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IN GENEVA (P. 893)

2 June 1962. Vol. 87. No. 2238

THE WEEKLY NEWSPAPER OF THE CHEMICAL INDUSTRY

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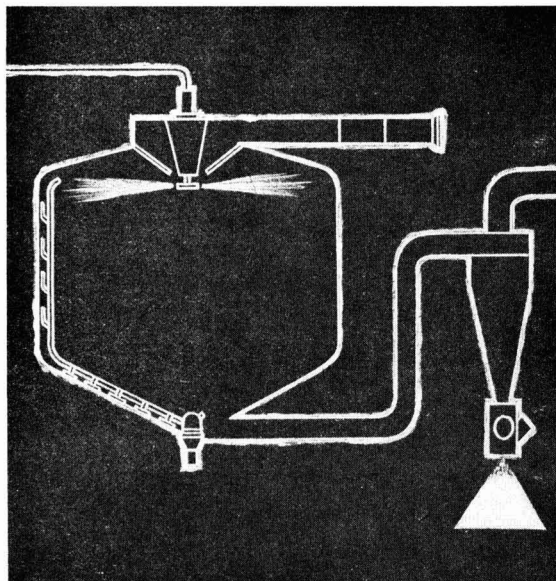
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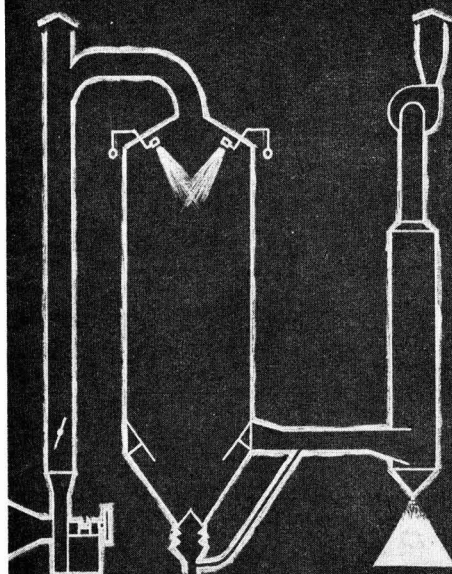


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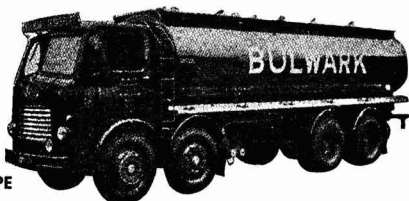
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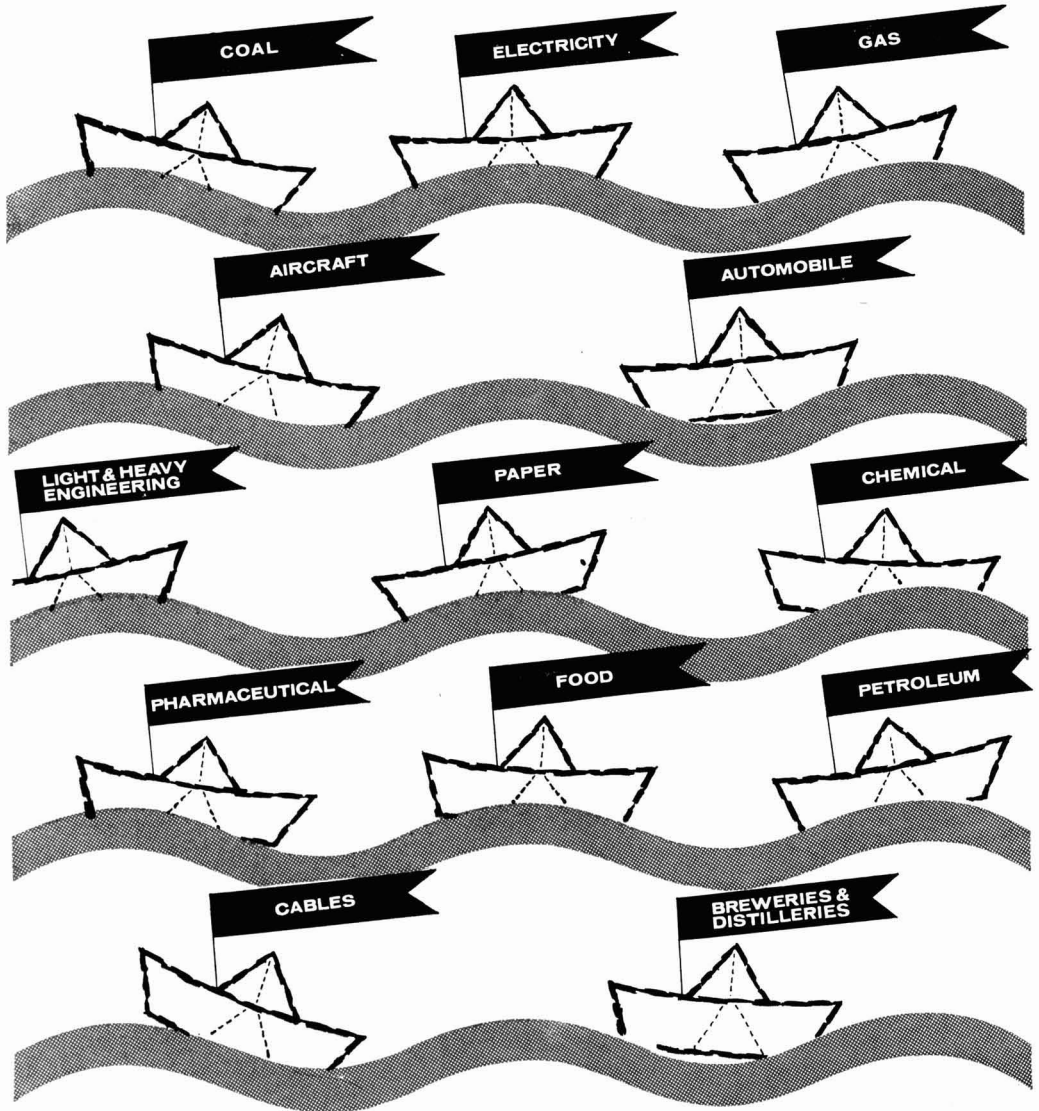
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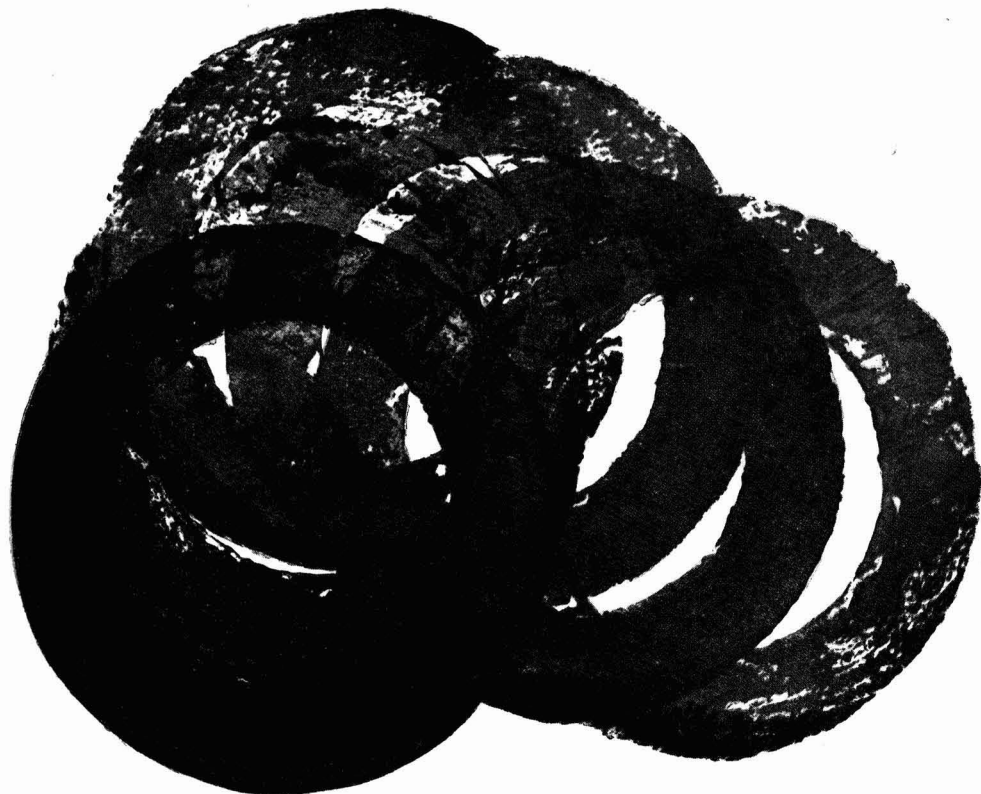
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# Chemical Age

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## PETROCHEMICALS and POLYMERS

ONE OF THE BENN GROUP OF TRADE AND TECHNICAL JOURNALS

## COST OF DRUGS

**T**HE cost of drugs supplied under the N.H.S. has always been a source of political contention, but much more so since the Government cast an eye at the industry's profits, and the Minister of Health decided to import unlicensed drugs under Section 46 of the Patents Act, in an effort to bring down Health Service costs.

The howl of protest that went up at the Minister's decision has never been silenced; no one with a vested interest in drugs could afford to ignore such an attack on the industry's research and development structure. The arguments put forward on behalf of the drug industry are well known; that it is an industry that needs to spend a high proportion of sales on research; that compounds investigated often prove disappointing after the expenditure of many man-hours and a great deal of money; that the drug discovered today may supersede the profitable drug of yesterday.

All who speak or write against or on behalf of the pharmaceutical industry on the question of profits reiterate the well-known arguments. Why is it then, that drugs, their prices and the industry's profits should continue to attract so much public interest? A contributor to the *Newsletter* of International Cyanamid (the editor is careful to say that the article is not an expression of Cyanamid's policy) suggests that there are two false syllogisms which have come to gain public acceptance over the years and which are partly to blame. One is that the cost of the Health Service is rising; the drug industry prospers; therefore drugs cost too much. The other erroneous proposition, equally deceptive in its seeming logic, is that the drug industry promotes the sale of its drugs; sales promotion is a factor in drug costs; therefore sales promotion is the cause of more expensive prescriptions.

Do drugs cost too much? The fact is they cost very little in proportion to the total cost of the Health Service—just over a penny per person per day. At 2s 7d a day the laundry service in British hospitals costs 2d a day more than the drugs.

The proportion of the pharmaceutical service to the total cost of the N.H.S. has decreased from 11.3% in 1951-52 to 10.4% in 1959-1960. Of the £84.5 million that the pharmaceutical service cost in 1959-60, £43.7 million was paid to the manufacturers for drugs, and of the £468 million which was the cost of hospital and specialist service, £12.5 million was paid to the manufacturers for drugs, so that drug producers received altogether £56.2 million.

The pharmaceutical industry has a higher proportion of qualified scientific staff engaged in research (2.62%) than any other industry. The research expenditure in 1960 was £75 million.

In answer to the charges of excessive sales promotion, the industry says that the job of the representative is to pass on information about new developments to the doctor. Rarely is he refused access. The cost of mailing is 1.5% of the pharmaceutical service and 3% of manufacturers' sales. The much maligned 'free gift' type of sales, the manufacturers say, has no intrinsic value for the doctor. They are given to him to assist his identification and consideration of the drug concerned. The cost of samples

(Continued on page 890)

# No Labour plan to nationalise I.C.I., Gaitskell tells central council

THE Labour Party has no intention of nationalising Imperial Chemical Industries, if returned at the next General Election, Mr. Gaitskell, the Party leader, told a private meeting of the company's central council at Scarborough last week. "Your successful profit-sharing scheme," he said, "was introduced only after we had originally proposed nationalisation. I am afraid we can do no more for you."

Later, Mr. Gaitskell issued a statement saying he had not been asked at the meeting about the possibility of such a course. "I am sure," he said, "members of the council knew quite well we have no such proposal, but to avoid any misunderstanding I made this plain in my speech."

On Monday the question was raised again at the annual rally of Young Socialists at Skegness, Lincs. Asked how it was possible to reconcile Mr. Gaitskell's comments with the views on nationalisation given in the Party's policy document "Signpost for the Sixties",

Mr. Anthony Greenwood, M.P., a member of the Party executive said: "I cannot believe that he gave a pledge that a Labour Government would not under any circumstances nationalise I.C.I. Indeed, no Labour leader would have any authority for a statement of that kind."

"I understand that what he said was that we have no proposals for nationalising it, and the reason is that we have not drawn up, and do not intend to draw up, a shopping list of industries to be nationalised."

"But equally we do not intend to draw up a shopping list of the industries not to be nationalised and once pledges are given to one industry every other will start asking for a similar pledge."

"We have laid down certain standards by which industries will be judged before deciding whether they shall be nationalised, and if a Labour Government decides that in some sections of the chemical industry I.C.I. is a monopoly it will be eligible for nationalisation just as much as any other industry."

## A.B.C.M. deputation discusses dumping with Board of Trade

THE dumping of chemicals from overseas and its impact on the British chemical industry was discussed on 25 May at a meeting between the second secretary of the Board of Trade, Sir Leslie Robinson, and a deputation from the Association of British Chemical Manufacturers. The deputation was led by the association's chairman, Mr. John Hanbury.

Neither the association nor the Board of Trade were prepared to elaborate on the outcome of their talks when questioned by CHEMICAL AGE earlier this week.

## B.D.H. chairman explains Woolley bid

THE decision by British Drug Houses to bid for the issued share capital of James Woolley Sons and Co. (CHEMICAL AGE, 19 May, p. 822) has been taken largely to give B.D.H. a foothold in the wholesale drug business in the Manchester area, Mr. G. C. R. Eley, chairman, told shareholders at the company's annual meeting on 25 May. "Woolleys are an old-fashioned manufacturing and wholesale chemists with a very high reputation for quality and service among retail pharmacists and hospitals in Lancashire," he said. In recent years they have felt the full force of the competition that exists in our industry, particularly in the field of standard drugs. They have, however, a substantial business as wholesalers.

"Considerable reorganisation will be necessary, but we are confident that the task can be achieved within a reasonable period and that the acquisition, assuming it goes through, will prove a profitable addition to your group."

On the latest stage of B.D.H.'s own reorganisation and the personnel changes involved (CHEMICAL AGE, 12 May, p. 769), Mr. Eley said: "It is a matter of great regret on personal grounds that it has been found impossible to fit into the new structure Mr. C. M. Hill, Dr. C. Ockrent and Mr. A. Rendall. It was therefore necessary to terminate their executive responsibilities and I understand that it is their intention to resign their seats on the board."

## Cost of drugs

(Continued from page 889)

is 0.65% of the pharmaceutical service and 1.3% of industry's sales.

The drug industry has a strong case in support of its attitude, and perhaps the Minister of Health could look with profit elsewhere in his endeavour to trim costs in the Health Service. In making its case, however, the industry should not be too sentimental. While it is perfectly justified to claim—as the *Newsletter* contributor does—that British-made drugs have saved lives and alleviated suffering, it is just as easy to argue that without the aid of doctors and hospitals the modern drug would be virtually useless. The industry is on stronger ground if it tackles the case on a purely economic basis. After all the main aim of any industry, aside from humbug, is to ensure a fair return to shareholders on capital invested.

## Courtaulds may sell Snia Viscosa shares

THE possibility of the sale of at least part, if not all, of their £19 million stake in Snia Viscosa, the Italian rayon and synthetic fibre company, is being suggested in some quarters following disclosure last week that the board of Courtaulds Investments is currently reviewing the company's entire share portfolio. The problem of their Viscosa shareholding, which last year produced for Courtaulds only £310,000, a yield of under 2%, is chiefly that of whether to sell and reinvest in a firm with a higher interest yield. It has been accentuated recently by Snia Viscosa's decision to make a rights issue, which, if taken up in full would cost Courtaulds nearly £1 million.

On the other hand, the present shareholding (20%) gives Courtaulds a strong

say in the Italian company's affairs and Sir John Hanbury-Williams, their chairman, is, in fact, a Viscosa director. The question to be resolved is whether the benefits of their present relationship with Snia Viscosa are more important to Courtaulds than the income, especially in view of the possibility of the U.K. entering the Common Market. At the same time, there is the problem of how to dispose of a holding of such size without a competitor getting hold of it.

### Will

Mr. Georg Ernst Adalbert Schicht, a former joint chairman of Unilever Ltd., who died on 2 September last, left £350,722 net.

## Project News

# British Tar raise methylating capacity

**A**N extension to their methylating and distribution service facilities has recently been completed and brought into operation by **British Tar Products Ltd.**, of Cadishead, Lancs. The plant has been installed on behalf of **Alcohols Ltd.** in order to increase their depot capacity in the north of England.

The siting of the plant is such that bulk shipment imports of ethyl alcohol can be handled direct to storage under Customs & Excise supervision. Normally, shipment batches of about 500 tons are received and put to storage in the newly extended storage tank capacity. The alcohol is then treated in batches through the denaturing plant and put to a battery of distribution stock tanks which are arranged for off-loading to road tanker transport or for drumming.

Equipment for the denaturing process basically comprises a Customs calibrated transfer and mixing vessel, handling batches of 5,000 gall. Denaturing is carried out to a 5% level by means of wood naphtha and three standard grades are normally produced; 74, 66, and 64 over proof. All transfers and handling up to the denaturing stage is strictly controlled under Custom's supervision.

In practice, an hourly turnover basis has proved adequate. This is carried out by a drum centrifugal pump installation with a 100 g.p.m. capacity. The same installation is used to transfer the denatured alcohols to the finished stock tanks. These are arranged as a battery of small vertical units, each of 11,000 gall. capacity, and off-loading is by means of gravity feed.

The plant was designed, fabricated, and erected by **British Tar Products** themselves. Construction throughout is in mild steel.

## Courtaulds get further plant order from U.S.S.R.

● **NEGOTIATIONS** between **Prinex Ltd.**, a wholly-owned subsidiary of **Courtaulds**, and **Techmashimport**, Moscow, for the supply of plant and machinery for a unit in Lithuania for the production of Tricel triacetate fibre have now been completed and Prinex have won an order worth approximately £6 million. Delivery of equipment is due to begin next year.

The plant is the one which figured in the news in February when I.C.I. were bidding for control of Courtaulds (*CHEMICAL AGE*, 17 February, p. 284). Talks between Prinex and Techmashimport had then been going on for about 15 months and the Soviet Union was reported to be prepared to sign a contract immediately if it would help Cour-

taulds in their struggle.

This latest order brings the total value of Courtaulds' plant contracts with East European countries to some £29 million.

