#### CLASSIFIED ADVERTISEMENTS

The rate for classified advertisements is 5s. a line (or space equivalent of a line), with an extra charge of 1s. for the use of a Box Number. Semi-displayed classified advertisements are 60s. per single-column inch.

\*\*A NALYTICAL ABSTRACTS." Abstractors are required for Romanian papers. Write for details to The Editor, Analytical Abstracts, 14, Belgrave Square, London, S.W.1.

EXPERIENCED ANALYST required in London by manufacturers of pharmaceutical products. There is a well equipped laboratory and the prospects are excellent. The successful candidate will have considerable scope for carrying out research on methods to establish standards for products at the development stage. Applications will be treated as strictly confidential and should include qualifications, age and experience. Please address to Box No. 4047, The Analyst, 47 Gresham Street, London, E.C.2.

FOR SALE in good condition Hilger Quartz Spectrograph with accessories. THE LYSI LTD—REYKJAVIK—ICELAND.

FREDK. BOEHM LIMITED, require a DEVELOPMENT CHEMIST to work on problems involving Protein Hydrolysates and Synthetic Resins, and an ANALYST to take charge of Quality Control Laboratory. Applicants should be aged 22–30 Experience in the particular type of work is desirable, but at least two years industrial experience is essential.

Qualifications:—A.R.I.C., Grad. R.I.C. or B.Sc. (Hons.). In the case of the analytical chemist a knowledge of Bacteriology and Microbiological assay technique would be advantageous. Good salary and prospects. Applications should be addressed to:—

Chief Food Chemist, Fredk. Boehm Ltd., Crabtree Manorway, Belvedere, Kent

#### **ANALYTICAL CHEMIST**

SECTION HEAD

Required by MIDLAND SILICONES LTD., BARRY, SOUTH WALES, for the Analytical Department. He will be responsible to the Chief Analyst for the Chemical Analysis of all raw materials and silicone intermediates, vent gases and effluents. Age 26–35. Applicants should have A.R.I.C. or B.Sc. Hons. with a few years work in analytical chemistry and some supervisory experience.

The factory at Barry is located in a very pleasant part of the country. The Company operates non-contributory pension and housing schemes. Apply (Ref. No. 124) to Group Staff Officer, Albright & Wilson Ltd., I Knightsbridge Green, London, S.W.1 (M.S. Limited is a member Company of the Albright & Wilson Group).

#### FOOD RESEARCH

#### CHEMIST

Male, graduate or A.R.I.C. required as Scientific Officer for Analytical Laboratory. Duties will include research into analytical methods and the investigation of a wide range of problems associated with the baking industry. Experience of food analysis an advantage. This is a responsible post in a vigorous organisation serving a large industry. Commencing salary up to £1000. Post pensionable under F.S.S.U. Attractive working conditions in rural surroundings, yet close to London.

Applications should include details of age, qualifications, experience and the names of two referees. Write to:

The Director of Research, British Baking Industries Research Association, Chorleywood, Rickmansworth, Heets



The Peerless Refining Company, a subsidiary of The Distillers Company Limited, wishes to appoint an Analytical Chemist at its Liverpool factory.

The work is in the field of edible fats and oils and includes process and quality control as well as the development of new products and laboratory scale investigations of production techniques. Duties include the supervision of assistants.

Applicants, preferably aged not over 30, should hold a degree in chemistry, a Diploma in Technology awarded by a designated College of Advanced Technology, or an equivalent qualification. Relevant experience is desirable but is not essential.

A non-contributory pension scheme is in operation; assistance can be given to married men towards house purchase and removal expenses.

Write: STAFF MANAGER, THE DISTILLERS COMPANY LIMITED, 21/22 BOLTON STREET, LONDON, W.1

Quote Reference: 65/61 A.N.

[January, 1962]

A LONDON PUBLIC ANALYST has vacancies for draduate Analysts preferably with experience of food and drug analysis. The work is interesting and varied, but accuracy, speed and intelligence are essential. Staff are encouraged to pass examinations such as Branch E., R.L.C. Starting salary £800 to £1100 per annum approximately. In a special case a higher salary would be considered. Apply in writing in first instance giving details of education, experience, etc., to McLachlan, 4, Hanway Place, London, W.1.

