

JOURNAL OF THE INSTITUTE OF PETROLEUM

~~2477/1102.~~

Honorary Editor :

A. E. DUNSTAN, D.Sc., F.R.I.C., F.C.S., F.Inst.Pet.

Honorary Associate Editor :

F. H. GARNER, O.B.E., Ph.D., F.R.I.C., F.Inst.Pet.

VOLUME THIRTY
1944

Published by
THE INSTITUTE OF PETROLEUM
MANSON HOUSE,
26, PORTLAND PLACE,
LONDON; W. I.



P.102/44/I

THE INSTITUTE OF PETROLEUM

(Founded 1913 as The Institution of Petroleum Technologists)

Past-Presidents :

- 1914-1916 SIR BOVERTON REDWOOD, Bart., D.Sc., F.R.S.E. (died 1919.)
1916-1917 THE RT. HON. LORD CADMAN OF SILVERDALE, G.C.M.G., Hon. LL.D., D.Sc., D.Eng.,
M.Inst.M.M. (died 1941.)
1917-1919 THE RT. HON. LORD GREENWAY OF STANBRIDGE EARLS. (died 1934.)
1919-1921 SIR FREDERICK W. BLACK, K.C.B., B.A.(Lond.). (died 1930.)
1921-1923 PROF. JOHN SAMUEL STRAFFORD BRAME, C.B.E., F.R.I.C., F.C.S.
1923-1925 HERBERT BARRINGER, M.Inst.C.E., M.I.MechE., M.I.N.A., M.Inst.Mar.Eng. (died 1932.)
1925-1927 SIR THOMAS H. HOLLAND, K.C.S.I., K.C.I.E., Hon. LL.D., D.Sc., F.R.S.
1927-1929 ALFRED C. ADAMS.
1929-1931 A. E. DUNSTAN, D.Sc., F.R.I.C., F.C.S.
1931-1933 JAMES KEWLEY, M.A., F.R.I.C., F.C.S., M.I.Chem.E.
1933-1935 T. DEWHUEST, A.R.C.S., F.G.S.
1935-1937 THE RT. HON. LORD CADMAN OF SILVERDALE, G.C.M.G., Hon. LL.D., D.Sc., D.Eng.,
M.Inst.M.M. (died 1941.)
1937-1939 LT.-COL. S. J. M. AULD, O.B.E., M.C., D.Sc.
1939-1942 PROF. A. W. NASH, M.Sc., M.I.MechE. (died 1942.)
1942-1944 C. DALLEY, M.I.E.E. (died 1944.)

COUNCIL

1944

President :

F. H. GARNER, O.B.E., PhD., F.R.I.C., M.I.A.E., M.I.Chem.E.

Past-Presidents :

ALFRED C. ADAMS.

S. J. M. AULD, O.B.E., M.C., D.Sc.

J. S. S. BRAME, O.B.E., F.R.I.C.

T. DEWHURST, A.R.C.S.

A. E. DUNSTAN, D.Sc., F.R.I.C.

Sir THOMAS H. HOLLAND, K.C.S.I., K.C.I.E.,
D.Sc., F.R.S.

J. KEWLEY, M.A., L.R.I.C.

Vice-Presidents :

ASHLEY CARTER, A.M.I.Mech.E.

G. H. COXON.

A. C. HARTLEY, C.B.E., F.C.G.I.

V. C. ILLING, M.A.

J. S. JACKSON, B.Sc., F.R.I.C.

J. A. ORIEL, M.C., M.A.

Members of Council :

R. CRICHTON, J.P.

A. FRANK DABELL, M.I.Mech.E.

E. A. EVANS, M.I.A.E.

E. B. EVANS, Ph.D., M.Sc., F.R.I.C.

W. E. GOODAY, A.R.S.M., D.I.C.

H. HYAMS.

D. S. PAUL, B.Sc., F.R.I.C.

E. R. REDGROVE, Ph.D., B.Sc.

C. A. P. SOUTHWELL, M.C., B.Sc.

H. C. TETT, B.Sc., D.I.C.

F. B. THOLE, D.Sc., F.R.I.C.

A. BEEBY THOMPSON, O.B.E.

R. R. TWEED.

A. WADE, D.Sc., A.R.C.S.

W. J. WILSON, F.R.I.C., F.C.G.I.

C. W. WOOD, F.R.I.C.

Joint Honorary Secretaries :

ARTHUR W. EASTLAKE, A.M.I.Mech.E.