## First pile is driven at I.C.I.'s Dutch site

● **THE** first pile was driven last week for the Europoort chemical complex in Rotterdam of **Imperial Chemical Industries Ltd.** Speaking at the event, the director of the Dutch I.C.I. subsidiary stated that within 10 to 15 years it was hoped to make full use of the 120-hectare site. The first projects are for methyl methacrylate sheet and moulding powders.

## British process for Mexico's first activated carbon plant

● **A** NEW facility for the manufacture of activated carbon to be built by **Hooker Chemical Corporation** at Lecheria, Mexico, adjacent to their

phosphate plant, will utilise a process developed by the **Clydesdale Chemical Co.**, of Glasgow. Hooker's International Division have formed a new company, **Actibon S.A. de C.V.**, to manage the operation.

Siting of the venture alongside the facilities of **Hooker Mexicana S.A.** at Lecheria will enable the company to avail itself of the phosphoric acid produced at the existing plant for use as raw material. The plant is expected to be completed in time to supply at least a part of Mexico's sugar industry requirements in the 1962-63 season. At present there is no domestic production of activated carbon in Mexico.

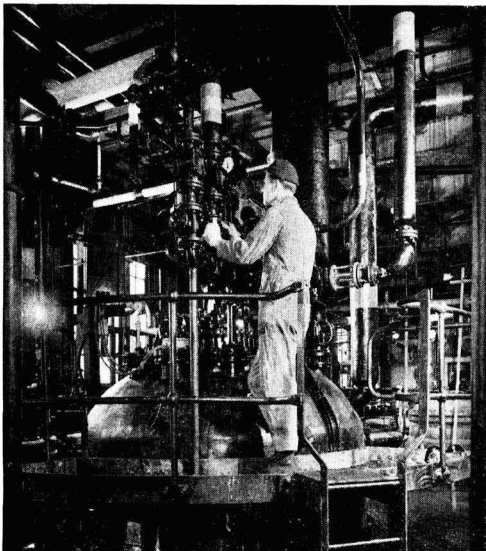
## U.C.C. polyester resin plant will double capacity

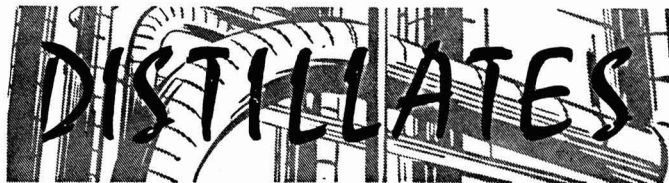
● **NEW** plant for the production of Orkast polyester resins, which will be completed shortly at the Orgreave works of **United Coke and Chemicals Co. Ltd.**,

(Continued on page 896)

## Du Pont's TDI plant construction team

**W. F. H. Bowles**, **H. F. Furber** and **S. S. Mossman**, discussing construction plans of the new isocyanates plant of **Du Pont Co. (United Kingdom) Ltd.** (C.A., 8 July 1961, p. 51), building of which began last week. **Bowles** will be chief supervisor, **Furber** will help get the plant started at the end of 1962. **Mossman** will be area maintenance engineer of the plant





★ It was doubtless fear of nationalisation that led to the large Conservative majority at Middlesbrough West in the 1959 General Election, when a fair number of I.C.I.'s Billingham and Wilton employees must have helped swell the Tory majority to 9,000. In the current by-election, nationalisation of I.C.I. has again become a major issue.

The local Labour candidate stated that his party had no proposals to nationalise I.C.I. and last week-end, the I.C.I. General Council meeting at Scarborough had as the guest of Mr. S. P. Chambers, chairman, Mr. Hugh Gaitskell, leader of the Labour Party. Mr. Gaitskell confirmed that Labour had no plans for a State take-over of I.C.I.

That outright denial of nationalisation has led to howls of protest from Labour's left-wing diehards, protests that are unlikely to move yesterday's Labour voters who are to-day's members of the 'affluent society.'

★ ALTHOUGH there is world over-capacity in some of the products produced by I.C.I.'s Billingham Division, it is possible to see in the reasonably near future requirements catching up with capacity again. So believes Mr. E. A. Blench, the division's joint managing director.

The reason for his optimism is that since world population is increasing so are food requirements so that fertiliser demand will go up all the time. Similarly as the population and standard of living rise, requirements of plastics in which methanol, one of Heysham's main products, is used will also increase.

Mr. Blench says that new plants being put up by competitors are as efficient as the contractors can make. That presents a tremendous challenge for Billingham, some of whose plants have been established for many years.

★ Two interesting new booklets that have reached my desk, both written by well-known chemists, cover such diverse subjects as silage making and wine making. In the first, Dr. D. G. Hessayon, technical director, and of Pan Britannica Industries Ltd., in collaboration with Mr. C. H. P. Wood, has produced the 'Silage Makers' Handbook' that is well up to the standard of previous P.B.I. publications.

The presentation follows the pattern of 'Potato Growers' Handbook,' produced by P.B.I. a year ago, and that of the popular gardening booklets published by the same company. P.B.I. again

rely on charts and diagrams, rather than a mass of words, to explain new techniques, new discoveries and established principles. At 2s 6d a copy this booklet will have an assured sale.

Mr. S. M. Tritton, consulting chemist and head of Grey Owl Research Laboratories, has added to his many publications on wine making with 'Wine Making from Fruit Pulp and Concentrates,' also priced at 2s 6d. This is a fascinating, well-written, booklet that will appeal to all amateur wine makers; it deals with wines made from apple, grapefruit, orange, grape, pineapple, apricot, peach and plum.

★ FRANK SCHON, who has been the mainspring behind the phenomenal development of Marchon Products, Britain's sole producers of the most important synthetic detergent raw material, was born in Vienna just over 50 years ago. He entered chemicals when he was 19, joining a firm concerned with pioneering synthetic detergents.

Schon matriculated at Prague University in 1931 when he started to work in chemicals; he later returned to Vienna to read law, but by 1937 was back with the same company in Prague, having decided to abandon law for chemicals. He came to London in 1939 and joined forces with a British friend, Fred Marzillier, and in a modest way started marketing chemicals (hence the name 'Marchon').

A German bomb in 1940 saw their removal to Cumberland, where they started making textile detergents, paying their way by selling firelighters made from sawdust and naphthalene. The company's outstanding growth started at the end of the war, for Frank Schon was determined to play a leading part in the development of Britain's detergent industry.

★ WHEN Marchon acquired their present site in 1943 they had no idea that they were sitting on top of an anhydrite mine. The discovery of this and the company's decision not to compete with the big soap firms in the retail market, but to concentrate on making raw materials for synthetic detergents, have played a big part in the company's rapid growth.

Marchon broke into phosphates in the early 1950's which led to their merger at the end of 1955 with Albright and Wilson, phosphorus industry leaders for nearly 100 years. Now Marchon have the largest European production unit for tripolyphosphate, are important pro-

ducers of fatty alcohols, and the only U.K. producers of sulphamic acid. A third of their output in terms of value is exported.

Justification of Frank Schon's efforts came last week when a specially chartered train took guests from London to Whitehaven for the opening by Lord Fleck of the company's latest expansion project, which has cost over £2 million. Standing at the top of the 'wet' phosphoric acid building looking down on the Prayon filter, I was able to remind Lord Fleck that a few years previously he had opened similar 'wet' phosphoric acid facilities—although combined with fertilisers, not detergents—for Scottish Agricultural Industries when as Sir Alexander he was chairman of I.C.I.

★ PUBLIC relations planning should be, but seldom is, an integral part of a chemical company's plant disaster programme. The public is, of course, entitled to prompt and factual information regarding disasters, but plant management is usually extremely loth to say anything in the mistaken belief that any news of disaster can only be bad publicity.

That is far from the case for experience has shown that public relations can ensure that a company emerges from an explosion or a fire with an improved 'image'—one of a humane management quick to react to dangers and doing all it can to help injured personnel and to keep customers supplied. On the other hand, secrecy on such occasions only creates the impression that a company has something to hide.

I agree entirely with the U.S. Manufacturing Chemists' Association, whose new safety guide says that it is an early duty of plant management to publish the facts as quickly and completely as possible. This is the only way to help prevent the spread of exaggerated reports and rumours.

★ SCIENTISTS do not need to be reminded how great has become the quantity of literature published and how difficult it is to keep abreast with the overwhelming tide of publications produced every year throughout the world. In an effort to find some means of overcoming this increasing problem, however, the French Centre National de la Recherche Scientifique are organising a contest and offering a prize of NF10,000 for the best suggestion.

In particular an adequate system is needed for indexing publications so that electronic computers can be used to store bibliographical information and find the right information when it is needed. The format of the scientific publications themselves, the French scientists hint, may have to be changed.

*Alembic*

# I.L.O. chemical committee calls for study of wages policy structure in chemical industries

A RESOLUTION calling upon the governing body of the International Labour Organisation to request the International Labour Office to undertake a study on wage policy structure in the chemical industries was among several adopted by the organisation's Chemical Industries Committee at the end of its sixth session, held recently in Geneva (see also CHEMICAL AGE, 19 May, p. 809). The resolution specified that the proposed study should be presented as part of the general report to the committee's seventh session.

The committee also adopted two series of conclusions bearing on the two technical items on the agenda for the session. These items were safe practices by audio-visual teaching methods and principles and methods for determining extra rates for shift work and overtime.

The committee posed the principle that safety should be the concern of all ranks in industry and should be one of the primary responsibilities of management. It pointed out that at the design and construction stages of plant and equipment, production processes and the layout of workshops should be studied with a view to ensuring accident-free operation and an ergonomically satisfactory working environment.

## Safety education

Various suggestions for safety education through basic training and through in-plant training programmes at all levels—management, supervisory staff, workers—and stages of industrial activity were also suggested and the use of audio-visual aids was recommended for the teaching and inculcation of safe practices.

The committee noted that joint works committees had an important part to play in propagating safe practices. Such committees should include representatives of management and of workers and should be responsible for general advice on improving safety, investigating accidents and developing safety consciousness.

The conclusions also covered the contributions that could be made to safety training by government departments and labour inspection services, national safety societies and institutions, employers' and workers' organisations in the chemical industries.

In its conclusions relating to extra rates for shift work and overtime, the committee noted that shift work often caused inconveniences and expense to the worker and disturbed the normal conditions of his physical, family and social life. It recognised that where such

inconvenience existed, there should be adequate compensation with shift payments providing a fair and equitable recompense for the greater inconvenience entailed by afternoon shift work as compared with the morning shift.

The committee held that where overtime premium rates were paid on a differential basis, rates should increase after a certain number of hours had been worked or if the overtime involved night work.

Addressing the closing meeting of the session, the committee's assistant secretary-general stressed the phenomenal growth of the chemical industries which, he said, might almost be described as a "second industrial revolution". He recalled that one delegate had used the striking phrase "the chemicalisation of the national economies".

## Reduction in U.S. chemical import duties

DETAILS of the tariff reductions to be made by the U.S. under a bilateral agreement with G.A.T.T. are given in the *Board of Trade Journal*, 25 May. Most of the reductions will be made in two stages, the first part coming into force this year and the remainder a year later. Among the proposed rates are:

*Phthalic anhydride*, currently 3 cents/lb. and 17% *ad val.*, reducing to 2.7 cents and 15½% and finally to 2.4 cents and 14%.

*Naphthalene*, currently 1.75 cents/lb. and 10% *ad val.*, reducing to 1.6 cents and 9% and finally to 1.4 cents and 8%.

*Ethylene dibromide*, currently 3 cents/lb. and 15% *ad val.*, reducing to 2.7 cents and 13½% and finally to 2.4 cents and 12%.

*Fatty alcohols, etc.*, currently 12½% *ad val.*, reducing to 11% and 10%.

*Synthetic resins* (acrylic alkyd, melamine, polyamide, polythene, rosin ester, silicone, urea and urea/melamine mixtures, currently 3.4 cents and 25½% *ad val.*, reducing to 3 cents and 22½% and finally to 2.75 cents and 20%.

*Carbon tetrachloride*, currently 0.85 cents/lb., reducing to 0.75 cents and finally to 0.65 cents.

## Chemicals traders question effects of C.M. entry on import duty suspensions

THE possible effect which the U.K.'s entry into the Common Market would have on the existing procedure for the temporary suspension of import duty on chemicals is now the subject of discussions between the Board of Trade and the British Chemicals and Dyestuffs Traders' Association, states the association's chairman, Dr. C. J. Bell, in its annual report for 1961. The matter is of great importance to many members of the association as the facilities are used fairly extensively, Dr. Bell adds.

The report continues: "Whatever the outcome of the current negotiations on the Common Market, and it would be unwise to form a preconceived judgment, there is a definite world trend towards lower tariffs as has been evidenced by the recently announced concessions agreed in the G.A.T.T., of which members have been advised by the association. Moreover, it is the declared aim of the Government to expand trade and get the widest possible exchange of goods of all kinds.

"Our association welcomes this policy and as long ago as 1953 pressed for the abandonment of protectionism when it expressed the view that the high import duties on chemicals had already outlived their usefulness.

"It is pertinent to observe that as a mercantile country our aim should be to trade with the whole world, without discrimination; to develop to the full a valuable entrepôt trade and not merely

rely on the sale of our home manufactures.

"Since an expansion in world trade must depend on the progressive elimination of tariffs and quota restrictions, it remains to be seen whether this can be accomplished by entry into the Common Market, albeit with its own protective wall, or by negotiations within the G.A.T.T."

With regard to tariff revisions generally, the association has emphasised that the trading community needs to be informed well in advance of the changes to be made, in order that entry into future commitments shall not be bevelled by uncertainty as to duty liability.

## New Geon copolymer for rigid compounds

RECENTLY introduced by British Geon Ltd., is a new vinyl chloride/acetate copolymer developed for use in rigid compounds and intended for the production of foil and sheet. The new copolymer is known as Geon 420E/7 and contains about 10% acetate.

Foil and sheet produced from the copolymer combine good impact strength with ease of vacuum forming and is recommended for such applications as 'fridge liners—at present made largely from polystyrene—in which good vacuum formability is the main requirement.

## Bibby's oil seed extraction plant nears completion

THE new oil seed extraction plant of J. Bibby and Sons Ltd., of Liverpool, using hexane as solvent (CHEMICAL AGE, 29 April 1961, p. 697) is now in an advanced state of construction. It is anticipated that commissioning will commence sometime within the next two months. All the major plant items are now in position, and work is proceeding on the final stages of completing the process pipelines and conveyor systems, instrumentation, and plant services.

Initially, the plant will be operated on soya bean, palm kernel, and ground nuts. The Blaw Knox Chemical Engineering Co. Ltd., who are the consultants, designers, and main contractors for the plant, will shortly send in an American commissioning engineer to get the plant under way. With the inclusion of a certain amount of necessary optimisation, it is probable that commissioning will last for three or four months.

The plant comprises two separate continuous extractors, each with its associated solvent and seed handling equipment, and solvent evaporation and recovery units. One is a reconditioned extractor of Bibby design previously used on the existing solvent extraction plant, which employs trichlorethylene as solvent.

### Reconditioned extractor

This particular extractor employs a form of cross-flow plus co-current flow principle in which the oil seed is carried along in a series of perforated buckets on an endless train. The train of buckets progress down the extractor in horizontal bands, or layers from top to bottom of the extractor, with the trichlorethylene solvent being sprayed from above. Seed is fed on to the buckets from a top feed chute, and the extracted seeds are discharged from a common collecting chute also at the top of the unit. From here it is conveyed to steam-heated two-stage evaporators, which recover entrained solvent for re-use. The excess solvent and extracted oil are collected in a common sump and passed to a solvent recovery unit. Only the actual extractor is reconditioned, the remainder of the associated equipment is new in construction and design.

The new extractor is a Rotocel unit manufactured by Rose Downs and Thompsons of Hull. Briefly, this consists of a large common spray chamber into which the hot solvent is fed through radial spray arms. The seed is fed continuously through a feed chute, which discharges into a system of rotating extraction chambers. Spent seed is discharged after one complete revolution and immediately before coming round to the feed point again.

The oil/solvent separation is carried out in both cases by means of double effect evaporators followed by rotary drum film strippers of Bibby's own

design. The hexane is flashed-off, through a foam trap, to a tube and shell water-cooled condenser. It is then re-circulated back to the extractor solvent feed stage.

Hexane was chosen as solvent in preference to trichlorethylene, chiefly on economy grounds, while it also gives greater possibilities of avoiding any residual toxicity occurring in either of the products. However, hexane presents greater problems because it is highly inflammable.

During the design stages considerable attention had to be paid to the incorporation of fire prevention measures

and several visits were made to similar extraction plants on the Continent and America to review the best known practices. Provision has been made to drench the plant from water sprays at the rate of 4,000 gall/minute in the event of fire.

The potential fire hazard has also had considerable bearing on the original choice of plant site. Accessibility was an important consideration, and the site had to be gained by modifying two existing adjacent buildings in Neptune Street, Liverpool. Actual installation of plant items began in the last quarter of 1961.

When the completed plant comes into production it will serve the dual purpose of replacing obsolete plant and will provide the means of enabling possible expansion of the company's feed cake and oil production.

## Berk have new fluidised dryer available for tests and demonstrations

A NEW fluid bed dryer, installed at the Leytonstone Research Station of the industrial dryer department of F. W. Berk and Co. Ltd., 8 Baker Street, London W.1. is permanently available for demonstration and test runs. The technique has been pioneered by Berk in the chemical and pharmaceutical industries.

The fluid bed dryer is essentially an enclosed fluidising chamber, to which has been added continuous controlled feed and discharge mechanisms, and a cyclone separator recovery system. The material to be dried is fed on to the bed of the fluidising chamber, where it is fluidised by hot air, until the dried particles 'boil' over a controllable weir into the discharge mechanism. The air jets in the chamber thus serve the three-fold purpose of supporting, conveying and drying, and there is no need for moving mechanical parts.

As each particle is supported only on a cushion of air, complete protection is given against breakage and attrition of material to be dried, and in the case of abrasive products, wear of the drying equipment. Control of the hot air temperature and its rate of flow are easily adjustable from a gentle 'simmer' to turbulent 'boiling,' giving fast or slow drying and where required, high heat-transfer co-efficients. These lead in turn to compactness of layout and small space requirements. Operation can be continuous, in batches, single stage or multi-stage, with or without automatic control. Starting, stopping and maintenance are simple and speedy. A cooling section can be attached to the drying section for discharge at any required temperature.