THE LLOYDS' GROUP OF COMPANIES have a vacancy for a competent analyst holding A.R.I.C. or equivalent qualifications. Candidates should be conversant with latest analytical techniques as applied to the pharmaceutical industry; some industrial experience would be an advantage.

The position is interesting and offers scope for initiative. A salary such as will attract a man of good calibre will be paid; pension scheme is operated.

Applications, which will be treated in strict confidence, should be made to the  $\,$ 

Technical Manager, Howard Lloyd & Co. Ltd., Clerk Green, Batley, Yorkshire.

CHEMIST—required in Analytical Department of an organisation with wide interests, particularly in food stuffs. The work is varied and non-routine, and experience in a Public Analyst's or similar laboratory would be considered an advantage. Applicants should be of graduate standard, but sound analytical technique is more important than academic qualifications. Five-day week, non-contributory Pension Scheme. Write, giving age and particulars of qualifications and experience to Box 4048, The Analyst, 47 Gresham Street, London, E.C.2.

#### CHIEF CHEMIST

A vacancy exists for a Chief Chemist to take charge of a small modern laboratory which serves a mining and metallurgical enterprise in Southern Rhodesia.

A graduate in Chemistry, or with Chemistry as a major subject, and with not less than six years' practical experience, is preferred. Some experience in the analysis of metals and complex ores is essential, and a knowledge of spectrochemical analysis is desirable.

Salary dependant on experience, but initial emoluments not less than £1800. The position is an interesting one, and there

is scope for advancement.

A house is available at low rent, and conditions of service include very good annual and long leave, provident and medical schemes. The climate is pleasant, and there are good

Write Box No. 4046, The Analyst, 47 Gresham Street,

London, E.C.2.

#### BINDING

Have your back numbers of The Analyst bound in the standard binding case Send the parts together with a remittance for 16/6

to

W. HEFFER & SONS LTD.
Hills Road Cambridge

## Upjohn

## CONTROL CHEMIST

A Control Chemist is required to take charge of the Control Laboratories in a new Pharmaceutical plant at present under construction at Crawley, Sussex.

The successful applicant (age 30-40) will be responsible for directing the analytical control of finished pharmaceuticals (including steroids and antibiotics), intermediates, chemicals and packing materials, and should have had considerable experience in laboratories handling these types of products.

Salary will be commensurate with experience and qualifications and benefits will include participation in a generous Pension and Life Assurance Scheme.

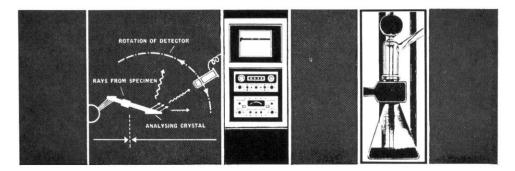
Applications in writing should give details of age, qualifications and experience and should be marked 'Confidential' and addressed to:—

THE PERSONNEL OFFICER,

UPJOHN LIMITED, FLEMING WAY, CRAWLEY, SUSSEX

# ANALYSTS 🕸

LAPORTE TITANIUM LIMITED, manufacturers of titanium dioxide pigments and other compounds of titanium, require experienced ANALYSTS.



Successful applicants will join a group in the Research Laboratory, carrying out specialised analyses on a wide variety of materials. In addition to classical methods of analysis, modern instrumental techniques such as X-Ray Fluorescent Spectrography and Flame Photometry are employed.

QUALIFICATIONS.... There are vacancies for analysts of both degree and H.N.C. standard.

**SALARY.....** Competitive salaries commensurate with qualifications and experience with a generous life insurance and non-contributory pension scheme.

**LOGATION** . . . . . . At the Company's new, well equipped Research Laboratories, situated in rural surroundings in North Lincolnshire.

APPLY...... The Group Personnel Manager, LAPORTE INDUSTRIES LIMITED
Hanover House, 14 Hanover Square, LONDON, W.1. (LTL/A/81)

## LAPORTE



# DECENNIAL INDEXES TO THE ANALYST

| 1926-1935 | <br> | <br> | <br>(Sewn) £1 5s. net  |
|-----------|------|------|------------------------|
| 1936-1945 | <br> | <br> | <br>(Cloth) £2 2s. net |
| 1946-1955 | <br> | <br> | <br>(Cloth) £5 net     |

It is regretted that earlier volumes are now out of print.

