

- MAALØE, O., see STENT, G. S.
 —, see WATSON, J. D.
 MANDL, I., GRAUER, A. AND NEUBERG, C. 540
 MARSHALL, L. M., see FRIEDBERG, F.
 MARTIN, A. V. W. 42
 MAZIA, D., see BERNSTEIN, M. H.
 —, see JAMES, T. W.
 MORTIER, A., see DE DEKEN, R. H.
 MOYSON, F. ET GAVOSTO, F. 479
 MUKHERJEE, S. M. AND WOODS, H. J. 499
 MUDD, S., HILLIER, J., BEUTNER, E. H. AND
 HARTMAN, P. E. 153
 —, see BEUTNER, E. H.
 OLLEY, J. 493
 OVERELL, B. T., see BRYANT, F.
 PALLAGET, C., see CHAIX, P.
 POLLI, E. E. 215
 PONDER, E. 337
 QUASTEL, J. H. AND ZATMAN, L. J. 256
 —, see BRAGANCA, B. M.
 RABINOWITZ, J. L. AND GURIN, S. 345
 RANDALL, J. T., see WILKINS, M. H. F.
 RANDRUP, A. 18
 —, see HECKLY, R. J.
 REDFIELD, R. R. 344
 RODRIGO, F. A. 342
 ROELOFSEN, P. A. 410, 477
 ROWEN, J. W. 391
 —, EDEN, M. AND KAHLER, H. 89
 SALTON, M. R. J. 512
 SCHOONEVELDT, C. J., see ULTÉE, A. J.
 SCHULMAN, J. H., see FEW, A. V.
 SCHURINGA, G. J., see ULTÉE, A. J.
 SHARON, N., see KATCHALSKY, A.
 SHIMONI, A., see BERGMANN, F.
 SIBATANI, A. AND FUKUDA, M. 93
 SIEGEL, A. AND SINGER, S. J. 311
 SINGER, S. J., see SIEGEL, A.
 SMITH, K. M. 210
 SNELL, F. M. 188
 STACEY, M., see DUTTA, S. K.
 STEINERT, M. 427
 STENT, G. S. AND MAALØE, O. 55
 STEYN-PARVÉ, E. P. 121
 — AND VAN DEN HOUT, A. J. 320
 STORCK, R., see WIAME, J. M.
 SUGIOKA, Z., see YASUZUMI, A.
 TANAKA, A., see YASUZUMI, A.
 THOMAS, J. B. AND GOEDHEER, J. C. 385
 —, BLAAUW, O. H. AND DUYSSENS, L. N. M. 230
 THOMPSON, E. O. P. 633
 TORRIANI, A. M., see COHN, M.
 ULTÉE, A. J., SCHOONEVELDT, C. J. AND
 SCHURINGA, G. J. 590
 VAN DEN HOUT, A. J., see STEYN-PARVÉ, E. P.
 VAN DUIN, H. 198, 343
 WALEY, S. G. 27
 WARRINGA, M. G. P. J., see COHEN, J. A.
 WATSON, J. D. AND MAALØE, O. 432
 WATSON, M. L. 1, 349
 WEBER, H. H., see HOFFMANN-BERLING, H.
 WEIBULL, C. AND HEDVALL, J. 35
 WENSINCK, F. AND COHEN, J. A. 184
 WIAME, J. M. ET STORCK, R. 268
 —, — AND BOURGEOIS, S. 627
 —, see DE DEKEN, R. H.
 WILKINS, M. H. F. AND RANDALL, J. T. 192
 WILLIAMS, C. A., see GRABAR, P.
 WOODS, H. J., see MUKHERJEE, S. M.
 WORK, E. AND DENMAN, R. F. 183
 WÖSTMANN, B. S. J., see CLAASSEN, V.
 YASUZUMI, G., SUGIOKA, Z. AND TANAKA, A. 11
 ZATMAN, L. J., see QUASTEL, J. H.