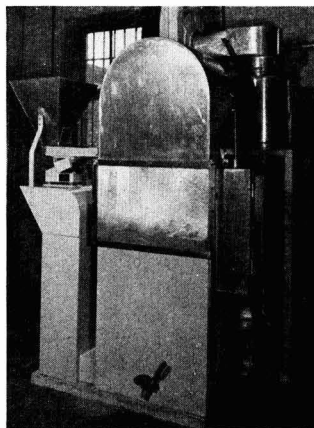
### Obituary

The death occurred on 12 May, at the age of 93, of **Dr. Eugene C. Sullivan**, honorary chairman and director of Corning Glass since 1950, and president of the Dow Corning Corporation from 1943-54, and subsequently honorary chairman. With Dr. William C. Taylor, Dr. Sullivan was one of the originators of Pyrex heat-resistant glassware. He was also responsible for Dow Corning taking on to their staff Dr. Frank Hyde, who was one of the earliest workers on the commercial development of silicones.

**Herr Heinrich Grebe**, chemicals sales manager of the Badische Anilin- und Soda-Fabrik AG, of Ludwigshafen-on-Rhine, Germany, at the age of 64.

### Duty drawback on certain copolymers

Under the Import Duty Drawbacks (No. 6) Order, S.I. 1962/1055 (H.M.S.O., 4d), allowance is made for the drawback of import duty on certain imported copolymers of vinyl chloride and vinylidene chloride used in the production of specified types of lay-flat tubing, bags and film for export.



A new pilot plant fluid bed dryer now in operation at the Leytonstone Research Station of F. W. Berk's industrial dryer department



**Letters to the Editor****AUTOMATIC APPARATUS STILL  
NEEDS SKILL – Courtauld's' researcher**

SIR.—I have read with interest the article by Mr. E. G. Thompson on 'Automation in the Laboratory' which appeared in the 28 April issue, page 693 of CHEMICAL AGE.

It would appear, however, that Mr. Thompson in dealing with elementary analysis has not given a correct appreciation of the facts in comparing the merits of the Belcher and Ingram rapid combustion method with the Coleman automatic combustion type of unit. In his article, Mr. Thompson states that "Although the rapid combustion method for determining carbon and hydrogen, halogens and sulphur has considerably lessened the difficulty of micro elementary analysis, it still requires the services of skilled micro-chemists." He continues with "The new automatic instruments" (in this case the Coleman analysers) are stated to reduce "even further the errors due to operator's technique."

This comparison is entirely incorrect, particularly in the case of the determination of carbon and hydrogen. In both the Belcher and Ingram and Coleman methods the sample, and eventually the absorption tubes, must be weighed on micro balances which requires skill. In the case of the Belcher and Ingram method of combustion, the burning of the sample is a simple matter and requires no more skill in its performance than the automatic procedure of the Coleman method. Furthermore, since the absorption tubes, in the case of the Coleman method are weighed as soon as they are disconnected from the combustion apparatus, the error is more likely to be greater, because the technique is known to be contrary to micro-chemical practice. Equilibrium factors must be considered, and it is known that the Coleman method is more suitable for routine analyses where the accuracy of  $\pm 0.5\%$  can be tolerated.

**Price of apparatus**

In addition to this, the price of the equipment must be considered. The Coleman apparatus costs about £700 while the apparatus of Belcher and Ingram costs less than £200 in the U.K. The only advance of the Coleman unit is the fact that the absorption tubes are weighed on a Mettler balance within two minutes of removing them from the combustion unit. If this practice would be adopted using the Belcher and Ingram method of combustion, then the same order of speed would be achieved, but the precision of the analysis would then be lost and would produce the same order of accuracy stated, namely  $\pm 0.5\%$ .

I hope that you will be able to print

this letter in CHEMICAL AGE, because it would clarify the position in that British apparatus is as good as American. Moreover the method involved is based on sound technique. The Belcher and Ingram method is used almost exclusively in the U.K. and is gaining favour on the Continent. The Coleman method cannot hope to compete with the British rapid combustion method of analysis for simplicity, rapidity and accuracy.

Yours etc.,

G. INGRAM,

Courtauld's Ltd.,  
Research Laboratory,  
Maidenhead, Berks.

**...errors due to operator's technique are  
reduced maintains B.T.L. sales manager**

SIR.—In the section of my article on 'Automation in the laboratory' dealing with elementary analysis, it was obviously difficult to give more than a general appreciation of the apparatus and instruments which are commercially available at the present time. Having carefully looked into Mr. Ingram's comments, I still feel that my comments were perfectly justified. Nevertheless, in his letter, Mr. Ingram raises a number of interesting detailed technical points which I think require to be answered.

In general I can see no reason for altering my statement that the new automatic instruments reduce even further errors due to operators' technique. As the sequence of operations in the Coleman instruments, including the time of combustion and rate of movement of the heaters, is completely automatic, a reproducibility of conditions is ensured, which it is very difficult to obtain by manual operation.

I do not wish to minimise the very considerable achievements in the technique of elementary analysis developed by Belcher and Ingram, and I think my article makes this plain. However, a fully automatic system based on Mr. Ingram's developments, although perhaps technically feasible, is in fact not yet commercially available. Although attempts have been made to extend the Belcher and Ingram combustion technique to nitrogen determinations, an automatic nitrogen analyser comparable to the Coleman instrument is not even on the horizon. I am willing to concede that the comparative advantages of the Coleman carbon/hydrogen analyser and the Belcher and Ingram rapid combustion unit are less marked than in the case of the nitrogen analyser which was the principal instrument described in my

**Monsanto report new  
advance in phthalic  
anhydride production**

AN all-round increase in the operating efficiency of the phthalic anhydride plant of Monsanto Chemicals Ltd. at Ruabon has been reported following the adoption recently of an improved means of naphthalene purification. Developed by a former member of the research department, Mr. R. H. Simpson—he is now general superintendent of the technical services department—it involves vaporising the naphthalene in a specially designed apparatus before conversion.

Introduction of the new technique is said to have resulted in the naphthalene having a much lower pitch content than when it was refined by distillation and consequently the plant is claimed to have an improved 'on stream' time. The reduction of deposits and impurities from the manufacturing process has also lessened the amount of maintenance needed.

It is estimated that the entire cost of the apparatus for the new process will be recovered in less than one year.

Nevertheless, I still maintain that an automatic carbon/hydrogen analyser has many attractions for laboratories carrying out micro combustions in large numbers.

Mr. Ingram raises an interesting technical point regarding the weighing of the absorption tubes. He is perfectly correct in stating that the Coleman absorption tubes differ from the conventional absorption tubes used by micro chemists. It has been found, however, that with the Coleman tubes, the flat portion of the weight/time curve occurs approximately two minutes after removing the tube, whereas the conventional Flaschenträger and Pregl absorption tubes take eight to ten minutes to reach the flat constant weight portion of the curve. Hence the time of analysis with the Coleman equipment is considerably reduced, particularly when one of the new semi-automatic micro balances or micro electro-balances is used. I do not know from where Mr. Ingram obtains his figure of accuracy of  $\pm 0.5\%$ , but experiments in the United States have shown that accuracies of  $\pm 0.2\%$  can be readily achieved with the Coleman equipment.

No doubt the Belcher and Ingram micro combustion units will continue to prove valuable instruments for micro elementary analysis, particularly in view of their lower cost, but where large numbers of determinations have to be carried out, the advantages of an automatic apparatus in the saving of time and skilled manpower will become increasingly evident.

Yours etc.

E. G. THOMPSON,  
Technical sales manager.

Baird and Tatlock (London) Ltd.,  
Chadwell Heath.

## New series of shelf driers allow access while maintaining sterility

A NEW series of modern shelf driers has been added to the range of freeze driers marketed by Edwards High Vacuum Ltd., Manor Royal, Crawley, Sussex. Made by another company in the Edwards group, Edwards Alto Vuoto S.p.A., of Milan, the new units, designated L20, L40 and L80, each feature stainless steel drying and condenser chambers and independent refrigerator units for shelf and condenser cooling. The high speed pumping system in each unit incorporates a Speedi-vac vapour booster pump, which contributes to rapid pump down and short drying times.

Constructed so that only the drying chamber is accessible from the sterile room, the units are said to enable the maintenance of maximum sterility for the dispensing and freeze drying of the materials while at the same time allowing access to the machinery during processing.

As a further precaution, those parts of the unit which communicate with the drying chamber are exposed to sterile fluids only. To achieve this the work-chamber is let up to atmospheric pressure by the admission of filtered air from the sterile zone or from a filtered source of dry inert gas and defrosting of the condenser is either by admission of sterile water or air.

### Rhenium now available in large quantities

RHENIUM and rhenium alloys are now being supplied in substantial quantities by Engelhard Industries Ltd., Baker Platinum Division, 52 High Holborn, London W.C.1. The full range includes two grades of powder with minimum purities of 99.99% and 99%; rhenium wire and strip; strip and wire made from tungsten/rhenium and molybdenum/rhenium; ammonium and potassium perhenates.

Rhenium products are used as supported catalysts for hydrogenation as thermocouples for temperature measurement and control to about 2,200°C, as filaments for mass spectrographs; for ion gauges for measuring high vacuum, etc.

### Bradford course on plastics and polymer technology

A special short course on 'Technology of the newer plastics and polymers' will be held by the Department of Chemical Technology, Bradford Institute of Technology, Bradford 7, on 22 and 23 June. Registration forms are available from the Registrar.

The Institute's post-graduate course of one academic year in high polymer chemistry will begin on the first Monday in October.

The plant is readily adaptable for drying in bulk or in ampoules or vials. If drying in vials is required an automatic stoppering device may be incorporated which permits the vials to be sealed under vacuum or in an inert atmosphere at the end of the drying process before opening the chamber.

For pre-freezing of the materials in the drying chamber the shelves are cooled by direct expansion refrigeration, enabling temperatures as low as -50°C to be attained. In cases where the product permits a high final temperature and the shelves are too hot initially to permit cooling by direct refrigeration, a precooling facility is incorporated which circulates cold oil around the shelves. This system reduces the 'dead' time between successive cycles and serves to protect the product automatically against melting in case of refrigerator or vacuum failure.

It is claimed that there are already nearly 40 large shelf drier installations in Italy and other parts of Europe, drying a wide variety of pharmaceutical products. One of the first installations in the U.K. was at Glaxo Laboratories' BCG production unit, Greenford, Middlesex, where an L20 unit is being used to increase output of freeze dried BCG vaccine used for the prevention of tuberculosis.

### New U.K. adhesives unit begins production

PRODUCTION of industrial adhesives at an annual rate of up to 250,000 gall. is due to begin next week at a new factory at Chesham, Bucks, owned by Industrial Adhesives Ltd. The company, a new one, is under the managing directorship of Mr. Brian Wardle, until recently manager, industrial sales, of Dunlop Chemical Products Division.

### Aid sought for Indian fine chemical project

THE co-operation of U.K. manufacturers is being sought for full technical and financial collaboration for the production in India of fine chemicals, reagents, stains and ion-exchange resins. This is a medium-sized project with a million rupee investment in the starting stage.

Companies interested in this project should contact Mr. S. P. Gupta at Cobdown House, Ditton, Maidstone, Kent.

### I.C.T. 1500 computer for Pfizer

Pfizer Ltd., of Sandwich, has ordered an I.C.T. 1500 computer from International Computers and Tabulators Ltd., 149 Park Lane, London W.1, for delivery early in 1963. In addition to carrying out normal accounting functions, the computer will be used to analyse market information and on medical research.

## PROJECT NEWS

(Continued from page 891)

will double the present production capacity. A considerable tonnage of phthalic anhydride made by the U.C.C. fluid bed process has been shipped to Germany and the U.S. in the past year, while catalyst has been sold in the U.S.

### C.J.B. confirm award of contract for Marbon ABS plant

It is now officially confirmed by **Constructors John Brown Ltd.** that they have been instructed to proceed with the design, engineering, procurement and construction of the new Cyclocac brand ABS polymer plant to be set up at Grangemouth by the Marbon Chemical Division of Borg-Warner (CHEMICAL AGE, 31 March, p. 517).

### I.C.I. to build new bipyrindyl unit

THE General Chemicals Division of I.C.I. are planning construction of a new £400,000 plant at Widnes for the manufacture of bipyrindyl for the company's Reglone weedkiller. Design and construction are to be carried out by the division's engineering department. The plant is due to be completed by the end of the year.

### Proprietary Perfumes' new works to cost £1 million

PRELIMINARY construction work has just been begun on a new factory for **Proprietary Perfumes Ltd.** near Ashford, Kent. It is expected to go into production in August 1963. Tenders for the main part of the project, which is expected to cost £1 million altogether, have yet to be invited.

Proprietary Perfumes claim to be the largest U.K. perfumery compounders.

### Wm. Blythe commission rebuilt plant

FIRST of the chemical plants being rebuilt by **William Blythe and Co. Ltd.**, Manchester, has been commissioned and is now operating successfully. Two more units producing products new to the company are expected to come into operation in the near future. Progress is also being made with other rebuilding projects and exploration of new product development. Exact nature of the chemicals concerned is not revealed.

### Stone and Webster contract for Kuwait extensions

THE contract for the design engineering, procurement and construction of an extension to the oil refinery in Kuwait of **Kuwait Oil Co. Ltd.** has been awarded to **Stone and Webster Engineering Ltd.** Capacities of two of the three crude oil distillation units are to be increased to 110,000 bbl/day from 80,000 bbl/day. The total capacity of the refinery will therefore be increased from 190,000 bbl/day to 250,000 bbl/day.

## Large-scale use of two routes to phosphorus gives strength to Albright and Wilson group

USE of the two routes to phosphoric acid—the thermal route via phosphorus and the 'wet' process using sulphuric acid and phosphate rock—gives the Albright and Wilson group flexibility and a great source of strength. The thermal process is used at the Oldbury and Portishead works of Albright and Wilson (Mfg.) Ltd. and the 'wet' process at the newly expanded plant of Marchon Products Ltd., Whitehaven.

Low-cost production of sulphuric acid at Whitehaven based on mined anhydrite makes this site a favourable one for the use of the 'wet' process, compared with the thermal route, which depends on relatively expensive electricity. Under Marchon's recently completed expansion scheme, capacity for phosphoric acid needed for detergent phosphates has now risen from 50,000 tons/year to more than 93,000 tons/year.

### Further developments?

Last week the new sulphuric acid plant, which has boosted capacity from 100,000 to 170,000 tons/year, was opened by Lord Fleck (CHEMICAL AGE, 26 May, p. 857). Before Lord Fleck cut a tape to mark the opening of a new road on the site, to be known as Fleck Road, Mr. Frank Schon, Marchon's chairman, outlined the company's operations. Mr. Schon hinted that this new road might before long lead to new plants to be established in the future.

He said the Albright and Wilson group were the only U.K. producers of sodium tripolyphosphate and among the largest in the world. The product was made at Kirkby as well as at Whitehaven, but while Whitehaven production was based entirely on the 'wet' phosphoric acid process, the Kirkby plant of A. and W. (Mfg.) had in the past used only 'thermal'  $P_2O_5$  from phosphorus supplied from Oldbury and Portishead; now, however,  $P_2O_5$  derived from wet process phosphoric acid is supplied from Whitehaven in the form of orthophosphate liquor for use at Kirkby. The Whitehaven and Kirkby works produce similar quantities of tripolyphosphate (more than 50,000 tons/year each).

Mr. Schon was convinced that the combination of both processes in the same group was a great help to customers, who could buy sodium tripolyphosphate in the U.K. more cheaply than from producers in Germany, France or Italy. This was why he viewed Britain's projected Common Market entry with confidence. The A. and W. group's manufacturing programme for STPP was now running well ahead of an annual rate of 100,000 tons; the whole operations at Whitehaven were based on the

production of sulphuric acid from anhydrite by the Mueller-Kuehne process at a price as low as it could be made anywhere in the world from primary raw materials and lower than from acid made in the U.K. from imported sulphur, for which the price is under £5/ton.

The basic economies of the anhydrite process depend on volume and convenient availability of raw material. Mr. Schon pointed out that Marchon operated on a large scale and had unlimited supplies of anhydrite; he was convinced that they made sulphuric acid as cheaply as it was made anywhere in the world on a regular basis from primary raw materials. He was sure that in the second and third years, production would be larger than for the first full year of operation on the expanded plant, when more than 170,000 tons of acid and 170,000 tons of cement would be produced. This would improve their economy even further.

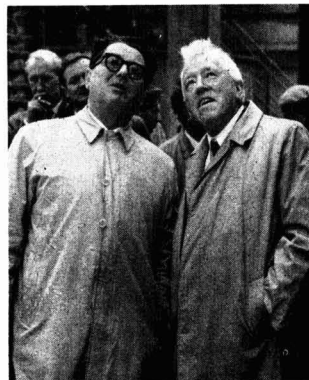
For their orthophosphate, Marchon need soda ash and all their supplies (2,000 tons a week) come from I.C.I., the sole U.K. producers. Mr. Schon declared that the I.C.I. sales price in the U.K. compared very favourably with that of producers in U.S., Germany, etc.

At Whitehaven, the anhydrite, cement and sulphuric acid plants are operated by Solway Chemicals Ltd., and the phosphoric acid and tripolyphosphate units by Marchon. The two companies have the same top management.

## Interchange of knowledge between U.K. anhydrite acid producers—Lord Fleck

WHEN Lord Fleck proposed the toast of 'Marchon Products Ltd.' at a luncheon held at the Whitehaven works to mark the opening of the new sulphuric acid plant last week he spoke of the wise and increasing use of Britain's anhydrite resources. He reminded those present that when he took over responsibility for I.C.I.'s Billingham works, acid production from anhydrite had already been established there, based mainly on German technology of the first world war period. I.C.I. also contributed to getting the process into smooth operation, and Lord Fleck acknowledged the work of Mr. C. S. Robinson, particularly on the sulphuric acid side. In addition, there was the work on the north-west coast, and tribute should be paid to the pioneer work of Dr. Kuehne.

Lord Fleck believed that some 20% of all U.K.-produced sulphuric acid now came from anhydrite. That was ample testimony to the fact that the process



Lord Fleck, right, who opened Marchon's sulphuric acid extensions at Whitehaven last week, tours the plant with Mr. Frank Schon, Marchon chairman

On a weekly basis, some 10,000 tons of anhydrite are mined, 6,000 tons of which are used to produce 3,500 tons each of sulphuric acid and cement. Up to 1,500 tons/week of 20's oleum can be produced in lieu of acid. To produce acid and cement calls for some 900 tons/week each of shale and coal; 450 tons/week of coke; 10 million gall. of water and 1 million kWh of electricity.

Phosphoric acid capacity represents 1,700 tons a week of  $P_2O_5$ , which is used to produce 2,400 tons/week of tripolyphosphate. Usage of phosphate rock is 5,000 tons a week.

