

CONTENTS

FOREWORD	iii
1. EMULSION STABILITY	1
Stig Friberg	
I. Introduction	2
II. Flocculation Kinetics	3
III. Theory of Colloidal Stability, the DLVO Theory	6
IV. Stabilizing Effect of Solid Particles	11
V. Stabilization by Polymers	15
VI. Stabilization by Surfactants	23
VII. Conclusions	32
Appendix	32
References	34
2. CRYSTAL AND LIQUID CRYSTAL STRUCTURES OF LIPIDS	39
Kare Larsson	
I. Introduction	39
II. Molecular Arrangement in the Solid State	40
III. Liquid Crystal Structures	51
References	65
3. FOOD EMULSIFIERS AND THEIR ASSOCIATIONS	
WITH WATER	67
Niels Krog	
J. Birk Lauridsen	
I. Introduction	68
II. Food Emulsifiers as Food Ingredients	69
III. Manufacture, Properties, and Applications of Some Food Emulsions	72
IV. Phase Behavior of Food Emulsifiers in Aqueous Systems	82
V. Functions of Emulsifiers in Food Emulsions ,	115
VI. The Influence of the Physical State of Food Emulsifiers on the Interaction with Starch Components	127
References	135

4. ICE CREAM	141
K. G. Berger	
I. Introduction	142
II. Ingredients	144
III. Processing	173
IV. Structure and Texture	193
V. Summary	207
Acknowledgments	210
References	210
5. CAKE EMULSIONS	215
I. S. Shepherd	
R. W. Yoell	
I. Introduction	216
II. Technology of Preparation of Cake Batters	217
III. Introductory Description of the Mechanism of Cake Mixing	222
IV. Studies on Cake Systems. Stage I: Batter Preparation and the Early Stages of Baking	224
V. Studies on Cake Systems. Stage Its Intermediate Baking Stage	240
VI. Studies on Cake Systems. Stage III: Structure Development in Cake and Final Structure	245
VII. Basic Problems in the Mechanism of Cake Baking	262
VIII. The Use and Role of Emulsifiers in Cake Technology	270
Acknowledgments	274
References	274
6. ON THE ASSOCIATION OF LIPIDS AND PROTEINS	277
R. P. Rand	
I. Introduction	278
II. The Lipids	279
III. The Proteins	281
IV. Lipid-Protein Complexes	283
V. Summary	293
Acknowledgments	293
References	294
7. MILK AND MILK PRODUCTS	295
E. Graf	
H. Bauer	
I. Introduction	296
II. Milk and Dairy Cream: O/W Emulsion of Fat in Skim Milk	297

III.	Emulsion Stability	346
IV.	Homogenization of Milk and Cream	354
	References	377
8.	MEAT EMULSIONS	385
	J. Schut	
I.	Introduction	386
II.	Meat Structure	388
III.	Meat Proteins	393
IV.	Concept of Meat Hydration	398
V.	Changes in Water-Holding Capacity Post Mortem	411
VI.	Other Factors Influencing the Water-Holding Capacity of Meat	415
VII.	The Matrix of Meat Emulsions	417
VIII.	Fat Emulsification	421
IX.	Meat Emulsion	443
	References	453
	AUTHOR INDEX	459
	SUBJECT INDEX	473