy chemicals and allied industries.

Name of Industry	Units	1950-51		1955-56 (Estimated)	
		Installed capacity	Production (1950)	Installed capacity	Production
Aluminium (Primary)	tons	4,000	3,600	25,000	20,000
Fertilisers:					
(i) Superphosphate	,000 tons	1,23	52	2,16	1,79
(ii) Ammonium Sulphate	,000 tons	74	47	1,29	1,00
Glass and Glassware:					
(i) Hollow-ware	,000 tons	211	81	2,32	1,74
(ii) Sheet-glass	,000 tons	12	5	36	27
(iii) Bangles	,000 tons	35	16	35	17
Heavy Chemicals:					
(i) Sulphuric Acid	,000 tons	1,50	1,02	2,30	1,80
(ii) Soda Ash	,000 tons	54	44	86	78
(iii) Caustic Soda	,000 tons	19	11	33	29
Matches:	,000 cases	7,06	5,23	7,66	6,90
Paper and Paper board:	,000 tons	1,40	1,09	2,12	1,65
Salt:		55,613 (acres)	26,22 ('000 tons)	65,200 (acres)	30,75 ('000 tons)
Soap:	,000 tons	2,69	1,02	2,88	2,70
Alcohol:					
(i) Power	,000 bulk gals	128,68	44,97	2,11,18	19,006
(ii) Rectified Spirit	,000 bulk	29,49	34,36	29,49	26,54



நமது தொழில்துறை வளர்ச்சி

அன்னியர் உதவி

திருவோக - சீதாராம்

தொழில் புரிதல் என்பதுதான் மானி டத்தின் சிறப்பு. தொழிலின் நிச் சோம்பியிருக்கும் தனி மனிதன் வாழத் தகுதியற்றவன். இந்த இயற்கை நியதி தனி மனிதனுக்கு மட்டுமேயன்றி சமூகத்திற்கும் பொருந்தும்.

இன்றைய உலகில் ஒரு நாட்டின் நாகரிகம் என்பது அதன் தொழில் துறை வளர்ச்சியையும் வெற்றியையும் அடிப்படையாகக் கொண்டதாகும். உலக அரசியல் அரங்கில் இன்று ஆதிக்கம் பெற்றிருப்பவர்கள், அந்தத் தகுதியையோ வலிமையையோ படைத்திருப்பதற்கு அவர்களின் தொழில் துறை வெற்றியே காரணமென்பதைச் சொல்லவேண்டியதில்லை.

அகில உலக அடிப்படையிலுள்ள சமாதானமாக மனிதன் வாழமுடியாது என்ற பேருண்மை கடந்த இரண்டு உலகப் பெரும் போர்களாலும் புலனாகி விட்ட பின்னர், பிற்போக்கு நாடுகளின் தொழில் வளத்தைப் பெருக்கவேண்டியது தங்கள் கடமை என்பதை வல்லரசுகள் நன்கு உணர்ந்து வருகின்றன.

ஐ. நா. ஸ்தாபனத்தார் உலக அமைதிக்குக் கென்று வகுத்துள்ள திட்டங்களில் ஒன்றுதான் "தொழில் துறையில் பிற்பட்டிருக்கும் நாடுகள் முன்னேற, முற்போக்கு நாடுகளின் மூலதனமும் தொழில் நுட்பக் கலைஞர்களும் உதவப் படுவேண்டும்" என்பது.

உலகத் தொழில் வளர்ச்சி அட்டவணையில் இந்தியா எட்டாவது வரிசையில் நின்ற போதிலும், நமது மண் பரப்புகும் மக்கள் எண்ணிக்கைக்கும் ஏற்ற அளவு நமது தொழில்துறை வளம் பெற்றிருக்கவில்லை என்பதே உண்மை.

பொருளாதார அரசியல் ஒப்பந்தங்களினாலும், ஐக்கிய நாடுகளின் ஸ்தானத்தில் நமக்கு உள்ள அங்கத்தினாலும் நமது தேசியப் புனரமைப்புத் திட்டங்களுக்கு அமெரிக்கா, இங்கிலாந்து போன்ற நாடுகளின் மூலதனமும் தொழில் நுட்பக் கலைஞர் உதவியும் கிடைக்கப்பெறும் உரிமை படைத்திருக்கிறோம்.

ஆனால், நாம் நமது தொழில் வளர்ச்சிக்கு அன்னிய உதவியை எதிர்பார்ப்பதிலும், அதனைப் பயன் படுத்துவதிலும் பல்வேறு சிக்கல்களை சமாளிக்க வேண்டியவர்களாக இருக்கிறோம். ஏனெனில் உதவியென்பது கைம்மாறுகருதாத உதவியாக இருக்கமுடியாது. வெளிப்படையாகவும், மறைமுகமாகவும் பல நிபந்தனைகள் கொண்ட அன்னிய உதவி தான் நாம் பெறவேண்டியிருக்கிறது. எனவே நமது "உதவிபெறும் கொள்கையில்" தெளிந்த ஞானம் நமக்கு இருந்தாலன்றி நமது அரசியல் விடுதலை தவறிக் கொண்டு, அன்னியர்களின் பொருளாதார சக்திக்கு அடிமையாகிவிடும் அபாயம் இருக்கிறது. இதைக் கருத்தில் கொண்டு நமது தொழில் வளர்ச்சியைப் பற்றி சிந்திக்கலாம்.