In addition, Marchon and Solway use 10,000 tons/week of steam. Total water consumption at the Whitehaven installations is 33 million gall./week; with total coal consumption 1,500 tons/week; oil consumption 155,000 gall./week.

was economically attractive. He added that there was a co-operative spirit among anhydrite acid makers, particularly in the U.K. For some of them it might almost be called a club, whereby fresh knowledge and notes of advancing techniques were interchanged.

In his reply, Mr. Frank Schon, chairman of Marchon Products Ltd. and Solway Chemicals Ltd. and a director of Albright and Wilson Ltd., said that in the U.S. consumption in the home of all washing media, except toilet soap, was today more than 90% based on synthetic detergents. The same pattern of change from soap to detergents could also be seen in Europe.

The total value of synthetic detergents as sold over the counter and to industry in the U.K. now amounted to more than £80 million. Taking the cost of all manufactured goods in 1954 to be £100, the same goods in 1961 would have been worth £118; for soap the 1961 figure would be £133 and for detergents £98.

## Chemicals in Hungary

# PROGRESS REPORT ON 16 MAJOR PROJECTS

**T**OTAL Hungarian chemical output rose last year by 27% compared with that of 1960. Increased productivity accounted for 77.8% of the increase which, in turn, led to a 68% overall increase in exports—11% more than the target set at the beginning of the year. This year it is expected that Hungary's total chemical production will increase by some 18%, with 72% of the extra output stemming from higher productivity. At the same time, exports should rise by some 27% overall.

These figures were given recently by the Hungarian Minister of Heavy Industry, Sandor Czottnér, writing in *Magyar Kemikusok Lapja*. He also reported that no less than 16 major chemical projects begun during the past few years were now completed or nearing completion and due to come into operation by the year-end. Among them were:

1. A 100% expansion of the Borsod chemical combine, near Kazincbarcika, and the laying of a gas pipeline between Miskolc and Kazincbarcika which will enable the combine to turn over from coke to natural gas piped from Rumania.

### First p.v.c. plant

2. The country's first large-scale p.v.c. plant at the Barente chemical works, also at Kazincbarcika, where most buildings had been completed, and imported machine installations were in position by the end of 1961.

3. A new 120,000 ton/year sulphuric acid plant, which will use pure sulphur, at the Szolnok chemical works.

4. A superphosphate (effective content 18.5%) unit with a 200,000 ton/year capacity, also at the Szolnok chemical works, which has now begun test production.

5. An electrolytic caustic soda plant with a 10,000 ton annual capacity at the Hungária (Budapest) chemical works, which should reduce the cost of producing both caustic soda and chlorine by from 10% to 20% when it comes into operation.

6. A biochemicals unit at the Kőbánya pharmaceutical works.

7. The first stage in the expansion of the Nyergesujfalu Danulon (nylon) factory.

In addition, according to Mr. Czottnér, machine installations for the nitrogenous fertiliser factory under construction at Tiszapalkonya (CHEMICAL AGE, 25 November 1961, p. 855) are now being delivered by the Soviet Union. Reconstruction of the United chemical works was also begun in 1961, and the first new plants there for plasticisers and

fatty alcohol sulphates should be ready for test production by the end of this year.

Reconstruction of the Budapest sulphuric acid unit, begun in 1959, is also reported to be going ahead well. When completed, its annual output will be increased by 18,000 tons of sulphuric acid and 55,000 tons of superphosphate.

"We also began the production of a number of—for us—new products," Mr. Czottnér continues. "They included nitrous oxide—now being made on a large scale at the Borsod chemical combine—several lacquers with a synthetic resin base at Tiszapalkonya, fatty alcohols at the Péti nitrogen works, methyl chloride ether, at the Medicolor works, and the anion exchange resin made from that product."

Work at the heavy chemical research institute in 1961 was organised around two main subjects—the perfection of new plant protection agents and the development of instrument automation, Mr. Czottnér reports. The institute also investigated the possibility of producing cryolite from the by-products of superphosphate and put into operation an automatic alumina feeder at the Ajka alumina plant.

One of the main tasks of the synthetic materials research institute was continued research into the techniques of polythene production. During the year a continuous

polythene manufacturing installation, made by the institute, came into operation. During factory research on synthetic yarns at the Hungarian viscose factory, useful results were achieved with a shortened polymerisation of caprolactam.

Total capital investment in the chemical industry this year will be 20% above last year's, Mr. Czottnér states. The biggest proportion (40%) will go to the expansion of artificial fertiliser capacity. A further 20% will be spent on increasing output of synthetics and 12% on expanding pharmaceutical production.

Apart from the projects already mentioned, reconstruction of the Medicolor works at Veszprém is to be continued, and there are plans to commence reconstruction of the Forte works at Vác, which makes photographic chemicals. Designs will be ready by the end of the year for a power plant for the United pharmaceutical works, a fermentation plant for the Chinoin factory, and a caprolactam unit for the Borsod combine.

**Table 1. Output of some Hungarian chemical products in 1961**

	Output (tonnes)	% increase over 1960
Sulphuric acid ...	186,303	13.0
Superphosphates ...	327,174	22.9
Nitrogenous fertilisers ...	330,130	18.2
Caustic soda ...	18,776	10.6
Phenolic resin moulding powder ...	3,263	15.0
P.V.C. powder ...	321	65.5
Caprolactam ...	315	5.0
Vitamin B <sub>1</sub> ...	25,364 kg.	58.0
Vitamin B <sub>12</sub> ...	24,050 g.	165.0

**Table 2. Increased production of some products planned for 1962**

	% increase over 1961
Sulphuric acid ...	15.8
Hydrochloric acid ...	40.0
Caustic soda ...	57.5
Superphosphates ...	34.1
P.V.C. powder ...	16.7
DDT ...	29.7
Caprolactam ...	6.1
Danulon (nylon) fibre ...	8.0

## Bigger West German, but lower British chemical exports to Mexican market

**D**UE to her geographical advantage and the fact many U.S. chemical companies were the first to set up Mexican branches or obtained a lead through joint-venture companies, America is Mexico's largest trading partner, says the B.o.T. *Export Service Bulletin*. Germany, however, with no special advantages has secured a considerable overall share of Mexican imports and in chemicals has actually increased her percentage of the business available in recent years whereas the British share has diminished.

Shipping is the British exporters' only real handicap, there being only one British line with regular direct sailings compared with at least five from the Continent.

Some British items are very competitive in price while others are too expensive for the Mexican market. Foreign firms, however, seem to pursue more flexible price policies. Corresponding in English and using British measurements and money is also a disadvantage as the

metric system and the U.S. are normal Mexican standards and most firms there like to correspond in Spanish.

The British Embassy, Mexico City, maintains an index of representatives of British firms and information by U.K. principals can be sent direct there or via the export services branch, B.o.T., Lacon House, Theobald's Road, W.C.1.

### Catalogue of free loan D.C.L. industrial films

The Distillers Co. Ltd., 21 St. James's Square, London S.W.1, have issued a catalogue of some 16 films on aspects of their industrial activities available on free loan from their central publicity department (from which the catalogue is also obtainable) and chemical and plastics groups. Subjects include the production and applications of petrochemicals, carbon dioxide, plastics such as p.v.c., and polythene and the uses of resins, etc.

## Overseas News

# U.S. ANTITRUST LAWS MAY BE EXTENDED TO OVERSEAS INTEREST

IT is believed in certain quarters in the U.S. that the Kennedy administration may attempt to expand jurisdiction of domestic antitrust laws to cover international business of U.S. companies.

It is reported recently in *Chem. Eng. News* that H. Brownell, the Attorney General under the Eisenhower administration accused the present administration of fostering tariff, tax and antitrust policies that will discourage expansion of U.S. business in Western Europe. To lend substance to his belief that the Government may try to apply U.S. antitrust laws abroad, he cites remarks made by the Federal Trade Commission Chairman, P. R. Dixon, in a recent speech to a Detroit business group. In it Mr. Dixon expressed concern over joint ventures abroad by U.S. companies who normally compete in the domestic market. Mr. Dixon said that the F.T.C. must do more than merely challenge old practices but it must also observe and evaluate new ones which may be developing so that, if necessary, prompt action can be taken against them.

## Du Pont/Showa Neoprene agreement on Delrin

Du Pont and Showa Neoprene K.K. of Tokyo have signed an agreement whereby the Japanese company will import, use, make and sell Delrin acetal resin in Japan. Showa Neoprene are currently building a neoprene rubber plant in Japan but have not yet made any decision to build an acetal resins plant.

First news of this agreement was given in *CHEMICAL AGE*, 6 January 1962, p. 10. This represents the first overseas licensing arrangement by Du Pont for acetal resin.

## Du Pont begin construction of titanium oxide plant

Du Pont have started construction of a titanium oxide plant, which will have an ultimate capacity of 27,000 tons a year, at Antioch, Calif. The plant will be built in stages, the first of which is scheduled for completion by the autumn of 1963. The new unit will use Australian rutile as raw material and the route will be Du Pont's chloride process. Du Pont already make titanium oxide at Edge Moor, Del., Baltimore, Md. and New Johnsonville, Tenn.

## On stream dates for A.K.U. plant announced

Algemene Kunstzijde Unie NV have announced on stream dates for their new capacities in Holland. The DMT plant of the petrochemical part-subsidiary NV Petrochemie AKU-Amoco at Delfzijl, Holland, will come on stream in late 1963, the new Akulon plant at Emmen

and a linen-yarn works at Breda both in mid-1963 and the Hoogezand glass-fibres plant of NV Silenka AKU-Pittsburgh (another joint subsidiary) next spring.

## Toyo Rayon and Hoechst in polyester know-how deal

The Toyo Rayon Co. have concluded negotiations with Farbwerke Hoechst AG for an exchange of know-how on the manufacture of polyester fibres. The Japanese company will offer Hoechst details of a continuous polycondensation process in exchange for technical knowledge on the production of the improved polyester Trevira type W.A.

## Mitsui seek Government approval for use of Hoechst vinyl chloride monomer process

GOVERNMENT approval on their contract recently concluded with Farbwerke Hoechst concerning the manufacture of vinyl chloride monomer by the thermo-cracking of ethylene dichloride, is now being sought by Mitsui Chemical Industry Co.

According to the contract, the Japanese company will pay the equivalent of \$236,000 and a royalty of 59 cents per kg. up to 15,000 tonnes a year and 35 cents per kg. over 15,000 tonnes a year.

Mitsui Chemical plant to invest 1,600 million yen in their Nagoya factory. The first stage will have cracking capacity for 24,000 tonnes a year and polymerisation capacity of 15,600 tonnes due for completion in March 1963. The second stage, scheduled for completion a year later, will have a further 7,200 polymerisation capacity.

## More essential oils from Bulgaria

Bulgaria is to consolidate its position as a large-scale producer of essential oils, it is stated in East Berlin. Apart from rose oil, some 30 further essential oils are currently produced in Bulgarian plants. The country is the leading peppermint-oil producer in Europe.

## United Carbon bring Venezuelan carbon black plant on stream

United Carbon de Venezuela C.A., wholly-owned subsidiary of United Carbon Co., Houston, Tex., and various Venezuelan interests, have inaugurated a new 14 million lb./year carbon black plant near Caracas. Full-scale manufac-

## Cominco fertiliser expansion will be completed by 1964

Construction is to begin immediately at Kimberley, B.C., on the \$16-million expansion programme planned by the Consolidated Mining and Smelting Co. of Canada Ltd. and aimed at doubling the company's fertiliser capacity and trebling pig iron capacity (see *CHEMICAL AGE*, 19 May 1962, p. 818). The project is due for completion in 1964.

The new fertiliser capacity will almost duplicate the facilities installed at Kimberley in 1953. New units will include a roaster plant, a sulphuric acid plant, a phosphoric acid and ammonium phosphate plant and further storage and shipping facilities. Existing installations will be modified.

Products will include the ammonium phosphate fertilisers already produced at Kimberley together with other high-analysis phosphate fertilisers.

## Dow to build formaldehyde unit in Spain

Dow Unquinesa are to invest 18 million pesetas in the construction of a 16,500 tonne/year plant at Barcelona for the manufacture of formaldehyde. Equipment worth 7 million pesetas will be imported for the project.

It is understood that further plants to produce phenol and plastics will be erected at a later stage.

turing operations have now begun.

The new plant, which cost \$3 million, has been built primarily to serve local tyre manufacturers. It will, however, produce a surplus for export to other Latin American countries.

## Tennessee Eastman to build new solvents plant

Tennessee Eastman are to build new facilities to make methyl isobutyl ketone and methyl isoamyl ketone at Kingsport, Tenn. Capacity for the production of the two ketones will be about 20 million lb./year. The plant is scheduled to go on stream at the end of the year.

## Site chosen for Allied Chemical's TDI plant

Allied Chemical will build their new toluene diisocyanate plant at Oxnard, Calif. Capacity will be 15 to 25 million lb. a year, and construction, which is due to begin within the next few months, will be completed in 12 to 15 months from the start. Output of the plant, together with the increased capacity at the company's Moundsville, W. Va. facility, will bring Allied's total capacity to 40 to 50 million lb. a year.

## Overseas news

# New capacities for Erdölchemie and Farbenfabriken Bayer

**E**XPANSION capacities of the German petrochemical works Erdölchemie GmbH, Dormagen, are given by BP Benzol- und Petroleum-AG, of Hamburg, as the following: 70,000 t.p.a. ethylene; 70,000 t.p.a. propylene; 36,000 t.p.a. ethanol; 25,000 t.p.a. acrylonitrile; 12,000 t.p.a. isoprene; 12,000 t.p.a. isobutylene; a 15,000 t.p.a. expansion of the Dormagen CAA unit; and a 45,000 kW power expansion.

In their annual report for 1961 (CHEMICAL AGE, 21 April), the other parent company of Erdölchemie-Farbenfabriken Bayer AG—gave future investments in the petrochemical plant as worth some DM340 million. Current production capacities of the Dormagen plant are 45,000 t.p.a. ethylene, 40,000 t.p.a. propylene, 36,000 t.p.a. ethylene oxide, quantities of silver catalyst for ethylene oxide production, a total of 32,000 t.p.a. glycols (mono, di-, tri- and tetra-ethylene glycols and mono- and di-propylene glycol's), hydrofining units for 120,000 t.p.a. cracker benzene, 40,000 t.p.a. propylene and 220,000 t.p.a. C<sub>4</sub> fraction, 18,000 t.p.a. ethanol, 50,000 t.p.a. di- and triisobutylene, 16,000 t.p.a. propylene oxide, 45,000 t.p.a. butadiene and 36,000 kW electric power.

Most of the Erdölchemie products are delivered to Bayer for further processing, ethanol for solvents, ethylene oxide for use in textile auxiliaries and pesticides and for wax compounds production, propylene oxide for conversion to polyether and polyester for use in urethane foams, mono-glycol for use as alcohol component in polyester resins, butadiene for synthetic rubber and ethylene and propylene for chemical processing.

### Joint project for plastics research

A group of 10 packaging manufacturers plan to establish comprehensive technical collaboration in the plastics field with a research centre in Paris. The centre will be built at the Cotuplas Co. plant and the company itself will be reconstructed so that the 10 companies can finance a research programme. Sweden's largest packaging concern Akerland and Rausing are participating, as well as Swiss and U.S. interests. The share that each individual company will contribute will be decided at a meeting, to be held in Paris on 5 June.

### Eastman Kodak enter polyester film field

With the purchase of an extrusion plant in Orangeburg N.Y., from Terafilm, Eastman Kodak plan to enter the commercial polyester film market. Although Terafilm have already produced some polyester film on the site, Eastman say that commercial production will probably not begin until about mid-summer.

The Orangeburg plant will be supplied with resin by Tennessee Eastman, who will also operate the plant. The film will be marketed by Eastman's plastic sheeting sales division. Although the company make sensitised polyester film for photographic purposes, this is their first venture in polyester film for non-photographic uses. The major producers in this field are at present Du Pont and Goodyear. Minnesota Mining and Manufacturing Co. have introduced polyester film in experimental quantities.

## Lonza should complete new petrochemical facilities by March of next year

**L**ONZA, Basle, state in their annual report that, in the whole calendar year 1961, turnover of the mother company rose slightly over the 1950 level, home sales increasing by 9% and exports falling back to 20% of total sales (see also CHEMICAL AGE, 12 May, p. 781). The latter development is attributed to the introduction of the external tariff of the Common Market group, not compensated for by E.F.T.A. sales.

The construction of petrochemical capacities is in full swing and should be completed by mid-March, 1963. Production capacities for hydrogen cyanide derivatives are almost completed and commercial-scale production of germanium will start up in the very near future. The Lonza subsidiary Gotthardwerke AG, of Bodio, Switzerland, are to introduce new silicon carbide capacities during this summer.

New products brought into the Lonza programme during the year under report include new compounds in the acetic arylide and pyrazolon fields, derivatives of ethylene and ethylene oxide, polymer softening agents on a new basis, new complex fertilisers and a 20% production increase in the company's thermoplastics programme.

### New co-polymer material developed by B.A.S.F.

A new monomer starting product for plastics and lacquer bases, suitable for use as the plasticising component in copolymers, has been introduced by Badische Anilin- und Soda-Fabrik AG, Ludwigshafen-on-Rhine. The compound,

### Shawinigan petrochemical project on schedule

Full scale construction has now started on the \$20 million petrochemical plant being built at Varennes, Quebec, for Shawinigan Chemicals Ltd.

The companies responsible for the design and construction of the olefin unit, air operation plant and acetaldehyde plant are expected to move on to the site shortly. The project is on schedule and much of the apparatus will be ready for testing by November. The plant is expected to go into operation in February 1963.

### Work starts on Syrian fertiliser plant

First stage of construction at Syria's first fertiliser complex has begun and is due for completion by 1964; the second stage is due for 1969. The plant, which will produce some 110,000 tons of nitrogenous fertilisers, comes under a U.S.S.R.-Syrian trade agreement. The plant will be sited near the Homs refinery, which with capacity of 1 million tons/year, was built by Kralovopolska of Brno.

acrylic-2-ethyl-hexyl-ester, is a clear almost colourless liquid easily polymerisable to elastic masses of good adhesion potential, and is very suitable for copolymerisation with almost all vinyl compounds, including vinyl ethers.

### Allied Chemical plan Canadian foam unit

Allied Chemical Canada Ltd. are to build a \$4 million plant in Moore township, near Sarnia, Ontario, for the manufacture of urethane foam. The plant will be finished next year.

### Dutch titanium oxide plant on stream soon

The new titanium oxide plant of the Dutch company, NV Titaandioxyde-fabriek will come on stream in a few weeks. Construction of the plant has been according to plan.

### Dutch phthalic anhydride plant on stream soon

Chemische Industrie Uithoorn NV, of Uithoorn, Holland, will bring their new 5,000 t.p.a. phthalic anhydride unit on stream "in the middle of this year".