(Available at reduced prices to members of the Society for Analytical Chemistry on direct application to The Editor, *The Analyst*, 14 Belgrave Square, London, S.W.1)

Published for the Society by

W. HEFFER & SONS LTD., CAMBRIDGE

## Reprint of

## THE ANALYST

VOLUME I (1876) to VOLUME X (1885)

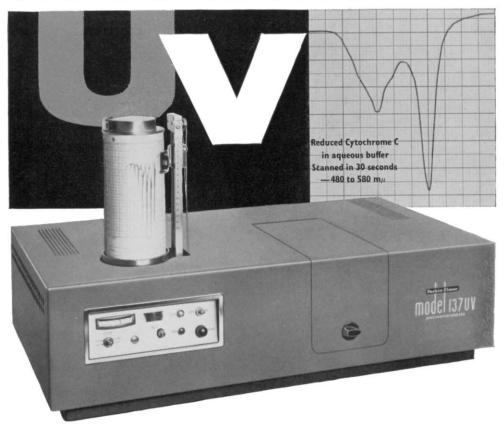
Bound in cloth

Each Volume £6 6s. net

The early volumes of this indispensable journal, out of print soon after publication and lacking from many library sets, have now been made available again in response to repeated requests. We hope to reprint all unavailable volumes, if the demand proves adequate.

# W. HEFFER & SONS, LTD. CAMBRIDGE — ENGLAND

# **AUTOMATIC**



#### Model 137 UV Spectrophotometer

Versatile, easy to use Only three controls

Manual setting of drum

No run-back time

Wavelength range:  $190m\mu$  to  $750m\mu$ 

Resolution: 0.2m µ at 250m µ

Repeatability: 0.005 absorbance units

Automatic Gain Control: Compensates absorption of solvent, even if absorption of solvent is 99%

Read-Out Accessory: For constant wavelength read-out on auxiliary recorder

Top Speed: 2 minutes or 8 minutes

Stray Light: Less than 1 % at 210 m $\mu$ 

for full ultraviolet or visible scan Size: 32" x 18" x 18" high

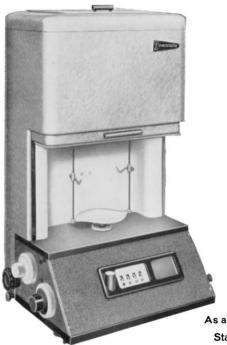
Perkin-Elmer Model 137 UV Spectrophotometer provides fully automatic top-speed analysis at remarkably low cost in the ultraviolet and visible. Advanced operating features, including automatic gain control, direct absorbance recording and a read-out accessory, make the Model 137 UV a powerful and valuable instrument for the widest range of applications, both in the laboratory and for continuous production control. It is fast and simple in use, and its accuracy and repeatability are of the highest standard.

We should like to send you full details of this new instrument.



ANALYTICAL INSTRUMENTS

Beaconsfield, Bucks, England · Telephone Beaconsfield 2020



# CONSTANT LOAD WEIGHING BY SUBSTITUTION



As an alternative to the applied-load system of weighing, Stanton now offers the Unimatic single-pan balances—constructed on the constant-load principle of weighing by substitution. The compact, sturdy aluminium case enclosing the instrument is finished in green and black hammertone. Width 13", depth 16", height 20½", weight 32 lb. With the introduction of the Unimatic series, the Stanton range of precision balances now provides an unrivalled choice to meet every requirement.

**UNIMATIC Balances** 

maintain their accuracy over the whole weighing range being designed on the now well known principle of weighing by substitution.

**UNIMATIC Balances** 

are simple to use—even an inexperienced operator can learn how

in a few minutes.

**UNIMATIC Balances** 

are safe in use—their non-magnetic stainless steel weights are adjusted to within the new N.P.L. tolerances for analytical weights (errors less than in 200,000). They are well protected within the balance case and their accuracy cannot vary.

**UNIMATIC Balances** 

are fast—very fast in use. Their controls are conveniently positioned at bench level. Time and Motion study experts have approved this design which results in less fatigue and more weighings in less time—in fact less than 30 seconds for the weighing of an unknown object.

