# JOURNAL OF DAIRY RESEARCH

Volume 35 Number 2 June 1968

**CAMBRIDGE UNIVERSITY PRESS** 

### THE JOURNAL OF DAIRY RESEARCH

was established in 1929 as a medium for the publication of the results of original research in dairy science and cognate subjects. It is published by the Cambridge University Press.

The annual subscription to the *Journal* is 80s. net (U.S.A. \$13.50) for a volume of three parts. Single copies may be purchased at 30s. net (U.S.A. \$5.00) each, plus postage. Subscriptions may be sent to any bookseller or to the Cambridge University Press, Bentley House, 200 Euston Road, London, N.W. 1. Subscribers in the U.S.A. or Canada should send their orders to Cambridge University Press, American Branch, 32 East 57th Street, New York, N.Y. 10022.

*Back Volumes*. Enquiries about the price and availability of back volumes should be sent to the publishers.

Claims for the replacement of journals believed to have been lost in transmission will only be entertained if made within six months of publication.

### Consultative Committee

PROFESSOR SIR RONALD BASKETT, O.B.E.
PROFESSOR E. L. CROSSLEY
PROFESSOR R. C. GARRY, F.R.S.E.
DR J. W. HOWIE
SIR ROBERT RAE, C.B.
DR J. A. B. SMITH, C.B.E.
PROFESSOR B. G. F. WEITZ, O.B.E.

Secretary MR J. C. F. COLES

Editorial Assistant MRS DOROTHY SKIDMORE

### ANIMAL PRODUCTION

### JOURNAL OF THE BRITISH SOCIETY OF ANIMAL PRODUCTION

### Contents of Volume 10, Part 1, February 1968 include:

COBIC. Castration experiments with Yugoslav Simmental Cattle. I. The effect of castration on growth and live weight gains.

WILLIS and PRESTON. The performance of different breeds of beef cattle in Cuba.

MILLER. Some responses of hill ewes and lambs to artificial shelter.

SLEE and HALLIDAY. Some effects of cold exposure, nutrition and experimental handling on serum free fatty acid levels in sheep.

GALAL. Estimates of genetic parameters of growth rate in sheep with reference to the method of estimation. Owen and RIDGMAN. Further studies of the effect of dietary energy content on the voluntary intake of pigs. Chamberlain and Lucas. The nutritive value of separated milk for pigs. I. A comparison of two diets containing separated milk with a standard all-meal diet.

HINKS. The use of station and field tests for the improvement of milking performance in dairy cattle. I. Variation in milk yield and butterfat in test station records.

SYKES and SLEE. Acclimatization of Scottish Blackface sheep to cold. 2. Skin temperature, heart rate, respiration rate, shivering intensity and skinfold thickness.

KAY, BOWERS and McKiddle. The protein requirements of rapidly growing steers.

RUSSEL, GUNN and DONEY. Components of weight loss in pregnant hill ewes during winter.

Russel, Gunn, Skedd and Doney. Relationships between chemical and physical composition of Scottish Blackface ewes.

BURT. A note on the effect of giving milk substitute only once a day to early-weaned calves.

CRESSWELL, GILL and FRASER. A note on the use of skim-milk in the feeding of store-lambs.

### Contents of Volume 10, Part 2, May 1968 include:

HINKS, NIELSEN and NIEMANN-SØRENSEN. The use of station and field tests for the improvement of milking performance in dairy cattle. II. Milking rate and time as indicators of a cow's milking ability. III. Breed difference in the yield of milk and butterfat from the fore and rear quarters of the udder.

Braend and Khanna. Haemoglobin and transferrin types of some West African cattle.

BOWMAN, MARSHALL and BROADBENT. Genetic parameters of carcass quality in Down Cross sheep.

HOLMES. Heat losses from young pigs at three environmental temperatures, measured in a direct calorimeter. ELSLEY, MACPHERSON and LODGE. The effects of level of feeding of sows during pregnancy. III. Body composition.

SWAN and LAMMING. Studies on the nutrition of ruminants. 3. The substitution of soya bean meal by urea in diets containing roughage and cereal.

HALLIDAY. Serum y-globulin levels in dead lambs from hill flocks.

TAYLOR. Time taken to mature in relation to mature weight for sexes, strains and species of domesticated mammals and birds.

KAY, ANDREWS, MACLEOD and WALKER. Urea and cereals as supplements for ruminants offered barley straw.

IBRAHIM, EL-SHAZLY, KARAM and HAMADA. A note on the effect of diethylstilboestrol on the performance of lambs.