### Italian furfural plant to be auctioned

The plant at Giola Tauro, Italy, Olefici Calabresi, consisting of an olive-oil works and a unit for the production of furfural from olive-press waste, is to be sold by auction on 26 June. The starting price for the whole plant is given as 1,900 million lire.

## I.C.I. design bulk container in polythene

A PROTOTYPE intermediate bulk container with a capacity of 80 cu. ft. for the transport and storage of their own raw materials has been designed by I.C.I. Plastics Division in their Alkathene poly-



This intermediate bulk container, with capacity of 80 cu. ft. was moulded by the Engel process by Rosedale Associated Manufacturers Ltd. from I.C.I. Alkathene

thene. The body, which is made in one piece by the Engel process by Rosedale Associated Manufacturers Ltd., is one of the largest single mouldings so far produced in polythene.

This new development will, it is thought, greatly extend the scope of polythene in packaging and demonstrates its advantages and potentialities for very large containers.

## 'Instrument techniques in industry and research'

Eleven papers on 'Instrument techniques in industry and research' will be discussed at a joint meeting of the Scottish and North of England sections of the Society for Analytical Chemistry on 28 and 29 June at The Queen's University, Belfast. A symposium dinner will be held on 29 June.

Registrations are being handled by the hon. secretary of the Scottish section, Mr. J. Brooks, Research and Development Department, I.C.I. Ltd., Nobel Division, Stevenston, Ayrshire.

## Seminars on fluid mixing

Among the many overseas visitors expected for the forthcoming Chemical and Petroleum Engineering Exhibition is Mr. J. Y. Oldshue, director of research at Mixing Equipment Co. Inc., Rochester, U.S. Mr. Oldshue will be here as the guest of Lightnin Mixers Ltd., associated with the U.S. firm. During the exhibition Mr. Oldshue will conduct a number of seminars on fluid mixing.

## Fall in polish sales

U.K. makers' sales of polishes in the first quarter of 1962 totalled 183,000 cwt, valued at £3.8 million, representing falls of 4% in quantity and 3½% in value, according to the Board of Trade *Business Monitor*.

## In Parliament

# M.P. Criticises choice of two permitted additives for milk

IN an unsuccessful attempt to move the annulment on Monday of the Milk and Dairies (Emulsifiers and Stabilisers) Regulations, Dr. Barnet Stross (Lab., Stoke-on-Trent Central) criticised the inclusion among 10 permitted emulsifiers and stabilisers of "sorbitan esters of fatty acids and their polyoxyethylene derivatives" and "sodium carboxymethyl cellulose". A 1950 report had cast doubts on the use of these substances in food.

Mr. W. M. F. Vare, Parliamentary Secretary to the Ministry of Agriculture, said that although carboxymethyl cellulose had come under suspicion in the Chief Medical Officer of Health's report in 1950, it was later classified as not being dangerous to health by the Pharmacology Panel of the Preservatives Subcommittee.

The 1950 report referred to polyoxyethylene derivatives of fatty acids, which are prohibited in the regulations. The substances now permitted were also once viewed with suspicion, but polyoxyethylene derivatives of sorbitan esters of fatty acids were quite different from the polyoxyethylene derivatives of fatty acids themselves.

## Not enough work on microbiology, says M.P.

Questioned about the wisdom of having closed down the microbiology group of the National Chemical Laboratory, Mr. Denzil Freeth, Parliamentary Secretary for Science, on Monday declared that the Minister's advisers did not think that this was a wrong decision. They still believed that research of that kind was best undertaken in universities.

No research was being undertaken in Government laboratories in the microbiology of coal or petroleum. It was stated that more than 50 scientists were engaged in this work in the Soviet Union and that it was being carried out in

three or four U.S. departments. Mr. Freeth undertook to circulate to interested M.P.s details of work being carried out in research councils into the biosynthetic properties of microbes in the production of amino acids, fatty acids, enzymes and polysaccharides.

## New Scottish firm for heat exchangers

A NEW company in the Motherwell Bridge Holdings Group, Motherwell Bridge Thermal Ltd., has been formed to manufacture heat exchangers, condensers and other items of heat-transfer process plant for the chemical and petroleum industries.

Headquarters are at Uphall, Broxburn, West Lothian (Broxburn 501), in premises formerly occupied by Scottish Oils Limited, who will retain their offices, laboratory and vehicle maintenance depot at Uphall.

Director in charge of the new company is Mr. James McLean, formerly general manager of Motherwell Bridge and Engineering Co. Ltd.

## New company for Edgar Allen group

Edgar Allen and Co. Ltd., steelmakers, tool manufacturers and engineers, of Imperial Steelworks, Sheffield 9, have announced the formation of a new subsidiary company, Industrial Heat Exchangers Ltd., to design, fabricate and supply a wide range of heat-exchange plant and equipment to clients' specification. Alternatively, the company will provide consultant and design facilities as part of a comprehensive engineering service. Special attention will be paid to projects where the aim is to economise in the use of cooling-water and in the re-use of such water, the announcement added.

## B.A.S.F. introduce new nomenclature for resins

A NEW nomenclature for their range of Ultramid polyamide resins has been introduced by Badische Anilin- und Soda-Fabrik. The object of the decision is to obtain a sharp differentiation of qualities which can be easily recognised from the combination of letters and numbers of each grade.

The basic chemical structure will be described by A, B, and S for types 66, 6 and 610 respectively, the range of viscosity will be shown by a number and the individual specification, that is, crystalline, heat resistant, transparent, flexible, etc., will be shown by a further letter.

## U.K. computing centre available to industry

THE largest commercial analogue computing centre in Europe available for full time rental to industry was opened this month at Burgess Hill, Sussex. It employs two fully-expanded Pace 231R analogue computers of the type now in general use with major industrial concerns in Europe and, as a small scale pilot centre at the end of 1961, was fully committed on problems for British industry.

Staffing is undertaken by Electronic Associates Ltd., a manufacturing organisation with a highly trained group on the development of computer equipment.

# Equipment news and trends

**STEAM-TRACED** aluminium pipe, a new type of pipe for speeding the flow of highly viscous substances needing heat to prevent solidification or sluggishness in the process line, is said to do away with the need for two contiguous pipes, one for the process liquid and one for the steam, surrounded by an insulating jacket. Steam-traced pipe incorporates both steam and process lines integrally in one pipe, its construction ensuring that heat passes directly and efficiently into the pipe wall of the process line. The area of contact between the two sections is greater than in the two-pipe system and the high thermal conductivity of aluminium results in greater heat transfer. Other advantages claimed are reduced heating costs and easier temperature control. Among substances which can be used safely in contact with the pipe are concentrated acetic acid, liquid sulphur, ammonium nitrate, tar, glycerine, waxes and some fatty acids.

**British Aluminium Co. Ltd., Norfolk House, St. James's Square, London S.W.1.**

A new **direct-reading automatic titrator**, which measures the amount of titrant in micrograms and displays the result digitally, also has facilities for automatic print out. The instrument consists of three parts; a precision stabilised current source, a timing device and a potentiometric system for detecting endpoints. A selector is provided, calibrated in equivalent weights, to enable the instrument to give a direct reading regardless of the particular substance under examination.

**Nash and Thompson Ltd., Oakcroft Road, Chessington, Surrey.**

A new **weight-cum-volume recording equipment** for use in determining the specific gravity of fluids incorporates a system of automatic process control based on digital information directly obtained from standard weighing machines. The equipment comprises a weighing machine with an optical digitiser to transmit electrical impulses to the recording mechanism; a volume indicator which, actuated by a float control, can determine volumes up to 2,000 litres, to-



The new way, below, in aluminium steam-traced pipe

gether with a second digitiser; a console which contains the print-out unit, the weight and volume counter units, and power supply units; and a lamp panel. The equipment records the date and batch reference for every blend, followed by individual records of weight and volume for each material.

**Microcell Ltd., 9 Kingsway, London W.C.2.**

**Silicone-treated chromatograph support materials** are now being offered as a means of overcoming the 'tailing' commonly experienced in gas chromatography, which is caused by the presence of hydroxyl groups on the surface of the support material, the tendency being for these to form weak bonds with organic compounds containing oxygen. Reacting the hydroxyl groups with a silicone compound is claimed to be more effective than washing the support materials with acid and alkali, as is often done, since it replaces reactive sites with completely inert paraffin groups. Other benefits are said to include shorter analysis times and higher column efficiencies.

**Silicoat Supports, 25 Ratcliff Road, London E7.**

An entirely new type of **pipeline valve** with the McEvoy automatic self-sealing system embodied in a simplified and wholly fabricated body, so that it is fully competitive with pipeline valves employing conventional sealing methods, has been introduced. The system, which has previously been applied only to smaller well-head valves (its use on pipeline valves having been restricted by the relatively high cost of manufacture), is the result of over three years' development work and detailed analysis and improvement of production techniques.

The main advantages claimed for the system are 100% pressure-tight sealing,

little or no seat water, no wedging and no necessity to force the gate.

**Newman Hender Group, Woodchester, Stroud, Glos.**

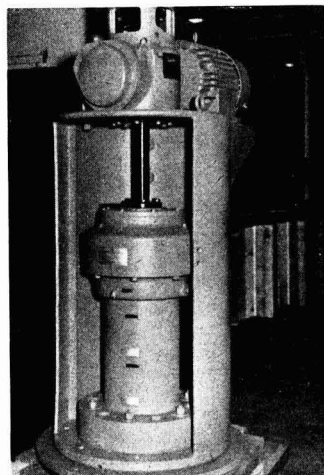
Marketed as the Viscount, a solid state **temperature controller** operates on a new principle and affords a three term control together with very high stability. It is suitable for operation at 100° C together with extreme vibration, the makers state, and is designed for applications calling for precise control and having extreme conditions. The same company have introduced a portable potentiometer, the Mervyn, for stringent operating conditions.

**West Instrument Ltd., 10 St. George's Place, Brighton 1, Sussex.**

The Testomat **water hardness monitor** recently placed on the market automatically samples softened water supplies at 10-minute intervals, the critical period during which a break-through of hardness may occur. A green light is displayed on the front of the instrument when the water is soft, while a red light indicates hardness. Thus, the water quality is always apparent at a glance.

**Electronic Switchgear (London) Ltd., Hitchin, Herts.**

Lightnin Mixers Ltd. can now offer their range of **fluid mixers with double mechanical seal cartridges** capable of operating at pressures of up to 5,000 p.s.i. Hitherto a pressure of no more than 1,000 p.s.i. has been considered high for the use of a mixer. The new seals, all of which are said to be fully factory



Double seal cartridge in place on mixer shaft

tested and to require no 'running-in' time, are being manufactured by Lightnin themselves, and are available on Lightnin top-entry mixers of all horse-powers.

**Lightnin Mixers Ltd., London Road South, Poynton, Cheshire.**



● The composition of a committee set up by the Government to review the organisation for the promotion of civil science by Government agencies has been announced. The members will be: **Mr. B. St. J. Trend**, Second Secretary, Treasury (chairman); **Sir Keith Murray**, chairman of the University Grants Committee; **Sir Thomas Padmore**, Second Secretary, Treasury; **Lord Todd, F.R.S.**, chairman of the Advisory Council on Scientific Policy; **Mr. F. F. Turnbull**, Secretary, Office of the Minister for Science; **Professor C. H. Waddington, F.R.S.**, Professor of Animal Genetics, University of Edinburgh; and **Dr. E. G. Woodroffe**, director, Unilever Ltd.

The committee is to consider whether any changes are desirable in the functions of the agencies, for which the Minister for Science is responsible, concerned with the formulation of civil scientific research, and whether any new agencies should be created.

● **Mr. W. Amor**, works manager, Turners Asbestos Cement Co. Ltd., Widnes, retired on 31 May, after 43 years' service with the firm. He has been works manager at Widnes for 13 years and after his retirement will be retained as consultant with special reference to expansion.

● **Mr. David Christison** will succeed **Mr. J. W. Bartholomew** as manager of the Coryton refinery of Mobil Oil Co. Ltd. on 1 August. Until then he will work with Mr. Bartholomew, who has been refinery manager since 1960. Before his transfer to Coryton, Mr. Christison was manager of Mobil's Buffalo refinery, New York.

● **Mr. R. B. Madden**, a director of Mobil Chemicals, has been appointed to the board of their wholly-owned subsidiary, Erinoid Ltd. **Mr. R. E. Kreider** has been appointed to the boards of both companies.

● **Mr. W. A. Kermer** has been appointed deputy chairman of Novadel Ltd.

● **Mr. D. D. Moir** has been elected president of the Association of Public Analysts. Other officers for 1962-63 are: vice-president, **Mr. A. L. Williams**; past presidents, **Dr. J. H. Hamence**, **Mr. J. G. Sherratt** and **Mr. H. E. Monk**; hon. treasurer, **Mr. R. C. Spalding**; hon. secretary, **Mr. F. A. Lyne**; assistant hon. secretary, **Mr. C. N. Grange**; hon. editor, **Dr. E. C. Wood**.

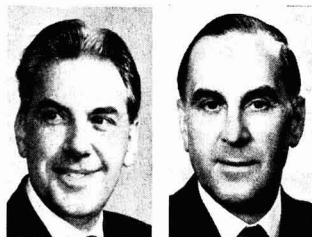
● **Mr. James G. Smith**, aged 62 and director of sales and development of fibres for Courtaulds Ltd. and British Celanese Ltd. since 1952, has resigned on health grounds.

● **Mr. W. G. B. Grant**, Scottish area manager for CIBA Clayton Ltd., Manchester, has been appointed managing director. He succeeds **Mr. G. H. Carnall** who relinquishes that position on 1 June; Mr. Carnall remains on the board.

● **Mr. Don Perry**, deputy factory manager at the Stork margarine works of Van Den Berghs and Jurgens Ltd., Bromborough, has been appointed technical director of the Unilever associated

# PEOPLE in the news

company, Price's (Bromborough) Ltd., in succession to **Dr. W. E. Hugh**, who is retiring. Mr. Perry, who has been assisting in the £3.5 million reconstruction of the margarine works, will now be involved in expansion at Price's who increased their production of oleochemicals and fatty derivatives from 15,000 tons a year in 1947 to an expected 53,000 tons in 1962. As technical director he will also serve on the Soap, Candle and Edible Fat Trades Employers' Federation and the industry's Joint Industrial Council. He was development manager at Price's from 1955 to 1959, when he joined the Stork works.



D. Perry

H. M. Stanley

● **Dr. H. M. Stanley**, controller of the development division of the Distillers Co. Ltd., has been appointed to the board of British Hydrocarbon Chemicals Ltd.

● **Dr. J. R. A. Pearson**, assistant director of research in chemical engineering at Cambridge University, has been elected a fellow of Trinity College, with effect from 1 October.

● **Sir Robert Robinson, O.M., F.R.S.**, is to visit South Africa in July to attend the golden jubilee celebrations of the South African Chemical Institute.

● **Dr.-Ir. F. Prakke**, vice-president of American Enka Corporation, U.S. subsidiary of Algemene Kunstzijde Unie NV, Arnhem, Holland, will on 1 October join the board of A.K.U. **Mr. A. J. Engel, Ir.**, **Dr. H. J. Abs** and **Mr. A. E. J. Nysingh** have been appointed, directors of the Dutch concern, while **Mr. A. H.**

**Ingen Housz, Ir.**, and **Dr.-Ir. T. S. G. J. M. van Schaik** have resigned their directorships.

● **Mr. D. A. Young** has, at his own request, resigned as a director of Lundell (Great Britain) Ltd., Lundell Chemicals and Bulk Milk Installations.

● **Mr. Lawrence E. Morey** has been appointed managing director of Mead Johnson Ltd., Morris House, Berkeley Square, London W1, in succession to **Mr. C. G. Cornell** who is returning to Canada shortly to take up an important appointment with Mead Johnson of Canada Ltd.

● **Mr. G. N. Hodson, M.B.E., J.P.**, chairman and managing director of the Shaw-Hathernware group and a prominent figure in both the ceramic and chemical engineering fields, presided over the VIIIth International Ceramic Congress held in Copenhagen from 21 to 26 May. Mr. Hodson was acting in his capacity as president of the European Ceramic Association—the first Englishman to hold the office. Among his other committee posts, past and present, have been the chairmanship of the British Chemical Plant Manufacturers' Association and currently that of the Chemical Engineering Group, S.C.I.

● **Mr. L. F. Cooke**, sales manager of Cambridge Instrument Co. Ltd., has been elected to the board. He will continue, for the time being, in his present executive position.

● **Mr. W. H. Higginbotham**, chairman of Edgar Allen and Co. Ltd., has been appointed chairman of their new subsidiary, Industrial Heat Exchangers Ltd. (see p. 901). Other directors are **Mr. W. J. McBride**, who is also director in charge of development and research of Edgar Allen and Co., and **Mr. C. E. B. Cooper**.

● **Dr. J. A. Berriman**, until recently general manager of the Carrington works of Petrochemicals Ltd., Shell Chemical Co.'s principal manufacturing subsidiary, has succeeded **Mr. E. le Q. Herbert** as managing director of the Shell Refining Co. Ltd. following Mr. Herbert's retirement on 1 June.

● **Sir Geoffrey Gibbs** has resigned the chairmanship of the Export Guarantees Advisory Council. He has been succeeded by **Mr. J. N. Hogg**, deputy chairman.

● The following have been elected officers of the British Chemical and Dyestuffs Traders' Association for 1962-63: President, **Mr. G. S. Bache** (James Beadel and Co. Ltd.); vice-president, **Mr. C. W. Lovegrove** (Chas. Page and Co. Ltd.); chairman, **Dr. C. J. Bell** (Chas. Zimmermann and Co. Ltd.); vice-chairman, **Mr. Kingsley Williams, J.P.** (K. W. Chemicals Ltd.); hon. treasurer, **Mr. J. Berthoud** (R. W. Greeff and Co. Ltd.); council, **Mr. D. A. Gates** (Bush, Beach and Segner Bayley Ltd.), **Mr. G. H. Owtram** (Chas. Page and Co. Ltd.), and **Mr. H. R. Peters** (J. M. Steel and Co. Ltd.); hon. auditor, **Mr. A. R. Sparrow** (Victor Blagden and Co. Ltd.).

## Commercial News

### British Glues and Chemicals

British Glues and Chemicals Ltd. have purchased for cash the second 50% of the share capital in Wm. Oldroyd and Sons Ltd., of which the first 50% was purchased three years ago.