## STANTON UNIMATIC BALANCES

Write for details to STANTON INSTRUMENTS LTD. 119 Oxford Street, London W.1

Telephone: Gerrard 7533 Cables: Stanbal, London, W.1



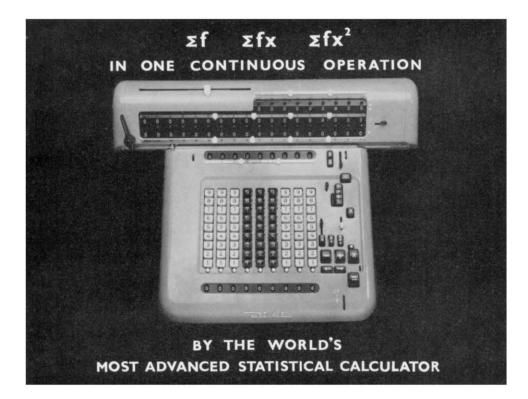
# SOUTHERN-HARWELL PULSE POLAROGRAPH

Following his work on square-wave polarography, Dr. G. C. Barker, of Harwell, has developed a pulse technique which gives greater sensitivity to irreversibly reduced ions, greater independence of base electrolyte impurities, and polarograms of greater certainty and ease of measurement.

The Southern-Harwell Pulse Polarograph provides both normal and derivative polarograms, and is the most sensitive polarograph available.

## **SOUTHERN ANALYTICAL LIMITED**

FRIMLEY ROAD
CAMBERLEY
SURREY
ENGLAND



A well-known statistician says:

"For the summation of squares the Diehl is the fastest machine we have ever handled, mainly because of the short-cut method of multiplication".

"The facility of direct transfer to the keyboard adds vastly to the flexibility and range of possible operations".

"The additional store is of enormous value, particularly as one can transfer either negatively or positively".

The completely new Diehl V Models have all the built-in features to enable statisticians to handle their special problems in the fastest and easiest way.

Fully automatic selection of the FASTEST possible way of squaring numbers: plus these new features:

Automatic Decimal Point—Automatic Clearances—Automatic squaring and raising to higher powers—Optional Storage Registers and Back Transfers—Independent "N" counter.

KEEP UP-TO-DATE BY SEEING

the new Class V



#### ARCHIMEDES-DIEHL MACHINE COMPANY LIMITED

Chandos House, Buckingham Gate, London, S.W.I. Telephone: ABBey 2014
SALES AND SERVICE THROUGHOUT THE COMMONWEALTH

#### SODIUM DIPHENYL REAGENT

#### for determining bromine and chlorine

Bromine and chlorine in organic compounds may be determined quickly and accurately by argentometric<sup>1,2</sup> or colorimetric<sup>3</sup> methods after treatment with sodium diphenyl reagent. We supply a concentrated solution of the reagent in 1:2-dimethoxy-ethane, packed in sealed ampoules.

- 1. Pecherer, B., Gambrill, C.M., and Wilcox, G.W., Anal. Chem., 1950, 22(2), 311.
- Liggett, L.M., Anal. Chem., 1954, 26(4), 748.
- Bergmann, J.G. and Sanik, J., Jnr., Anal. Chem., 1957, 29(2), 241.

25 ml 9s. 0d. 100 ml 28s. 6d.

# 1-PHENYL-TETRAZOLINE-5-THIONE SODIUM SALT for gravimetric assays of cadmium compounds

A water-soluble reagent precipitating cadmium ions quantitatively from neutral solutions. The crystalline precipitate, consisting of a 2:1 mol ratio of the thione to cadmium, is easily filtered and dried to constant weight at 110°C<sup>1</sup>.

The reagent has also been recommended for the detection and gravimetric determination of zinc<sup>2</sup>.

- 1. Moore, C.E. & Robinson, T.A., *Anal. Chim. Acta*, 1960, 23(6), 533.
- Dieterle, W. and Becher, H.Z.,
   anal. Chem., 1960, 176, 118-21.
   g 16s. 0d. 25 g 35s. 0d.



## ACETIC ACID for cholesterol determinations

We prepare this special grade of aldehydefree glacial acetic acid for use in the MacIntyre and Ralston method<sup>1</sup> for determining total cholesterol in blood plasma.

1. MacIntyre, I. and Ralston, M., Biochem. J., 1954. 56, xliii.

100 ml 8s. 6d. 500 ml 32s. 6d.