GRUNDER, ROLLINS, STORMONT and CASADY. A note on differential mortality rates in young rabbits of esterase phenotypes A, AB, and B.

Proceedings of the 47th Meeting of the British Society of Animal Production, Harrogate, 26–27 March 1968.

The Journal is published quarterly in February, May, August and November.

The annual subscription rate is 90s. (U.S.A. \$14.00) single copy 25s. (U.S.A. \$4.00). Orders and subscriptions may be sent to any Bookseller or direct to:

### **OLIVER & BOYD LTD.**

Tweeddale Court, 14 High Street, Edinburgh 1

### THE JOURNAL OF THE

### SOCIETY OF DAIRY TECHNOLOGY

17 DEVONSHIRE STREET, LONDON, W.1. Tel. Langham 5059

The Journal is issued in quarterly parts, four parts constituting a volume. The parts are usually issued in January, April, July and October each year.

The Subscription rate to non-members of the Society, payable in advance, is £3. 5s. net per volume (post free): single numbers, 17s. 6d. net. Subscriptions and all business enquiries should be sent to the Secretary, Society of Dairy Technology, 17 Devonshire Street, London, W. 1.

Each member of the Society receives one free copy of each number. One further copy of each number may (if available) be bought by members for 12s. 6d.

#### CONTENTS OF THE APRIL ISSUE

Factors affecting the Solids-not-Fat Content of the Milk of Herds, by J. P. Walsh

A Comparison of Different Methods of Chemical Disinfection of Farm Dairy Utensils, by L. F. L. CLEGG and BRANKA BACIC

**British Standards** 

Aspects of Milk Quality as seen by a Milk Quality Controller, by H. H. JEFFERY

Some Aspects of the Management of a Modern Dairy, by R. J. BRACEGIRDLE

The Milk and Milk Products Technical Advisory Committee

The Dairy Industry in Italy, by Dott. Giovanni Delforno
The Danish Study Tour, by A. Robinson
Light-Barrier Properties of Various Butter-wrapping Materials, by W. K. Downey and M. F. Murphy
Methods of Mass Chemical Analysis of Milks, by M. G. O'Keeffe

52nd Annual Meeting of the International Dairy Federation

IDF News

**Book Review** 

Section Notes

The Journal publishes not only papers read at meetings of the Society, but also papers on dairy technology by members and non-members

Advertising Offices: 9 GOUGH SQUARE: LONDON: E.C. 4

### COMMONWEALTH BUREAU OF DAIRY SCIENCE & TECHNOLOGY SHINFIELD · READING · ENGLAND

The Bureau is the world's information centre on all matters concerned with dairy husbandry, science and technology. It prepares abstracts, review articles, Technical Communications in book form, and undertakes to answer technical enquiries from authentic dairy scientists.

PUBLICATIONS INCLUDE

### DAIRY SCIENCE ABSTRACTS

### COMPILED MONTHLY FROM WORLD LITERATURE

Annual Subscription 110s. to subscribers in the Commonwealth and the Republic of Ireland, whose Governments contribute to the Commonwealth Agricultural Bureaux

210s. to subscribers in non-contributing countries

THE MILK FAT GLOBULE MEMBRANE by N. KING

Cloth bound Price 15s. od. 99 pp.

MILK AND BUTTERFAT RECORDING by E. D. Ashton

Cloth bound Price 30s. od. 205 pp. Illustrated

Orders and subscriptions should be sent to

COMMONWEALTH AGRICULTURAL BUREAUX · CENTRAL SALES BRANCH FARNHAM ROYAL . BUCKS . ENGLAND

# Journal of Dairy Research

### Back Volumes

1-4 (1929-1933). Two numbers per volume.

25s. net each number

5-30 (1934-1963). Three numbers per volume.

25s. net each number

31-34 (1964-1967). Three numbers per volume.

30s. net each number

Index to Volumes 1-10.

7s. 6d. net

Volume 15, Numbers 1 and 2, was issued as a double part, price 50s. net

The following numbers are out of print

Volume 6, Number 2

Volume 8, Number 1

Volume 8, Number 3

Volume 9

Volume 10

Volume 11, Number 1

Volume 12, Number 1

Volume 13

Volume 14

Volume 24, Number 1

Order from your bookseller or from the publishers

### CAMBRIDGE UNIVERSITY PRESS

# The Journal of Applied Bacteriology

Edited by G. Sykes and F. A. Skinner

The Journal of Applied Bacteriology (previously known as the proceedings of the Society for Applied Bacteriology) is published for the Society to advance the study of microbiology, particularly bacteriology, in its application to industry.