### Greeff-Chemicals

Disappointment at the results of the trading profits were expressed by the chairman of Greeff-Chemicals Holdings Ltd. in the company's annual statement (see CHEMICAL AGE, 12 May, p. 781), although the chairman adds they were not unexpected. Expenditure has been incurred on new developments which are expected to be productive in the future. The turnover for the operating company in 1961 exceeded slightly that of 1960.

Conditions in the industry continue difficult, but volume of business has so far been maintained. The directors remain confident as to the future.

### American Viscose

American Viscose are interested in forming a merger with another company and have been holding talks with Stauffer Chemical; so far nothing definite has come from the discussions. American Viscose have also held exploratory talks with a number of other companies, including Allied Chemical, Minnesota Mining and Celanese of America, but nothing concrete has come from those talks either.

One reason for American Viscose's interest in a merger is that they are looking for ways of distributing their shares of Monsanto stock, worth about \$162 million. A merger would enable the company to distribute the shares so that they would be taxed as capital gains rather than as ordinary dividend income.

### Antar

Net profit of the Antar oil refinery group for 1961 amounted to NF8.29 million and gross dividend to NF4.50 a share. The company refined 2.78 million tons of crude oil during the year (2.45 million tons) and turnover rose from NF1,163 million to NF1,260 million.

### Australian Carbide

Net profit of Australian Commonwealth Carbide for the year to 31 January was £23,697 (against £28,336). Dividends declared on the Preferred Ordinary and Deferred shares are 2s 6d and 1s 3.54d a share respectively (both same).

### Berre

Profit for 1961 of Berre (Produits Chimiques et Raffineries) of France totalled NF8.2 million (NF6.6 million). Dividend is 8% (7%).

### Canadian Industries

Consolidated sales of Canadian Industries Ltd. and their subsidiary companies for the first quarter of 1962 were slightly

- British Glues acquire Wm. Oldroyd
- Greeff-Chemicals sales maintained in 1962
- American Viscose may merge with Stauffer
- Edison chemical sales rise by 18%

above the corresponding period in 1961 and net income also showed an improvement, it was reported at the company's annual general meeting held recently in Montreal. Indications were that sales of most C.I.L. products would continue at the current higher levels and it was expected that the improvement in earnings would be maintained.

Sales of chemicals, polythene, paints and coated fabrics had shown steady gains but replacement of nitroglycerine explosives by blasting agents based on ammonium nitrate continued to cut sharply into C.I.L.'s explosives business.

Growth in world markets for Terylene fibre had continued during the quarter and there was a good possibility that exports would increase during 1962. Sales of sulphuric acid, caustic soda, chlorine and ammonia had all advanced.

Markets for polythene continue to grow and the expanded Edmonton polythene plant has been producing at full capacity to fill requirements. Substantial export orders were filled in the first quarter but the developing Canadian market, and C.I.L.'s improved ability to supply it, indicate the company will become less dependent on exports for capacity operations.

Mr. Peter C. Allen, chairman of the board drew shareholders' attention to the Tariff Board hearings on chemicals currently under way and said that C.I.L. had recommended the adoption of a uniform and adequate level of rates for organic chemicals which should not be less than 20% under the "most favoured nation" schedule.

### Clin-Byla

The French pharmaceutical firm Clin-Byla are to increase their capital to NF25 million by a three-for-10 rights and scrip issue. Profits for 1961 were NF3.82 million and the net dividend is NF5.50 a share. The company has taken a 20% share in Produits Chimiques et Matières Colorantes de Mulhouse, a member of the Kuhlmann group.

### Du Pont

Du Pont have postponed action of the disposal of their General Motors stock because they say they need more tax information before they can develop an appropriate divestiture programme. Divestiture of the 63 million shares must begin by the end of July, and the board plans to discuss the matter further in the near future.

### E.N.I.

The Italian State-owned oil concern E.N.I., are to invest a total of 205,000 million lire in 1962, the expenditure on

various sectors of their activities to approximate the proportions recorded for 1961. Last year, some 23,000 million lire were spent out of 132,000 million lire total investments on petrochemical developments; the petrochemical investments of E.N.I. for 1962 can be worked out roughly from this. Furthermore, E.N.I. state that over the four-year period 1952/65, inclusive, total investments on all sectors are to be of some 663,000 million lire.

### Edison S.p.A.

The Italian chemical and power company Edison S.p.A., of Milan, announce for last year an increase in chemical sales over 1960 of 18.6%. The company, among whose products are petrochemicals, synthetic fibres, plastics, fertilisers, ammonia and organic acids, recorded for 1961 net profit of 15,880 million (14,260 million) lire after depreciation of 5,500 million (5,000 million) lire and is to pay a dividend of 64% (same) on a capital of 240,000 million lire. An extraordinary general meeting has just approved the increase of this latter figure to 276,000 million lire by the raising of the nominal value of shares from 2,000 to 2,300 lire.

### Hoffman-La Roche

F. Hoffman-La Roche und Co., Basle, announce a dividend of S.Fr.160 (S.Fr.140) for 1961/62. Net profit was S.Fr.18.57 million (S.Fr.15.21 million).

### Kali Chemie

Turnover of Kali Chemie AG, Hannover, for 1961, including returns from subsidiaries, was DM225 million, an increase of 3.6% in rate of growth. This figure corresponds with the average rate of growth figure for the entire chemical industry.

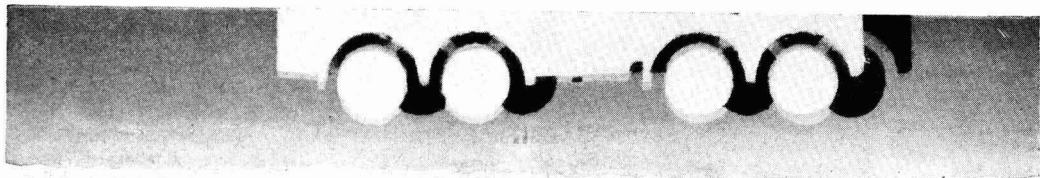
Kali, who formerly concentrated on production of superphosphates and fertilisers, have of recent years gone over to general chemical production and have expanded production in several directions during the past year in co-operation with American partners, among them Allied Chemical. Superphosphates and fertilisers now account for about half of production. Exports account for 28% of the company's business.

In 1961 the company invested DM35 million in new plant and equipment. The management are concerned over profits which are being seriously influenced by wage costs.

### L'Air Liquide

Profit of L'Air Liquide for 1961 was

(Continued on page 906)



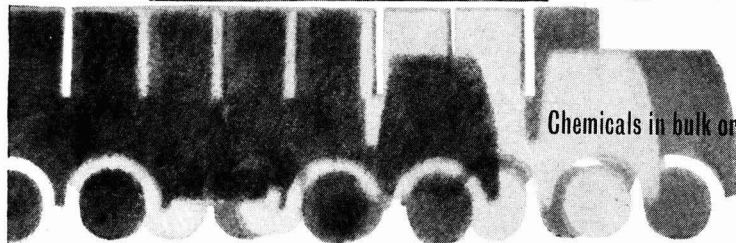
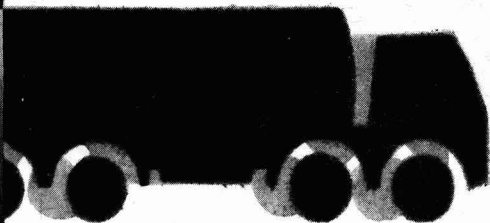
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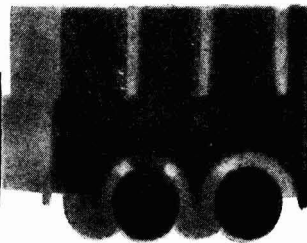
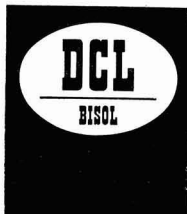
**The Distillers Company Limited**

CHEMICAL DIVISION

BISOL SALES OFFICE:

Devonshire House, Piccadilly, London, W.1

Telephone: MAYfair 8867



## COMMERCIAL NEWS

(Continued from page 904)

NF27.1 million against NF25.2 million the year before. The net dividend is NF7 a share against NF6.5.

### Nobel-Bozel

Dividend of Nobel-Bozel for 1961 is NF3 a share (same) from net profits of NF6.93 million (NF5.88 million).

### Pechiney

Pechiney net profit for 1961 was NF43.9 million; dividend is NF3.70. Pechiney's chemical output was up 14%.

Saliniere de la Camargue, a Pechiney subsidiary, had a 1961 net profit of NF2.1 million (NF1.9 million). Dividend is NF3.13.

### Petroles d'Aquitaine

Profits of Pétroles d'Aquitaine for 1961 rose to NF55 million from NF27 million in 1960. The dividend is to be NF1.85 a share (NF1.25). Turnover increased to NF500 million from NF348 million the year before, and further expansion is expected for the current year.

### Pierrefitte

Profit of Pierrefitte of France for the 18 months to 31 December was NF6.2 million (NF4.1 million for 12 months). Dividend is 10.5% (7%).

### Reichhold-Beckacite

The Reichhold-Beckacite paint and plastics group propose to increase their capital to NF18.9 million by a one-for-two rights issue. The company has just completed building a new factory at Niort where it is already manufacturing maleic anhydride and synthetic resins and plans to install a formaldehyde plant.

### Reichhold Chemie

Reichhold Chemie are planning to increase their capital by Sch.2 million to Sch.20 million.

### Rhone-Poulenc

Turnover for first four months of 1962 was up by 8% for chemicals and by 14.5% for textiles. Progress of profits is reported to be slower than that of sales, say Rhone-Poulenc.

### Texas Butadiene

Texas Butadiene and Chemical International have acquired half of the Sch.20 million capital of a new Austrian public company, Merkur Gummiewerke, who were formerly known as Gummwarenfabrik O. Schmidt, Firma Tabruk, who owned the company, have retained the remaining 50% of the new capital.

### NEW COMPANY

CHATFIELD APPLIED RESEARCH LABORATORIES LTD. Cap. £100. Scientific, consulting, analytical and research chemists and chemical engineers, etc. Directors: H. W. Chatfield and D. J. Chatfield. Reg. office: 13 Stafford Road, Croydon.

## TRADE NOTES

### Oleochemicals in building

In their ninth technical publication describing uses of oleochemical products in industry, Price's (Bromborough) Ltd., Bromborough Pool, Bebington, Wirral, Cheshire, have summarised a quantity of valuable information dealing with the use of fatty acids in particle coating and in the waterproofing of cement-based structures.

### German deal for William Boby

Electrodialysis equipment and plant designed by William Boby and Co. Ltd., Rickmansworth, Herts, is to be marketed in Western Germany by Karl Klein and Sohn, of Mannheim. A second agreement between the two companies provides for the manufacture by William Boby of Karl Klein mixed-bed units for small applications.

### Polythene bottles

The 1 gall. and  $\frac{1}{2}$  gall. square polythene bottles which Cascelloid, Abbey Lane, Leicester, added to their range, have been improved by the substitution of a polythene cap for the urea cap previously specified. These bottles can now be used for many more chemicals. A polythene carrying handle is an optional extra.

### New branch for I.M.P.A.

I.M.P.A. Ltd., of Bury, fabricators, machinists and suppliers of industrial plastics, have opened additional premises at Lydney, Glos, to supply areas west of London, south-west England and South Wales.

The new premises will also be used for the manufacture of a range of I.M.P.A. products such as valves, tanks, pumps and fans in plastics materials. The address is: I.M.P.A. Ltd. (Southern Area), Trading Estate, Lydney, Glos (telephone Lydney 492/493).

### B.B. Chemical

From 1 June 1962, B.B. Chemical Co. of Leicester will be known as Bostik Ltd. The subsidiary companies in Australia, South Africa, the Republic of Ireland and New Zealand will also change their names to incorporate the name Bostik.

### Bentone gellants

The properties and uses of Bentone gellants for paints, plastics, printing ink, adhesives and allied industries are laid out in a new booklet published by Abbey Chemicals Ltd.

The booklet is the first of a series of technical information leaflets and is available from F. W. Berk Ltd., Berk House, 8 Baker Street, London W.1.

### Industrial oil-fired heating

A new leaflet on the Turbo-Static oil-fired heater is available from Colt Ventilation Ltd., Surbiton, Surrey. It is claimed that, because of the method of oil firing used, the Colt heaters are small and compact for their output. Performance details and dimensions given in the leaflets are stated in metric measurements

as well as the equivalent English measurements.

### Changes of address

Vokes Ltd., filtration engineers of Guildford, will move their London office from 123 Victoria Street, S.W.1 to 21 Albert Embankment, S.E.11 (Reliance 1893) on 18 June.

All stages of the move of the General Electric Co. Ltd. from Magnet House, Kingsway, London W.C.2, will be completed by 4 June when central marketing, export accounts, Government and railways department, house engineers and overseas administration will be at Kemble House, Kemble Street, Kingsway. Directors' offices are now in Glen House, Stag Place, Victoria, S.W.1. The head office is already transferred in part to its new address at Greycoat House, Greycoat Place, Victoria.

Furzehill Laboratories Ltd. and their subsidiary, British Watch Timers Ltd., have moved to new premises at Theobald Street, Borehamwood, Herts (Elstree 4331).

### New telephone number

Telephone number of the Du Pont Co. (United Kingdom) Ltd., 76 Jermyn Street, London S.W.1, has been changed to Trafalgar 7090.

### Esso butyl rubber

Three new Technical Information Sheets are available from Esso Petroleum Co. Ltd., Chemicals Department, 50 Stratton Street, London W.1. Sheet B-50 ('Improved butyl caulking compounds using Buton resin') discusses the advantages of the addition of a small quantity of Buton resin to butyl rubber caulking compounds. Sheet B-5L ('The effects of carbon black loading on the dynamic properties of Esso butyl') deals with the means by which the dynamic properties of butyl can be altered by the proper selection of the type and amount of carbon black. How the hardness of Butyl HT can be increased by blending with high styrene resins is discussed in Sheet B-52 ('High hardness Enjay Butyl HT compounds').

### I.C.I. to raise £5 million in Switzerland

A loan of Sw.F.60 million (£4.94 million) is to be raised by I.C.I. on the Swiss market with an interest of 4 $\frac{1}{2}$ % per annum. Handling the operation will be the usual issuing combine of the main Swiss banks. These funds will be used by I.C.I. for the expansion of their overseas activities.

### B.A.S.F. in pictures

'B.A.S.F. in pictures' is the title of a new 70-page booklet illustrating the activities of Badische Anilin und Soda-Fabrik AG. Captions are printed in English, French and Spanish. It is stated that about 5% of the company's turnover in recent years (DM125 million in 1961) is spent on research.



### Completes the picture

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# BRITISH CHEMICAL PRICES

## GENERAL CHEMICALS

**Acetic Acid.** 10-ton quantities, 80% tech. in bulk, £73 per ton; in casks, £86 per ton; 80% pure in bulk, £79; in casks, £90; glacial, 98/100% in bulk, £88; in drums, £95.

**Acetic Anhydride.** In bulk, £108; drums, £115; carboys, £130; demijohns, £130.

**Alum.** Ground, f.o.r., about £25.

**MANCHESTER:** Ground, £25.  
**Aluminium Sulphate.** Ex-works, d/d, £15 10s to £18.

**MANCHESTER:** £16 to £18.

**Ammonia, Anhydrous.** Per lb., 1s 9d-2s 3d.  
**Ammonium Chloride.** Per ton lot, in non-ret. pack, £33 2s 6d.

**Ammonium Nitrate.** D/d, 4-ton lots, £37 10s.

**Ammonium Persulphate.** Per cwt., in 1-cwt. lots, d/d, £6 13s 6d; per ton, in min. 1-ton lots, d/d, £123 10s.

**Ammonium Phosphate.** MAP., £106 per ton; DAP, £100 10s, per ton, d/d.

**Antimony Sulphide.** Per lb., d/d UK in min. 1-ton lots; crimson, 5s 8d d/d to 6s 2d; golden, 3s 11d d/d per lb. to 5s 4d d/d.

**Arsenic.** Ex-store, £45 to £50.

**Barium Carbonate.** Precip., d/d, 4-ton lots or more, bag packing, £37 10s, per ton.

**Barium Chloride.** 2-ton lots, £45.

**Barium Sulphate (Dry Blanc Fixe).** Precip. 2-ton lots, d/d, £36.

**Bleaching Powder.** Ret. casks, c.p. station, in 4-ton lots. £30 7s 6d.

**Borax.** Ton lots, in hessian bags, c.p. Tech. anhydrous, £60 gran., £45 10s; crystal £49; powder, £50; extra fine powder, £51; BP gran., £88; crystal, £97; powder, £94 10s; extra fine powder, £96 10s. £1 cheaper in 5-ply paper bags.

**Boric Acid.** Ton lots, in hessian sacks, c.p. Comm., gran., £75; crystal, £85; powder, £82 10s extra fine powder, £84 10s; BP gran., £88; crystal, £97; powder, £94 10s; extra fine powder, £96 10s. £1 cheaper in paper bags.

**Calcium Chloride.** Ton lots, in non-ret. pack; solid and flake, about £15.

**Chlorine, Liquid.** In ret. 16-17 cwt. drums d/d in 3-drum lots, £41.

**Chromic Acid.** In 1-ton lots, per lb., 2s 2½d.

**Chromium Sulphate, Basic.** Powder, d/d, 1 ton lots £77.

**Citric Acid—Granular.** In kegs, 1-4 cwt. lots, per cwt., £7 7s; 5-19 cwt. lots, per cwt., £7 6s; 1-ton lots, per cwt., £7 5s; packed in paper bags, 1-4 cwt. lots, per cwt., £7; 5-19 cwt. lots, per cwt., £6 19s; 1-ton lots, per cwt., £6 18s.

**Cobalt Oxide.** Black, per lb., d/d, bulk quantities, 13s 2d.

**Copper Carbonate.** Per lb., 3s 6d.

**Copper Sulphate.** £79 per ton less 2% f.o.b. Liverpool.

**Cream of Tartar.** 100%, per cwt., about £11 12s.

**Formaldehyde.** In casks, d/d, £40.

**Formic Acid.** 85%, in 4-ton lots, c.p., £91.

**Glycerine.** Chem. pure, double distilled 1.267 s.g., per cwt., in 5-cwt. drums for annual purchases of over 5-ton lots and under 25 tons, £9 12s. Refined technical grade industrial, 5s per cwt. less than chem. pure.

**Hydrochloric Acid.** Spot, per carboy, d/d (according to purity, strength and locality), about 12s.

**Hydrofluoric Acid.** 60%, per lb., 1s 6d-1s 10d.

**Hydrogen Peroxide.** Carboys extra and ret. 27.5% wt., £115; 35% wt., d/d, £138.

These prices are checked with the manufacturers, but in many cases there are variations according to quality, quantity, place of delivery, etc. Abbreviations: d/d, delivered; c.p., carriage paid; ret., returnable; non-ret. pack., non-returnable packaging; tech., technical; comm., commercial; gran., granular.