SUBJECT INDEX

- Acetylcholine and glutamine synthesis, in-
 hibitors, interactions, brain slices . . . 83
 Activation energy, enzymic reactions . . . 221
 Activity coefficients, sodium- and potassium-
 phosphates 188
 Adenosine triphosphate, determination in
 yeast and blood 121
 Adrenalin and noradrenalin, oxidation, de-
 fined conditions 469
 DL-Alanine-1-¹⁴C, dissimilation, rat brain
 homogenates 624
 Aldolase, activity, myogen 524
 Aldose-amino acid interaction, kinetics . . . 290
 Amino acids, two-dimensional paper chro-
 matography 344
Anodonta cygnea, carotenoids 114
 Anticoagulant, extraction and purification,
 rabbit muscle 326
 Antigen, specific tubercle —, *Myc. tu-*
berculosis, extraction 402
Bacillus subtilis, metabolism of glutamic acid 268
 —, transamination, biosynthetic activity 627
 Bacterial cells, disintegrated, electron micro-
 scopy 35
 Bacteriophage, nucleic acid transfer 432
 — T₂, *Escherichia coli*, interactions, light
 and electron microscopic studies . . . 143, 153
 — —, preparation and properties of
 DNA 311
 — T₄, reproduction, (radioactive) P as-
 similation 55
 Bile salts, systems containing chicken red
 cell nuclei and —, viscosity changes 337
 Blood, determination of ATP 121
 —, human red cells, haemolysis, freezing
 and thawing 410
 Brain, homogenates, dissimilation of DL-
 alanine-1-¹⁴C 624
 —, slices, acetylcholine and glutamine
 synthesis, inhibitors, interactions . . . 83
 Carbohydrate, brewer's yeast 580
 —, epicuticle of wool 590