#### FOR DAIRY LABORATORIES

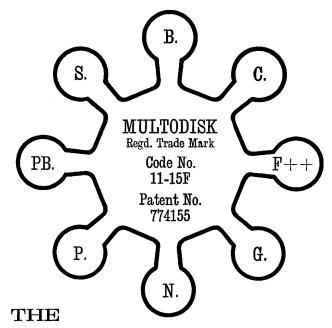
p-Nitro-phenyl disodium orthophosphate, the official substrate in the phosphatase test under the Milk (Special Designation) Regulations, 1960, has benefited from a new and mildly inspired method of preparation. It is now of even higher purity, and nearly 40% cheaper at 30s. 0d. per 5 g.



THE BRITISH DRUG HOUSES LTD.

 $\prime$  B.D.H. LABORATORY CHEMICALS DIVISION, POOLE, DORSET

# The method of choice in most laboratories today



# 'MULTODISK'

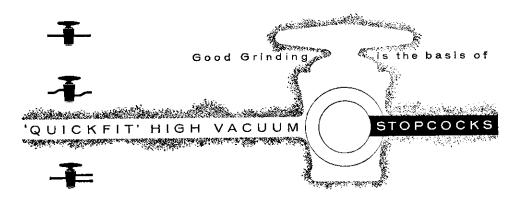
# for Bacterial Sensitivity Tests

- ACCURATE REPRODUCIBLE RESULTS
- ASSURED STABILITY
- SAVES TIME, SPACE AND MONEY
- MANY STOCK COMBINATIONS AVAILABLE

FURTHER INFORMATION FROM:

The Oxoid Division of Oxo Ltd., Thames House, Queen Street Place, London, E.C.4. Phone: Central 9781









Precision manufacture, practical design and faultless grinding are the outstanding features of "Quickfit" stopcocks, which are made in a full range of sizes and styles.

The accurate taper of "Quickfit" stopcocks, in conjunction with perfect grinding and finish, renders them leakproof and capable of giving long, efficient service.

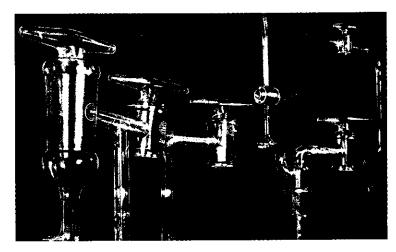
## QUICKFIT & QUARTZ LIMITED



# "QUICKFIT" STOPCOCKS ARE AVAILABLE FROM STOCK







DEPARTMENT 02
"QUICKFIT" WORKS
Heart of STONE, STAFFORDSHIRE.

Telephone: STONE 481

[January, 1962



#### IF YOU COMPARE VALUES YOU WILL CHOOSE A PYE pH METER!

Convenience in operation; precision; reliability; a wide choice of laboratory meters, electrodes and accessories—these factors and many more combine to make Pye pH meters the most widely used in Britain today.

## DYNACAP PH METER & MILLIVOLTMETER

#### for

# pH

Cat. No. 11072

Exceptional stability, linearity and accuracy are due to use of dynamic capacitor. Seven extended ranges give equivalent scale length of 35'' and discrimination to at least  $0.01\,\mathrm{pH}$  or  $1\,\mathrm{mV}$ . Temperature compensation, full automatic and manual, provided on all ranges. Sufficient output to feed external devices totalling  $10000\Omega$ .





Cat. No. 11602

#### **AUTOTITRATOR-CONTROLLER**

A precision instrument, incorporating two independent difference amplifiers, which rapidly pays for itself as a speedy routine titrator, or as a controller in pH or conductivity pilot-scale processes.



Cat. No. 11067

#### UNIVERSAL PH METER & MILLIVOLTMETER

The standard pH meter in thousands of laboratories all over the world, this instrument is renowned for its stability, accuracy and reliability.

# and Conductivity

#### CONDUCTANCE BRIDGE

A precision instrument for general laboratory work, including analytical and quality control determinations. 0.1 micromho to 10 mhos is covered in four switched ranges with automatic frequency adjustment. Null point indication by cathode ray oscilloscope is fool-proof and speedy. Accuracy 0.2%.



Cat. No. 11700



W. G. PYE & CO. LIMITED

GRANTA WORKS, P.O. BOX 60, CAMBRIDGE, ENGLAND

Telephone: Cambridge 58866 (5 lines). Telephone: Pye, Cambridge