All prices per ton unless otherwise stated

**Iodine.** Resublimed BP, under 1 cwt., per lb., 11s 6d; for 1-cwt. lots, per lb., 11s 3d.

**Iodoform.** Under 1 cwt., per lb., 24s 1d; for 1-cwt. lots, per lb., 23s 5d; crystals, 3s more.

**Lactic Acid.** Edible, d/d, 50% by wt., per lb., 16½d; 80% by wt., 26½d; C.P., 50% by wt., per lb., 14½d; 80% by wt., 23d; dark ex-works, 44% by wt., per lb. 9d. 1-ton lots, loaned containers.

**Lead Acetate.** White, about £154.

**Lead Nitrate.** 1-ton lots, about £135.

**Lead, Red.** Bases prices: 15-cwt. drum lots, Genuine dry red, £97 per ton; orange lead, £109 per ton; Ground in oil: red, £119; orange, £131.

**Lead, White.** Bases prices: in 5-cwt. drums, per ton for 2-ton lots, Dry English £109 15s; Ground in oil, £130 5s.

**Lime Acetate.** Brown, ton lots, d/d, £40; grey, 80-82% ton lots, d/d, £45.

**Litharge.** In 5-cwt. drum lots, £99.

**Magnesite.** Calcined, in bags, ex-works, about £21.

**Magnesium Carbonate.** Light, comm., d/d, 2-ton lots, £84 10s; under 2 tons, £97.

**Magnesium Chloride.** Solid (ex-wharf), £20 6s per ton.

**Magnesium Oxide.** Light, comm., d/d, under 1-ton lots, £245.

**Magnesium Sulphate.** Crystals, £15, ex-works.

**Mercuric Chloride.** Tech. powder, per lb., for 1-ton lots, in 28-lb. parcels, 19s 5-cwt. lots, in 28-lb. parcels, 19s 6d; 1-cwt. lots, in 28-lb. parcels, 19s 9d.

**Mercuric Sulphide, Red.** Per lb. for 5-cwt. lots in 28-lb. parcels, £1 10s 6d; 1-cwt. lots, in 28-lb. parcels, £1 11s.

**Nickel Sulphate.** D/d, buyers UK, nominal, £170.

**Nitric Acid.** 80% Tw., £35 2s.

**Oxalic Acid.** Home manufacture, min. 4-ton lots, in 56 lb. paper bags, c.p., about £125-£130.

**Phosphoric Acid.** TPA 1,700 ton lots, c.p., £103; BP (s.g. 1,750), ¼-ton lots, c.p., per lb., 1s 4d.

**Potash, Caustic.** Solid, 1-ton lots, £95 10s; liquid, £36 15s.

**Potassium Carbonate.** Calcined, 96/98%, 1-ton lots, ex-store, about £76.

**Potassium Chloride.** Industrial, 96%, 1-ton lots, about £24.

**Potassium Dichromate.** Gran., 1-ton lots, £131 16s. 8d. d/d.

**Potassium Iodide.** BP, under 1 cwt, per lb., 9s 9d., per lb. for 1-cwt. lots, 8s 9d.

**Potassium Nitrate.** 4-ton lots, in non-ret. pack, c.p., £63 10s.

**Potassium Permanganate.** BP, 1-cwt. lots, per lb., 2s 0½d; 3-cwt. lots, per lb., 1s 11½d; 5-cwt. lots, per lb., 1s 11½d; 1-ton lots, per lb., 1s 11d; 5-ton lots, per lb., 1s 10½d. Tech., 1-ton lots in 1-cwt. drums, per cwt., £10 3s; 5-cwt. in 1-cwt. drums, per cwt., £10 5s; 1-cwt. lots, £10 14s.

**Propylene Oxide.** Bulk lots, d/d, £162.

**Salammoniac.** Ton lot, in non-ret. pack, £47 10s.

**Salicylic Acid.** MANCHESTER: Tech., d/d, per lb., 2s 6d, cwt. lots.

**Soda Ash.** 58% ex-depot or d/d, London station, 1-ton lots, about £16 11s 6d.

**Sodium Acetate.** Comm. crystals, d/d, £75 8s.  
**Soda, Caustic.** Solid 76/77%; spot, d/d, 1-ton lots, £33 16s 6d.

**Sodium Bicarbonate.** Ton lot, in non-ret. pack, £12 10s.

**Sodium Bisulphite.** Powder, 60/62%, d/d 2-ton lots for home trade, £45.

**Sodium Carbonate Monohydrate.** Ton lot, in non-ret. pack, c.p., £64.

**Sodium Chlorate.** 1-cwt. drums, c.p. station, in 5-ton lots, about £88 per ton.

**Sodium Cyanide.** 96/98%, ton lot in 1-cwt. drums, £126.

**Sodium Dichromate.** Gran. Crystals 1-ton lots, £109 13s. 4d., anhydrous, 1-ton lots, £126. All lots delivered.

**Sodium Fluoride.** D/d, 1-ton lots and over, per cwt., £5 4s 6d; 1-cwt. lots, per cwt., £5 15s.

**Sodium Hyposulphite.** Pea crystals, £38; comm., 1-ton lots, c.p., £34 15s.

**Sodium Iodide.** BP, under 56 lb. per lb., 11s 3d; 56 lb. and over, 11s 0d.

**Sodium Lactate.** Edible, 70%, per ton, £150, d/d free drums, 1-ton lots.

**Sodium Metaphosphate.** Flaked, paper sacks, £136.

**Sodium Metasilicate.** (Spot prices) D/d UK in 1-ton lots, 1-cwt. free paper bags, £30.

**Sodium Nitrate.** Chilean refined gran. over 98%, 6-ton lots, d/d c.p., per ton, £29.

**Sodium Nitrite.** 4-ton lots, £32.

**Sodium Perborate.** (10% available oxygen) in 1-cwt. free kegs, 1-ton lots, £129 10s; in 1-cwt. lots, £139 5s.

**Sodium Percarbonate.** 12½% available oxygen, in 1-cwt. kegs, £170 15s.

**Sodium Phosphate.** D/d, ton lots: disodium, crystalline, £40 10s, anhydrous, £89; tri-sodium, crystalline, £39 10s, anhydrous, £87.

**Sodium Silicate.** (Spot prices) 75-84° Tw. Lancs and Ches., 6-ton lots, d/d station in loaned drums, £13 10s; Dorset, Somerset and Devon, per ton extra, £3 5s; Scotland and S. Wales, extra, £2 17s 6d. Elsewhere in England, not Cornwall, extra, £1.

**Sodium Sulphate (Desiccated Glauber's Salt).** D/d in bags, about £19.

**Sodium Sulphate (Glauber's Salt).** D/d, up to £14.

**Sodium Sulphate (Salt Cake).** Unground, d/d station in bulk, £10.

**MANCHESTER:** d/d station, £10 10s.

**Sodium Sulphide.** 60/62% spot, d/d, in drums in 1-ton lots, solid, £39 2s 6d; broken, £40 2s 6d. Flakes, £41 12s 6d, crystals, £30.

**Sodium Sulphite.** Anhydrous, £71 10s; comm., d/d station in bags, £27-£28 10s.

**Sulphur.** 4 tons or more, ground, according to fineness, £20-£22.

**Sulphuric Acid.** Net, naked at works, 168° Tw. according to quality, £11 10s—£12 10s per ton; 140° Tw., arsenic free, £9; 140° Tw., arsenious, £8.

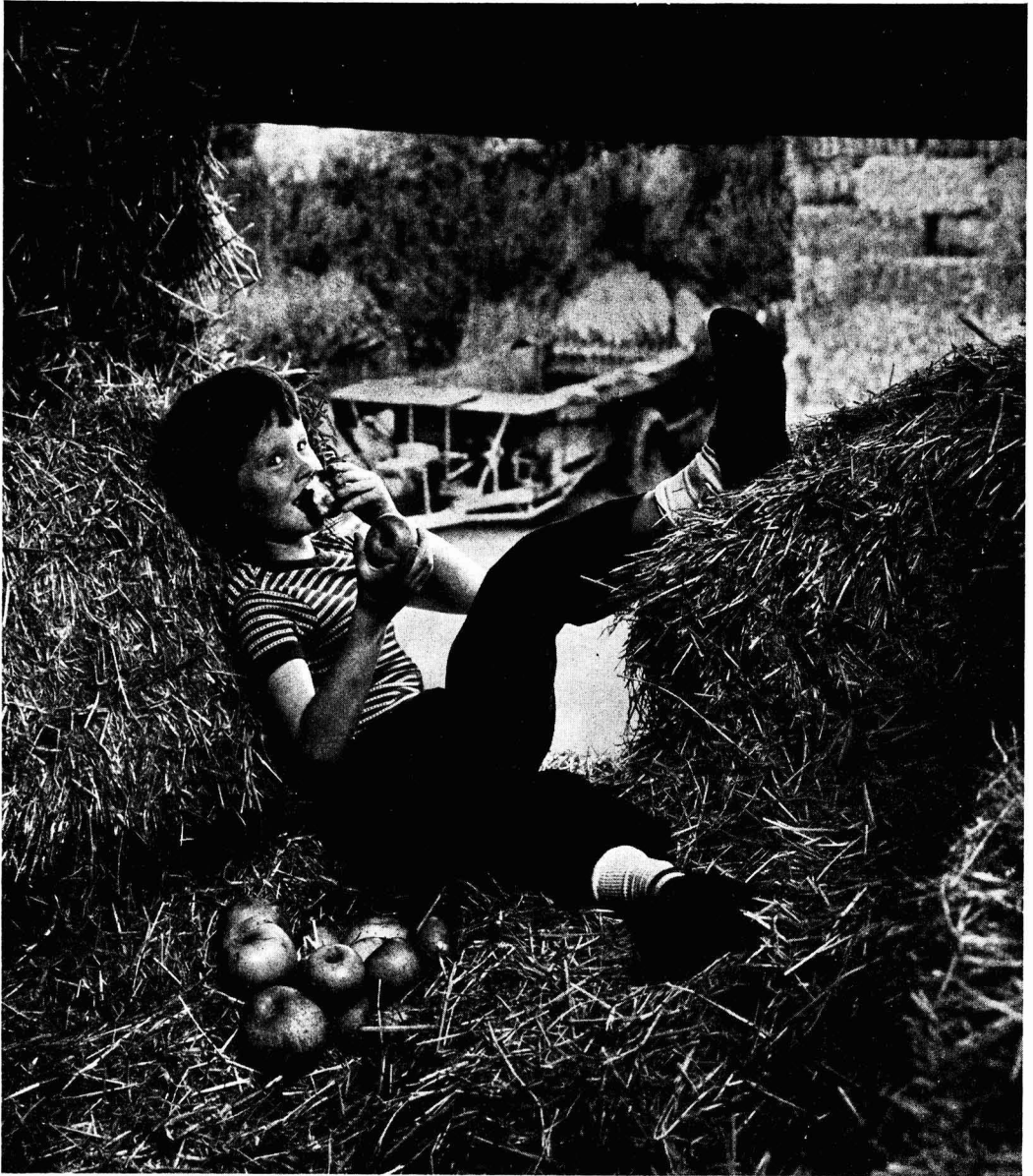
**Tartaric Acid—Powder and Granular.** Per cwt.: 10 cwt. or more, in kegs, 280s; in bags, 278s per cwt.

**Titanium Oxide.** Standard grade comm., rutile structure, £178; standard grade comm., anatase structure, £163.

**Zinc Oxide.** Per ton: white seal, £90; green seal, £88; red seal, £85.

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**Acetone.** All d/d. In 5-gal. drums, £119; in 10-gal. drums, £109; in 40-45 gal. drums, under 1 ton, £84; 1-5 tons, £79;



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5-10 tons, £77; 10 tons and up, £75; in 500-gal. tank wagons, £74. In bulk minimum 2,500 gal. £70 per ton.

**Butyl Acetate BSS.** 10-ton lots, £155.

**n-Butyl Alcohol BSS.** 10 tons, in drums, d/d, £137 10s.

**sec-Butyl Alcohol.** All d/d. In 5-gal. drums, £153; in 10-gal. drums, £148 in 40-45 gal. drums, under 1 ton, £123; 1-5 tons, £118; 5-10 tons, £116; 10 tons and up, £114; in 400-gal. tank wagons, £108.

**tert-Butyl Alcohol.** 5-gal. drums, £197; 40/45-gal. drums: 1 ton, £175 10s; 1-5 tons, £162; 5-10 tons, £160; 10 tons and up, £158.

**Diacetone Alcohol.** Small lots: 5-gal. drums, £178; 10-gal. drums, £168. 40/45-gal. drums: under 1 ton, £148; 1-5 tons, £143; 5-10 tons, £141; 10 tons and over, £139, in 400-gal. tank wagons, £133.

**Dibutyl Phthalate.** In drums, 10 tons, d/d per ton, £188; 45-gal. 1-4 drums, £194.

**Diethyl Phthalate.** In drums, 10 tons, per ton, £176; 45-gal. 1-4 drums, £182.

**Dimethyl Phthalate.** In drums, 10 tons, per ton, d/d, £163; 45-gal. 1-4 drums, £171.

**Dioctyl Phthalate.** In drums, 10 tons, d/d, per ton, £204; 45-gal. 1-4 drums, £210. Ether BSS. 1-ton lots, drums extra, per lb., 1s 11d.

**Ethyl Acetate.** 10-ton lots, d/d, £130.

**Ethyl Alcohol Fermentation grade (PBF 66 o.p.).** Over 300,000 p. gal., 3s 10½d; d/d in tankers, 2,500-10,000 p. gal. per p. gal., 4s 0½d. D/d in 40/45-gal. drums, p.p.g. extra, 2d. Absolute alcohol (74.5 o.p.), p.p.g. extra, 2d.

**Methanol.** Pure synthetic, d/d, £46.

**Methylated Spirit.** Industrial 66° o.p.: 500-gal. and up, d/d in tankers, per gal., 5s 7½d; 100-499 gal. in drums, d/d per gal., 6s 0½d-6s 2½d. Pyridinised 66° o.p.: 500 gal. and up, in tankers, d/d, per gal., 5s 11d; 100-499 gal. in drums, d/d, per gal., 6s 4d-6s 6d.

**Methyl Ethyl Ketone.** All d/d. in 40/45-gal. drums, under 1 ton, £141; 1-5 tons, £136; 5-10 tons, £134; 10 tons and up, £132; in 400-gal. tank wagons, £126.

**Methyl isoButyl Carbinol.** All d/d. In 5-gal. drums, £194; in 10-gal. drums, £184; 40-45 gal. drums, less than 1 ton, £164; 1-9 tons, £159; 10 tons and over, £155; in 400-gal. tank wagons, £149.

**Methyl isoButyl Ketone.** All d/d. In 5-gal. drums, £194; in 10-gal. drums, £184; in 40/45-gal. drums, under 1 ton, £164; 1-9 tons, £159; 5-10 tons, £160; 10 tons and up, £155; in 400-gal. tank wagons, £149.

**soPropyl Acetate.** 10 tons, d/d, 45-gal. drums £125.

**isoPropyl Alcohol.** Small lots: 5-gal. drums, £118; 10-gal. drums, £108; 40/45-gal. drums: less than 1 ton, £83; 1-9 tons, £81; 10-50 tons, £80 10s; 50 tons and up, £80.

## RUBBER CHEMICALS

**Carbon Disulphide.** According to quality, £61-£67.

**Carbon Black.** GPF: Ex-store, Swansea. Min. 3-ton lots, one delivery, 6½d per lb.; min. 1-ton lots and up to 3-tons, one delivery 6¾d per lb.; ex-store, Manchester, London and Glasgow, 7½d per lb. HAF: ex-store, Swansea; Min. 3-ton lots, one delivery, 7½d per lb.; min. 1-ton lots and up to 3-tons, one delivery, 7¾d per lb. Ex-store Manchester, London and Glasgow. 8½d per lb. ISAF: Ex-store Swansea, min. 3-ton lots in one delivery, 9½d per lb., min. 1-ton lots and

up to 3-tons in one delivery, 9½d per lb. Ex-store Manchester, London and Glasgow, 10½d per lb.

**Carbon Tetrachloride.** Ton lots, £83 15s.

**India-Rubber Substitutes.** White, per lb. 1s 4½d to 1s 7d; dark, d/d, per lb., 1s 0½d to 1s 4d.

**Lithopone.** 30%, about £57 10s for 5-ton lots.

**Mineral Black.** £7 10s-£10.

**Sulphur Chloride.** British, about £50.

**Vegetable Lamp Black.** 2-ton lots, £64 8s.

**Vermilion.** Pale or deep, 7-lb. lots, per lb., 15s 6d.

## COAL TAR PRODUCTS

**Benzole.** Per gal., min. 200 gal., d/d in bulk, 90's, 5s 3d; pure, 5s 7d.

**Cresote.** Home trade, per gal., according to quality, f.o.r. maker's works, 1s-1s 9d. MANCHESTER: Per gal., 1s 3d-1s 8d.

**Cresylic Acid.** Pale 99/100%, per gal., 7s 9d D/d UK in bulk: Pale ADF, per imperial gallon f.o.b. UK, 8s; per US gallon, c.i.f. NY, 103.50 cents freight equalised.

**Naphtha.** Solvent, 90/160°, per gal., 4s 11d heavy, 90/190°, for bulk 1,000-gal. lots, d/d, per gal., 3s 10d. Drums extra; higher prices for smaller lots.

**Naphthalene.** Crude, 4-ton lots, in buyers' bags, nominal, according to m.p.: £22-£30; hot pressed, bulk, ex-works, £42; refined crystals, d/d min. 4-ton lots, £65-£68.

**Phenol.** Crystals, d/d bulk, per lb. 1s; 40/50-gal. ret. drums extra, per lb., ¾d.

**Pitch.** Medium, soft, home trade, f.o.r. suppliers' works, £10 10s; export trade, f.o.b. suppliers' port, about £12.

**Pyridine.** 90/160, per gal., 18s about.

**Toluol.** Pure, per gal., 4s 11d; 90's 2,000 gal. in bulk, per gal., 4s 8d. MANCHESTER: Pure, naked, per gal., 5s 6d.

**Xylole.** According to grade, in 1,000-gal. lots, d/d London area in bulk, per gal., 5s 3d-5s 5d.

## INTERMEDIATES AND DYES

### (Prices Normal)

**m-Cresol 98/100%.** 10 cwt. lots d/d, per lb., 4s 9d.

**o-Cresol 30/31°C.** D/d, per lb., 1s.

**p-Cresol 34/35°C.** 10 cwt. lots d/d, per lb., 5s.

**Dichloraniline.** Per lb., 4s 6d.

**Dinitrobenzene.** 88/99°C., per lb., 2s 1d.

**Dinitrotoluene.** Drums extra. SP 15°C., per lb., 2s 1½d; SP 26°C., per lb., 1s 5d;

SP 33°C., per lb., 1s 2½d; SP 66/68°C., per lb., 2s 1d.