ASHLEY CARTER, A.M.I.Mech.E.

Chairmen of Branches :

Burma Branch :

Iranian Branch :

Northern Branch : J. E. HASLAM.

Rumanian Branch :

Scottish Branch : R. CRICHTON.

South Wales Branch : R. B. SOUTHWELL.

Stanlow Branch : J. S. PARKER.

Trinidad Branch : H. C. H. THOMAS.

United States Branch : Dr. G. EGLOFF.

Students' Section : Birmingham Branch : G. K. ASHFORTH.

London Branch :

LIST OF OFFICERS

Joint Honorary Secretaries :

ARTHUR W. EASTLAKE, M.I.Min.E., A.M.I.Mech.E.

ASHLEY CARTER, A.M.I.Mech.E.

Honorary Editor :

A. E. DUNSTAN, D.Sc., F.R.I.C., F.C.S.

Honorary Associate Editor :

F. H. GARNER, O.B.E., Ph.D., M.Sc., F.R.I.C.

Secretary :

F. H. COE.

Solicitors : Messrs. ASHBURST, MORRIS, CRISP & Co.

Auditors : Messrs. PRICE WATERHOUSE & Co.

Bankers : WESTMINSTER BANK LIMITED, 115 Old Brompton Road, London, S.W.7.

Offices : 26, Portland Place, W.1.

Telephone : LANgham 2250.

Telegraphic Address : Inspetech, Westdo, London.

COMMITTEES OF COUNCIL

The President and the Joint Honorary Secretaries are ex-officio Members of all Committees.

Awards Committee.

E. A. EVANS (Chairman).

S. J. M. AULD.

A. E. DUNSTAN.

A. C. HARTLEY.

D. S. PAUL.

F. B. THOLE.

Benevolent Fund Committee.

A. E. DUNSTAN (Chairman).

ASHLEY CARTER.

E. A. EVANS.

V. C. ILLING.

Branches Committee.

J. A. ORIEL (Chairman).

ASHLEY CARTER.

R. CRICHTON.

V. C. ILLING.

C. A. P. SOUTHWELL.

W. J. WILSON.

Election Committee.

ASHLEY CARTER (Chairman).

S. J. M. AULD.

E. B. EVANS.

A. C. HARTLEY.

V. C. ILLING.

J. A. ORIEL.

C. A. P. SOUTHWELL.

CECIL W. WOOD.

Electrical and Allied Matters Committee.

A. C. HARTLEY (Chairman).

J. A. ORIEL.

C. A. P. SOUTHWELL.

Co-opted Members.

G. S. AMBROSE.

O. L. G. AUST.

P. A. FRENCH.

E. EVANS-JONES.

D. H. McLACHLAN.

A. D. MACLEAN.

W. S. MORRIS.

C. E. SPEARING.

Finance Committee.

G. H. COXON (Chairman).
ASHLEY CARTER.
J. KEWLEY.
E. R. REDGROVE.

R. R. TWEED.
W. J. WILSON.
C. W. WOOD.

House Committee.

C. A. P. SOUTHWELL (Chairman).
S. J. M. AULD.

J. S. JACKSON.
H. C. TETT.

Publication Committee.

A. E. DUNSTAN (Chairman).
ASHLEY CARTER.
G. EGLOFF.
E. A. EVANS.
E. B. EVANS.
A. C. HARTLEY.
H. HYAMS.

V. C. ILLING.
J. S. JACKSON.
J. A. ORIEL.
C. A. P. SOUTHWELL.
A. BEEBY THOMPSON.
CECIL W. WOOD.

Co-opted Members.

W. H. CADMAN.

D. A. HOWES.

Advisory Editorial Board.

A. E. DUNSTAN (Chairman).
ASHLEY CARTER.
G. EGLOFF.
F. H. GARNER.

V. C. ILLING.
J. A. ORIEL.
C. A. P. SOUTHWELL.

Research Committee.

H. C. TETT (Chairman).
S. J. M. AULD.
G. H. COXON.
E. A. EVANS.

V. C. ILLING.
J. S. JACKSON.
J. A. ORIEL.
C. A. P. SOUTHWELL.

Co-opted Members.

S. M. BLAIR.
D. A. HOWES.
E. R. PALMER.

L. PATRICK.
J. D. F. WEST.

Special (By-Laws) Committee.

T. DEWHURST (Chairman).
ASHLEY CARTER.
G. H. COXON.

J. S. JACKSON.
J. KEWLEY.
C. W. WOOD.

Standardization Committee.