Long established as an international medium for original papers embracing the many aspects of applied bacteriology the Journal serves the widening interests of microbiologists in all fields of research.

The Journal is published four times a year (comprising one volume) in March, June, September and December.

The Editors are ready to consider for publication papers appearing on all aspects of applied microbiology. Review articles may also be accepted.

Papers submitted for consideration should be addressed to:

G. Sykes,
Microbiology Division,
Boots Pure Drug Co. Ltd.,
Pennyfoot Street,
Nottingham, England

#### SUBSCRIPTIONS

Vol. 30, 1967 140s./\$20.00 per annum. Postage outside England 6s. per year. Certain back volumes are obtainable from the publishers. All enquiries regarding subscriptions/advertisements should be addressed to the publishers.

### Published by

### ACADEMIC PRESS LONDON and NEW YORK



Berkeley Square House, Berkeley Square, London, W. 1

## The Journal of General Microbiology

Edited by **B. C. J. G. KNIGHT & A. F. B. STANDFAST**Volume 52, Part 1, June 1968

- J. E. LOVELESS AND H. A. PAINTER The influence of metal ion concentrations and pH value on the growth of a Nitrosomonas strain isolated from activated sludge
- J. PREBBLE The carotenoids of Corynebacterium fascians strain 2 Y
- W. D. LAWTON, B. C. MORRIS AND T. W. BURROWS Gene transfer in strains of Pasteurella pseudotuberculosis
- R. J. THRELFALL The genetics and biochemistry of mutants of Aspergillus nidulans resistant to chlorinated nitrobenzenes
- T. HOLME, A. A. LINDBERG, P. J. GAREGG AND T. ONN Chemical composition of cell-wall polysaccharide of rough mutants of Salmonella-typhimurium
- A. A. LINDBERG AND T. HOLME Immunochemical studies on cell-wall polysaccharide of rough mutants of Salmonella typhimurium
- D. PITT Histochemical demonstration of certain hydrolytic enzymes within cytoplasmic particles of *Botrytis cinerea* Fr.
- I. LAZAR Serological relationships of Corynebacteria
- D. E. EVELEIGH, J. H. SIETSMA AND R. H. HASKINS The involvement of cellulase and laminaranase in the formation of Pythium protoplasts
- J. D. ANDERSON, F. A. DARK AND S. PETO The effect of aerosolization upon survival and potassium retention by various bacteria
- I. LOMINSKI, C. G. GEMMELL AND J. P. ARBUTHNOT A staphylococcal toxic complex affecting particular areas of the mitochondrial electron transport system
- HAVA HAAS, T. G. SACKS AND S. RAZIN Identification of mycoplasmas of human origin
- D. G. MARSH AND P. D. WALKER Free endotoxin and non-toxic material from Gramnegative bacteria: electron microscopy of fractions from Escherichia coli
- J. A. BARNETT The catabolism of acyclic polyols by yeasts

45s. net (\$7.50). Annual subscription £25 net (\$87.50) for fifteen issues

### **CAMBRIDGE UNIVERSITY PRESS**

## JOURNAL OF DAIRY RESEARCH

#### EDITED BY

J. E. FORD, Ph.D.

National Institute for Research in Dairying, Shinfield, Reading, Berkshire

J. A. B. SMITH, C.B.E., Ph.D., D.Sc.

Hannah Dairy Research Institute, Ayr, Scotland

### ASSISTED BY

PROF. L. F. L. CLEGG, (Canada)

SIR DAVID CUTHBERTSON, C.B.E., F.R.S.E., (Glasgow)

DR F. H. DODD, (Reading)

DR H. P. DONALD, F.R.S.E., (Edinburgh)

PROF. P. J. FOURIE, (South Africa)

DR T. GIBSON, (Edinburgh)

DR J. O. IRWIN, (London)

MR G. LOFTUS HILLS, (Australia)

DR L. A. MABBITT, (Reading)

DR W. A. McGILLIVRAY, (New Zealand)

DR A. ROBERTSON, O.B.E., F.R.S., (Edinburgh)

DR K. C. SEN, (India)

DR C. C. THIEL, (Reading)

DR R. WAITE, (Ayr)

DR J. C. D. WHITE, (Ayr)

**VOLUME 35, 1968** 

CAMBRIDGE UNIVERSITY PRESS