**p-Nitraniline.** Per lb., 5s 1d.

**Nitrobenzene.** Spot, 90 gal. drums (drums extra), 1-ton lots, d/d, per lb., 11d.

**Nitronaphthalene.** Per lb., 2s 5½d.

**o-Toluidine.** 8-10 cwt. drums (drums extra), per lb., 1s 10d.

**p-Toluidine.** In drums, per lb., 3s 6d.

**Dimethylaniline.** Drums extra, c.p., per lb. 3s 2d.

## Nine fatalities in chemical industry

DURING the quarter ended 31 December 1961, nine people were killed in the chemical industry as a result of accidents which were notified to H.M. Inspector of Factories. The number injured, but not fatally, during the same quarter was 2,628.

Incidents occurring in the chemical industry and referred to in the quarterly review of accidents published by the Ministry of Labour underlined the need for ensuring that fittings for acid lines are made of material that is suitable for the type of acid with which it will have to deal. It is suggested that close liaison should be maintained between the chemical engineer and the person making purchases for replacements, and that requisition orders should only be signed by responsible persons such as the chemical engineer.

## Laporte German board meets in London

LAST month's meeting of the board of the Elektrochemische Werke Munchen AG was held for the first time in London. This company became members of the Laporte Industries group just over a year ago.

Their managing director, Herr Paul O. Schlick, has made many visits to Britain. This time he not only held a meeting here with his colleagues, but was able to visit Laporte centres in the U.K. with them. The visitors were especially interested to see the autoxidation plant for the production of hydrogen peroxide at Warrington, as a similar plant is being erected at the E.W.M. works at Hollriegelskreuth, near Munich.

The party also visited Peter Spence and Sons Ltd., another Laporte Industries subsidiary, at Widnes, and the Group's Derbyshire mineral company, Glebe Mines Ltd. With Herr Schlick were Herr M. Keck, Herr W. Friedrich, Dr. J. Strobl and Dr. E. Klenk. They were accompanied by the two British members of the E.W.M. board, Mr. Geoffrey Hickson and Mr. L. H. Binding.

## World production, exports, imports of materials

THE latest edition of the 'Statistical summary of the mineral industry,' an annual publication of statistical tables showing world production, exports and imports of all economically important minerals, including the mineral fuels, coal and petroleum, is now available from H.M.S.O. at 27s 6d.

The latest edition covers the years 1955 to 1960, and contains over 200 tables relating to 64 groups of commodities.

Information on crude petroleum and refinery products, asphalt and oil shale occupies an important part of the volume. The section on coal includes the principal distillation products. Fertiliser tables give details in phosphate rock, superphosphate, basic slag, nitrogen compounds, potash and sulphur.

## DIARY DATES

### WEDNESDAY 6 JUNE

**B.N.E.S.**—London: Inst. Civil Eng., 1-7, Gt. George St., S.W.1. 5.30 p.m. 'Nuclear education' by Dr. J. M. Kay & Dr. S. C. Curran.

### THURSDAY 7 JUNE

**R.S.**—London: Burlington Hs., Piccadilly, W. 1. 4.30 p.m. Papers by F. S. Dainton, D. B. Peterson & M. Z. Hoffman, G. Porter.

**S.A.C.**—Welwyn Garden City: Visit to the labs of Smith, Kline & French, Ltd.

**S.C.I.**—Sharnbrook: Visit to Unilever, Ltd., Food Research Depart.



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Specifications filed in connection with the acceptances in the following list will be open to public inspection on the dates shown. Opposition to the grant of a patent on any of the applications listed may be lodged by filing patents form 12 at any time within the prescribed period.

## ACCEPTANCES

### Open to public inspection 27 June

- Explosive composition. Du Pont de Nemours & Co., E. I. 899 800  
 Process for polymerising alpha-olefins. Montecatini. 899 521  
 Methoxyindolyl-nitroethene and a process for its production. Laboratoires Francais de Chimiotherapie. [Divided out of 899 548.] [Addition to 887 915.] 899 550  
 Steroid compound and processes. Laboratoires Francais de Chimiotherapie. [Divided out of 899 995.] 899 996  
 Benzenesulphonamides. Bristol-Myers Co. [Divided out of 899 583.] 899 584

### Open to public inspection 4 July

- Separation or partial separation of components of a liquid medium. Beattie, I. R., and Gold, V. 900 108  
 Steroids and process for preparing same. Ciba Ltd. 900 173  
 Bis-sulphinic acid compounds. American Cyanamid Co. 900 172  
 Solutions of diazoino compounds and coupling components and a process for their preparation. Compagnie Francaise Des Matieres Colorantes. 900 402  
 Anion-exchanger. Bayer AG. 900 337  
 Catalyst for production of bulk and solution polymerizates. Electrochemische Werke München AG. 900 403  
 Method of performing metallurgical chemical and other technical processes under the action of gas ions. Elektrophysikalische Anstalt B. Berghaus. 900 342  
 Process for producing formaldehyde by oxidation of methanol. Montecatini. 900 404  
 Steroid compounds and their preparation. Merck & Co. Inc. 900 021  
 Process and apparatus for production of carbon black. Phillips Petroleum Co. 900 420  
 Preparation of collagenous polymers. Kuntz, E. 900 181  
 Coating compositions, and articles coated therewith, comprising a water-insoluble linear polymer and an ammonium salt of a methyl methacrylate copolymer with acrylic and/or methacrylic acid. Rohm & Haas Co. 900 182  
 Anthraquinone dyestuffs and a process for their preparation. Compagnie Francaise des Matieres Colorantes. 900 186  
 Separation of liquid mixtures into their components. Badische Anilin- & Soda-Fabrik AG. 900 457  
 Oxidation of organic compounds by ruthenium tetroxide. Engelhard Industries, Inc. 900 107  
 Process for the production of calcium carbide. Elektrokemisk A.S. 900 460  
 Disazo-dyestuffs containing monohalotriazine residues and process for their manufacture. Ciba Ltd. 900 391  
 Manufacture of polyurethanes. Imperial Chemical Industries Ltd. 900 392  
 Surface-active urethane derivatives. Hoechst AG. 900 110  
 Refining of industrial hydrocarbon mixtures. Badische Anilin- & Soda-Fabrik AG. 900 463  
 Coating. Polymer Corporation. 900 149  
 Trifluoromethyl-aryl-sulphonamides for use as protective agents against textile pests and as herbicides. Bayer AG. [Addition to 854 956.] 900 111  
 Process for obtaining an isouquinoline alkaloid from the plants of the genus *Conopharyngia*. Geigy AG, J. R. 900 395

- Carboxylic acid amides and process for their manufacture. Farbwerke Hoechst AG. 900 346  
 Process for the manufacture of halohydrocarbons. Imperial Chemical Industries Ltd. 900 112  
 Process for the preparation three- $\beta$ -(p-nitrophenyl)-serine. Chinoïn Gyogyszer-es-Vegeteti Termek Gyara, R. T. 900 396  
 Process for the production of hydrazine hydrate. Farbenfabriken Bayer AG. 900 397  
 Dextra- and laevo-rotatory 5-(3-dimethylamino-2-methylpropyl) amonodibenzyl. Rhone-Poulenc. 900 352  
 Cyclopentadienyl-compound-containing antiknock fluid compositions and liquid hydrocarbon fuels containing them. Ethyl Corporation. 900 446  
 Metal complexes of monazo dyestuffs and their production and use. Badische Anilin- & Soda-Fabrik AG. 900 354  
 Esters containing epoxide groups, their production and their uses. Ciba (A.R.L.) Ltd. 900 506  
 Production of cyclic  $\alpha,\beta$ -unsaturated ketones. Dragoco Spezialfabrik Konz. Riech- und Aromastoffe Gerberding & Co. GmbH. 900 355  
 Manufacture of 1,2-dicyano cyclobutane. Knapsack-Griesheim AG. 900 356  
 Production of alkyl- or aryl-halosilanes. Goldschmidt A.-G., Th. 900 123  
 Removal of anions from aqueous solutions. Permut Co. Ltd. [Addition to 860 695.] 900 496  
 Cyanohydropyridine derivatives and process for their manufacture. Ciba Ltd. 900 447  
 Pyrazolone derivatives and process for their production. Geigy, AG, J. R. 900 362  
 Lubricating oil additives. Distillers Co. Ltd. 900 059  
 Process for the manufacture of adipo-dinitrile. Knapsack-Griesheim AG. 900 357  
 Anthraquinone dyestuffs and their production. Badische Anilin- & Soda-Fabrik AG. 900 127  
 Process for the alkaline polymerisation of lactams. Badische Anilin- & Soda-Fabrik AG. 900 150, 900 151  
 Catalytic decomposition of 1,1-dimethylhydrazine. Engelhard Industries Inc. 900 453  
 Dispersions of rubbery polymers. Esso Research & Engineering Co. 900 128

- Sulphur-containing heterocycles. Ciba Ltd. 900 434  
 Water-soluble compounds containing epoxide groups. Ciba Ltd. 900 372  
 Polymerisation of conjugated diolefins. Bayer AG. 900 523  
 Herbicidally-active compounds, their preparation, and herbicidal compositions incorporating the same. Amchem Products, Inc. [Addition to 871 232.] 900 131  
 Method of producing alkyls. Kali-Chemie AG. 900 132  
 Sulphapyridazines and process for preparation. American Cyanamid Co. 900 133  
 Process for the preparation of bis (hydroxyphenyl)-methanes. Shell Internationale Research Maatschappij NV. 900 116  
 Process for the manufacture of 1,2-dicyanocyclobutane. Knapsack-Griesheim AG. [Addition to 900 356.] 900 358  
 N-monobenzyl derivatives of 2,4-diaminophenol and their use in photographic products, processes and compositions. International Polaroid Corporation. 900 155  
 Preparation of organo bis(aminoboryl) compounds and bis(hydroxyboryl) compounds. United States Borax & Chemical Corporation. 900 135  
 Treatment of zinc sulphide pigments. Sachtelben AG, für Bergau und Chemische Industrie. 900 514  
 Plasticised polyvinyl chloride compositions. Continental Oil Co. 900 350  
 Process for the production of phenols brominated in the nucleus. Farbenfabriken Bayer AG. 900 136  
 Process for the preparation of polyaromatic ethers. Shell Internationale Research Maatschappij N.V. 900 004  
 Process for the oxidation of ethylene to ethylene oxide. Shell Internationale Research Maatschappij N.V. 900 376  
 Polymeric compounds. Miles Laboratories Inc. 900 379  
 Cyanohydropyridine derivatives and process for their manufacture. Ciba Ltd. [Divided out of 900 447.] 900 448  
 Sulphur-containing heterocycles. Ciba Ltd. [Divided out of 900 434.] 900 435  
 Steroids compounds and their preparation. Merck & Co. Inc. [Divided out of 900 021.] 900 022

## Market Reports

### STEADY TRADING CONDITIONS REPORTED

**LONDON** Steady trading conditions have been reported in the general chemicals market. The leading industrial outlets are calling for good quantities against contracts and there has been a sizeable flow of new home enquiry for spot and forward delivery. Demand for agricultural chemicals is maintained at about the seasonal level. The reduction in compound fertiliser prices recently announced, comes into operation on 1 June. Prices in most other sections of the market are steady and unchanged with export quotations keen in the face of competition. The coal-tar products with few exceptions are in steady request with prices well held.

**MANCHESTER** Reasonably active trading conditions have been experienced on the Manchester chemical market. A fair number of enquiries have been in circulation and actual bookings have been on quietly steady lines both on home-trade account and for export. Much of the current business has been restricted to prompt or near delivery positions, with forward buying extending over the next two or three months on a moderate scale. Existing commit-

ments continue to be drawn against satisfactorily.

**SCOTLAND** For the most part there has been little change in market conditions and the activity recently reported has again been fully maintained during the past week. Demands have been varied and covered quite a range of industrial chemicals. Enquiries too have featured well. Prices on the whole have remained fairly steady. Continued activity can also be reported in regard to agricultural chemicals in keeping with seasonal demands. There has been little change in export and enquiries have followed more or less the usual pattern.

### Addison Chemical join Muirhead group

Addison Chemical Ltd., Belmont Road, London W.4, merchants of blended chemicals for industrial purposes, and Addison Electric Co. Ltd. have joined the group controlled by Muirhead and Co. Ltd., Beckenham, Kent.

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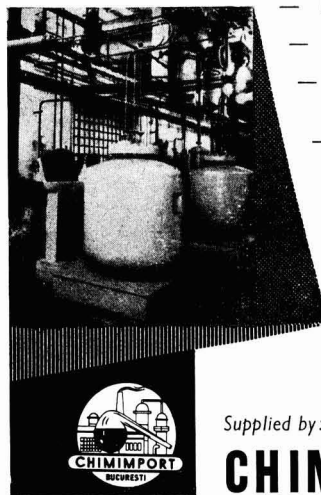
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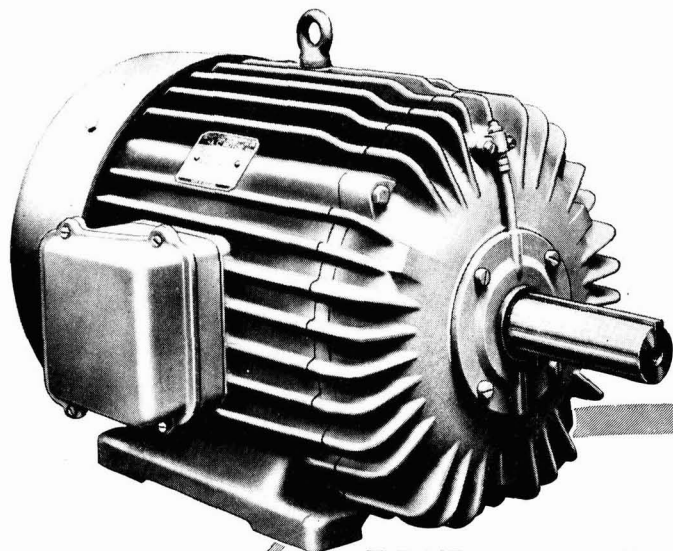
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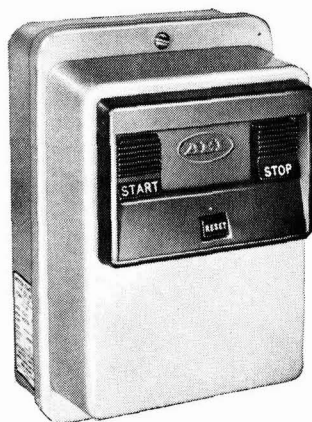
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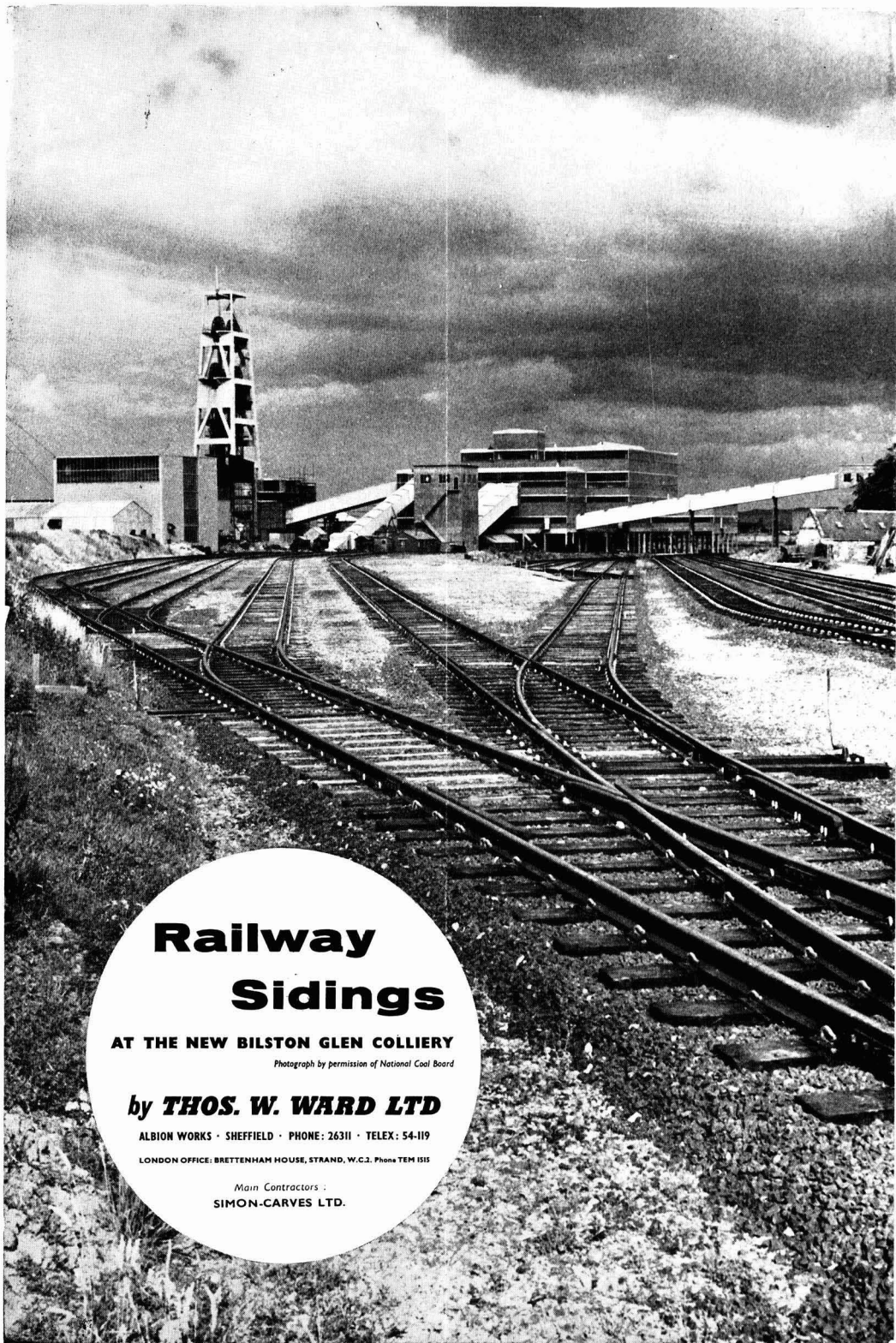
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