F. H. GARNER (Chairman).
G. H. COXON.
A. E. DUNSTAN.
E. A. EVANS.
E. B. EVANS.
H. HYAMS.

J. S. JACKSON.
J. A. ORIEL.
D. S. PAUL.
E. R. REDGROVE.
F. B. THOLE.
W. J. WILSON.

Co-opted Members.

W. E. J. BROOM.
D. A. HOWES.
C. D. LAWRENCE.
J. MASON.
K. E. W. RIDLER.

A. R. STARK.
T. R. THOMAS.
C. S. WINDEBANK.
W. F. K. WYNN-JONES.

Honorary Members.

R. P. ANDERSON.
T. A. BOYD.
E. W. DEAN.

T. G. DELBRIDGE.
J. G. DETWILER.
F. D. TUEMMLER.

HON. SECRETARIES OF BRANCHES

Northern Branch : E. J. DUNSTAN, Manchester Oil Refinery Ltd., Twining Road, Barton Manchester.

Scottish Branch : Prof. W. M. CUMMING, Royal Technical College, Glasgow.

South Wales Branch : E. THORNTON, National Oil Refineries, Llandarcy, Glam.

Stanlow Branch : J. C. WOOD-MALLOCK, Lobitos Oilfields Ltd., Ellesmere Port, Cheshire.

Trinidad Branch : F. MORTON, Trinidad Leaseholds Ltd., Point-à-Pierre, Trinidad.

CONTENTS.

	PAGE
Petroleum Refining Terminology : Benzine Manufacture and Refining. M. E. Kelly and D. A. Howes	1
Institute Meeting	10
Twenty-Ninth Annual Report	13
Thirtieth Annual General Meeting	21
Standardization Committee—Reports of Sub-Committees	25
Practical Alignment Chart for Fluid Flow in Pipe-Lines. P. Meyer	52
Properties and Utilization of Petroleum Waxes. C. G. Gray	57
Some Ideas about Correlation of Test-Engine Results. T. P. Sands, C. J. Livingstone and W. A. Gruse	68
Obituary. J. H. C. de Brey	76
Orientated Hand Coring in Geological Field Work. K. Rohr	79
Inaugural Meeting	90
The Contamination, Deterioration and Decomposition of Lubricating Oils in Service. R. G. Pomeroy	95
Drilling. M. C. Seamark	134
Obituary. Christopher Dalley	150
Permeation of Hydrocarbon Gases through Rubber Tubing. M. J. Stross, J. L. Riley, and H. M. Eby	153
The Calculation of the Volumes contained in the Partially Filled Dish Ends of Horizontal Cylindrical Tanks. H. A. Blackmore	167
Thirty-First Annual General Meeting	171
Modern Methods of Motor Fuel Production. G. Egloff	173
The Correlation of Cetane Number with other Physical Properties of Diesel Fuels. Diesel Index Panel	193
The 1944 Edition of the I.P. "Standard Methods for Testing Petroleum and its Products." Editorial Sub-Committee	198
Institute Meeting	202
The Application of Free Energy Equations to the Study of the Synthesis of Hydrocarbons from Carbon Monoxide and Hydrogen. W. W. Myddleton	211
Fractional Distillation of Binary Mixtures. Simplified Computation of Theoretical Plates and Transfer Units. A. J. V. Underwood	225
Obituary. H. J. Halle	242
Mountains and Oil. J. V. Harrison	243
Institute Meeting	254
Spectral Methods and their Application to the Petroleum Industry. W. H. Naylor	256
Preliminary List of Definitions. Nomenclature Sub-Committee	266
Geophysical Methods Applied to Oil Prospecting. J. McG. Bruckshaw	271
Institute Meeting	311
Obituaries. J. Gillespie	325
J. Cuthill	325
Report on Tests for Soil Stabilization. Soil Stabilization Panel	326

	PAGE
Miniature and Micro Suspended Level Viscometers. M. M. Lapitzky and S. Thompson	349
The Study of Reservoir Fluids by Surface Recombination Experiments. H. G. Botset and M. Muskat	351
Oil Prospects in Portugal. A. Beeby Thompson	370
Institute Meeting	384
Sintered Glassware. I. C. P. Smith	385
Annual General Meeting	388
Student's Section (Birmingham) Annual Report	389
Correlation of Cetane Number with other Physical Properties of Diesel Fuels.— Corrigendum	389
Name Index	390
Subject Index	392