தொழில் என்னும் போது நமது அடிப்படைத் தேவைகள் பல உண்டு. 1. மூலப் பொருள் 2. ஆள் பலம் 3. தொழில் நுட்பத் திறமை 4. மூலதனப் பொருள் 5. மூலதனம். இவற்றை நான் வரிசைப் படுத்தி யிருப்பதில் குறிப்பான கருத்து ஒன்றும் இல்லை மேலே கண்ட ஐந்தும் எந்த வரிசைக் கிரமத்திலேனும் அத்தனையும் நமக்குத் தேவை. முதலில் இங்கு தொழில் நுட்பத்திறமை பற்றி எடுத்துக்கொள்ளலாம்.

அன்னிய உதவியை நாம் எதிர் பார்ப்பதில் தொழில் நுட்பத் திறமை முதன்மையானது. ஏனென்றால் விஞ்ஞான வெற்றியைப் பெரிதும் சார்ந்திருக்கும் இந்த நாளை தொழில் வளர்ச்சிக்கு, விஞ்ஞானத் துறையில் முன்னேறியிருக்கும் நாடுகளின் உதவி இன்றியமையாததாக இருக்கிறது.

அன்னிய நிபுணர்களிடம் நமது தேவைகளுக்கு ஏற்ற ஆலோசனைகள் கேட்கும்போது இன்றியமையாத சில "வர்த்தக அடிமைத்தனம்" நம்மை வந்தடைகிறது. உதாரணமாக ஒரு பெரிய திட்டத்தை வகுக்க முயலும்போது அமெரிக்க நிபுணர்களை அழைக்க வேண்டியிருக்கிறதென்று வைத்துக் கொள்வோம். அமெரிக்க நிபுணர் மகிழ்ச்சியுடன் திட்டம் வகுத்துக் கொடுக்கிறார். பத்து வருடங்களில் அதை நிறைவேற்றுவதன் மூலம் நாம் பெரும் பயன் அய்தலாபென்பதை உணர்

கிறோம். ஆனால் அமெரிக்க நிபுணரின் திட்டத்தை நிறைவேற்ற, அவர் குறிப்பிடும் அன்னிய உற்பத்தியாளர் ஒருவர் அல்லது பலர் தனித்தனியே தயாரிக்கும் யந்திரங்களையோ அல்லது அவற்றின் பாகத்தையோ தான் நாம் வாங்கவேண்டிய நிலைக்கு ஆளாகிறோம். இதன் பயன் என்னவாகுமென்பதை விளக்க வேண்டியதில்லை. திட்டம் முடியும் வரையிலும் சரி அதற்குப் பின்னரும் சரி, நமது புதிய தொழில் துறைக்கு வேண்டிய ஆதார பாகங்கள் அல்லது கருவிகளுக்கு நிரந்தரமாக அன்னியர்கையை எதிர்பார்க்க வேண்டியிருக்கிறது. எனவே தொழில் நுட்பக்கலைஞர் உதவி என்பது அன்னிய வர்த்தகர்களின் பால் நமது தேவைக்கு ஏங்கும் நிலையும் கூடவே ஏற்பட்டுக்கொண்டிருக்கிறது. தொழில் நுட்ப உதவியைப் பெறும் போது, அந்த உதவியைப் பயன்படுத்திக்கொள்ள எவ்வளவு தூரம் நாம் நமது சொந்த சக்தியை நம்பலாம் என்பதையே முதலில் கவனிக்கவேண்டியது அவசியமாகிறது. இது சாத்யமில்லாத போது இந்தத் திட்டத்தையே கைவிடலாம் என்று கருதவேண்டி ஏற்படலாம். இதைவிட நமது தொழில் திட்டங்களைப்பற்றிச் சிந்திக்கும்போதே முதலில் நமது தேசிய சக்திகளைப் பயன்படுத்திக் கொள்வதையே அடிப்படையாகக் கொள்ளவேண்டும்.



For Quality & Durability

INSIST ON

ELPHINSTONE MILLS FABRICS

SAREES
COATINGS
DRILL

DHOTIES
POPLINS
SHEETING

ETC., ETC.

The Elphinstone Spg. & Wvg. Mills Co. Ltd.

Agents: Messrs. Chidambaram Mulraj Co., Ltd.

KAMANI CHAMBERS: — — 32, NICOL ROAD,
BALLARD ESTATE, BOMBAY

Telephones: MILL 60451

OFFICE: 3020L & 27773

Telegrams: ELMILCOL

You have any chemical or chemical engineering problems do let us know.

We may be in position to solve them, for we have, behind us, a wealth of experience, as consultants on plant layout, equipment design, and product formulation.

SINGMASTER & BREYER

METALLURGISTS AND CHEMICAL ENGINEERS

GRAYBAR BUILDING

420, LEXINGTON AVENUE—NEW YORK 17, N.Y.

48MM
NSI 3.4

Mettur Chemicals
 "CAUVERY BRAND"
HYDROCHLORIC ACID
 28-32%
 SYNTHETIC

RUBBER
 SUGAR
 CHROME TANNING LEATHER
 GLUE
 GELATINE
 TEXTILES DYEING BLEACHING
 ARTIFICIAL SILK
 METALLURGY
 PICKLING & ELECTROPLATING
 OILS & EDIBLE FATS

THE METTUR CHEMICAL & INDUSTRIAL CORPN. LTD.
 METTUR DAM-R-S

METKEM—Printed at the Trichinopoly United Printers Ltd., Tiruchirappalli,
 Edited and Published by R. Parthasarathy, M.A., for the South Madras Agencies Ltd., Tiruchirappalli,
 on behalf of the Mettur Chemical & Industrial Corporation, Ltd.