

# THE JOURNAL OF DAIRY RESEARCH

EDITED FOR

*The Committee of Management*

BY

A. T. R. MATTICK,  
B.Sc., Ph.D.

The National Institute for Research in Dairying,  
University of Reading

and

N. C. WRIGHT,  
M.A., D.Sc., Ph.D.

The Hannah Dairy Research Institute,  
Kirkhill, Ayr

ASSISTED IN THE

SELECTION OF PAPERS FOR PUBLICATION

BY

DR L. B. BULL (Australia)

DR A. D. BUCHANAN SMITH (Edinburgh)

PROF. E. P. CATHCART, F.R.S. (Glasgow)

DR C. CROWTHER (Newport, Salop)

DR A. CUNNINGHAM (Edinburgh)

DR PAUL FILDES, F.R.S. (London)

DR J. HAMMOND, F.R.S. (Cambridge)

DR E. C. HOOD (Canada)

DR J. O. IRWIN (London)

PROF. J. B. LEATHES, F.R.S. (Wantage)

PROF. F. C. MINETT (London)

PROF. H. A. D. NEVILLE (Reading)

PROF. W. RIDDET (New Zealand)

DR W. M. SCOTT (London)

PROF. J. A. SCOTT WATSON (Oxford)

DR P. J. DU TOIT, F.R.S. (S.A.) (S. Africa)

VOLUME XI

CAMBRIDGE  
AT THE UNIVERSITY PRESS

1940

**PRINTED IN GREAT BRITAIN**

# C O N T E N T S

No. 1 (JANUARY, 1940)

Original Articles:	PAGE
244. The vitamin A and carotene content of Shorthorn colostrum. K. M. HENRY, J. HOUSTON and S. K. KON . . . . .	1
245. The partition of serum calcium about the time of parturition in the dairy cow. J. DUCKWORTH and W. GODDEN . . . . .	9
246. A long-term study of the partition of serum calcium in Ayrshire cows. W. GODDEN and J. DUCKWORTH . . . . .	15
247. The problem of variations in the growth-promoting value of milk for rats. S. BARTLETT, K. M. HENRY and S. K. KON . . . . .	22
248. Haemolytic organism isolated from pasteurized cream. L. O'DROMA . . . . .	37
249. Studies on the methylene-blue reduction test. II. Comparison between the old and the modified methods. T. MATUSZEWSKI and J. SUPIŃSKA . . . . .	43
250. The influence of various factors on the fermentation end-products of the heterofermentative streptococci. C. C. THIEL . . . . .	51
251. The action of chemical disinfectants on bacteriophages for the lactic streptococci. G. J. E. HUNTER and H. R. WHITEHEAD . . . . .	62
252. The effect of commercial pasteurization and sterilization on the vitamin B <sub>1</sub> and riboflavin content of milk as measured by chemical methods. J. HOUSTON, S. K. KON and S. Y. THOMPSON . . . . .	67
253. The measurement and significance of pH values in cheesemaking. J. G. DAVIS and C. C. THIEL . . . . .	71
254. The determination of pH in milk and whey by means of colour indicator paper. L. SEEKLES . . . . .	79
Biennial Reviews of the Progress of Dairy Science:	
Section C. Dairy Chemistry. S. J. ROWLAND and G. W. SCOTT BLAIR . . . . .	84

## No. 2 (MAY, 1940)

## Original Articles:

255. A study of persistency in a herd of Ayrshire cows. G. PONTECORVO . . . . .	PAGE 113
256. The protein requirements for milk production. S. BARTLETT, A. S. FOOT, S. L. HUTHNANCE and J. MACKINTOSH . . . . .	121
257. The influence of various factors on the fermentation end-products of the heterofermentative lactobacilli. C. C. THEL . . . . .	136
258. The vitamin B <sub>1</sub> and riboflavin of milk . . . . .	145
Part I. The application of Jansen's thiochrome test to the estimation of vitamin B <sub>1</sub> in milk. J. HOUSTON, S. K. KON and S. Y. THOMPSON.	
Part II. The different forms of vitamin B <sub>1</sub> in milk. J. HOUSTON, S. K. KON and S. Y. THOMPSON.	
Part III. Effect of stage of lactation and of season on the vitamin B <sub>1</sub> and riboflavin content of milk. J. HOUSTON, S. K. KON and S. Y. THOMPSON.	
Part IV. Comparison of chemical and biological methods of estimation of vitamin B <sub>1</sub> . K. M. HENRY, J. HOUSTON, S. K. KON and P. WHITE.	
259. A note on a simple and accurate viscosimetric form of rennet test. C. W. KING and E. M. MELVILLE . . . . .	184
260. An objective measure of the consistency of cheese curd at the pitching point. G. W. SCOTT BLAIR and F. M. V. COPPEN . . . . .	187
Biennial Reviews of the Progress of Dairy Science:	
Section D. The nutritional value of milk and milk products. S. K. KON . . . . .	196

## No. 3 (SEPTEMBER, 1940)

## Original Articles:

261. A study of the mortality rates of calves in 335 herds in England and Wales (together with some limited observations for Scotland). R. LOVELL and A. BRADFORD HILL . . . . .	225
262. The microbiology of silage made by the addition of mineral acids to crops rich in protein. II. The microflora. A. CUNNINGHAM and A. M. SMITH . . . . .	243

*Contents*

vii

263.	The passage of carotenoids from food to milk in the cow. The fate of lycopene. A. E. GILLAM and S. K. KON	PAGE 266
264.	The effect of variations in the fat percentage and in the reaction ( <i>pH</i> ) of milk media on the heat resistance of certain milk bacteria. A. A. NICHOLS	274
265.	On the use of various sera for the determination of the soluble calcium and phosphorus of milk. G. T. PYNE	292
266.	The influence of "mastitis" upon the yield and quality of Cheddar cheese. C. K. JOHNS, T. J. HICKS and C. A. GIBSON	298
267.	Studies on the chemistry of Cheddar cheesemaking. VII. The measurement of the acidity of cheese and the relation of acidity to grading score. R. M. DOLBY, F. H. McDOWALL and W. RIDDET	305
268.	Subclinical staphylococcus mastitis in herds free from streptococcus mastitis, and its effect upon milk composi- tion. P. M. F. SHATTOCK and E. C. V. MATTICK	311
Biennial Reviews of the Progress of Dairy Science:		
	Section E. The Diseases of Dairy Cattle. P. S. WATTS	316