- Carbohydrate, metabolism, local and generalized tetanus 184
- , thiamine deficient pigeons, influence on symptoms and death 136
- N-Carboxyleucine anhydride, ^{14}C -labelled, reaction with proteins 180
- Carboxypeptidase, N-terminal sequence 633
- Carotenoids, *Anodonta cygnea* 114
- , *Rhodospirillum rubrum*, light absorption, efficiency in photosynthesis and phototaxis 385
- Cells, extracted with glycerol for contraction studies 628, 629
- Cell wall, baker's yeast, mannan as constituent 477
- , composition, Gram-positive and Gram-negative bacteria 512
- , Dermatophytes, chemical composition 110
- , *Spirillum spec.*, macromolecular monolayer 360
- Cellulose, degradation by sulphuric acid, X-rays and electron microscopy 499
- p*-Chloromercuribenzoate, inhibition of ribonuclease 190
- Chlorophyll, state of — in plant 342
- Cholesterol, radioactive, biosynthesis, particle-free rat-liver extracts 345
- Cholinesterase, purification from ox red cells —, role in conductive process 49
- Chromatography, paper-, organic acids, plant tissue extracts 471
- , paper-, two-dimensional, amino acids 344
- , partition-, homologous series 198, 343
- Chromosomes, resting, electron microscopy, spiralized structure 215
- β -, γ -Chymotrypsin, N-terminal groups 481
- Collagenous fibres, bone, electron microscopy 42
- Countercurrent distribution, phospholipins, effect of solute concentration 493
- Cytochemistry, DNA, Feulgen reaction 93
- Dermatophytes, cell wall, chemical composition 110
- Desoxyribonucleate, see Nucleate
- Desoxyribonucleic acid, see Nucleic acid
- Desoxyribonucleoprotein, see Nucleoprotein
- $\alpha\epsilon$ -Diaminopimelic acid, preparation from bacterial culture fluid 183
- Dinitrophenol, amphibian egg treated with —, metabolism of ribonucleic acid 427
- Diphosphopyridine nucleosidase, estimation of relative activities 256
- Electron microscopy, cellulose, degradation by sulphuric acid 499
- , collagenous fibres, bone 42
- , disintegrated bacterial cells 35
- , *Escherichia coli*-coliphage interactions 143, 153
- , interstitial connective tissue, ground substance 203
- , metabolic nucleus 11
- , microtome for thin-sectioning 1
- , resting chromosomes, spiralized structure 215
- , sodium desoxyribonucleate 355
- Electron microscopy, thymonucleic acid 5
- , tissue sections, complete extraction of embedding material 349
- , virus in cells of infected plants 210
- Electrophoresis, heart muscle proteins 630
- , technique for determining mobilities 18
- , use of milliamperes-hour meter 485
- Embryo, chick, development *in vitro*, inhibition by unnatural cytosine nucleosides 77
- Enzymic reactions, activation energy, true and apparent 221
- , kinetics 27
- Eosin, indole-3-acetic acid, interaction in light and darkness 189
- Epicuticle, wool, carbohydrates 590
- Escherichia coli*, coliphage, interactions, light and electron microscopic studies 143, 153
- , β -galactosidase- and Pz-proteins, biosynthesis 280
- Feulgen reaction, cytochemistry of DNA 93
- Glucose-6-phosphatase, liver, effect of shock 479
- Glutamic acid, metabolism, *Bacillus subtilis* 268
- Glutamine and acetylcholine synthesis, inhibitors, interactions, brain slices 83
- Gluten, wheat, solubility 488
- Glycerol, cells extracted with — for contraction studies 628, 629
- Glycerophosphatase, liver, effect of shock 479
- Glycerophosphate dehydrogenase, activity, myogen 524
- Glycine, precursors 103
- Growth, plant-, dependence on time, mathematical formulation 241
- Haemolysis, human red blood-cells, freezing and thawing 410
- Heart, muscle proteins, electrophoresis 630
- Indole-3-acetic acid, eosin, interaction in light and darkness 189
- α -Keratin, X-rays 483
- Lactenin, separation of two components 196
- Liver, glycerophosphatase and glucose-6-phosphatase, effect of shock 479
- , rat-, particle-free extracts, biosynthesis of radioactive cholesterol 345
- Lysozyme, manganese ions and stability 128
- Manganese ions, stability of lysozyme 128
- Mannan, baker's yeast, cell wall constituent 477
- Microtome, thin-sectioning for electron microscopy 1
- Muscle, contractile proteins, changes, vitamin-E deficient rabbits 70
- , heart, proteins, electrophoresis 630
- , rabbit-, extraction and purification of new anticoagulant 326
- Mycobacterium tuberculosis*, human strains, new mycolic acids 453
- , specific tubercle antigen, extraction 402
- Mycolic acids, *Mycobacterium tuberculosis*, human strains 453
- Myogen, precipitation and crystallisation, enzymic activities 524
- Myokinase, activity, myogen 524
- Nerve membrane, changes, role of cholinesterase in conductive process 49

- Neurospora, polygalacturonase activity . . . 410
- Noradrenalin, see Adrenalin
- Nucleate, desoxyribo-, electron microscopy 355
- , —, light-scattering studies, molecular characteristics 89, 391
- Nuclei, systems containing chicken red cell and bile salts, viscosity changes . . . 337
- Nucleic acid, bacterial, isolation with ceta-vlon 607
- , desoxypentose-, bacteriophage T₂, preparation and properties . . . 311
- , —, Feulgen reaction and cytochemistry 93
- , —, separation from PNA 613
- , desoxyribo-, combination with protamine 595
- , —, surface films 367
- , pentose-, separation from DNA . . . 613
- , ribo-, metabolism, amphibian egg treated with dinitrophenol 427
- , —, pancreas, rate of renewal of P . . 480
- , thymo-, electron microscopy 5
- , transfer from parental to progeny bacteriophage 432
- Nucleoprotein, desoxyribo-, sea urchin sperm, isolation and analysis . . . 600
- , *in vivo*, sperm heads, X-rays . . . 192
- Nucleosides, cytosine- (unnatural), *in vitro* developing chick embryo, inhibition . 77
- Nucleus, metabolic, electron microscopy . 11
- Ovomucoid, -trypsin complex, proteolytic activity, metals and stability . . . 570
- Oxalacetic acid, amino group acceptor in transamination 117
- , spectrophotometric measurement . . 623
- Pancreas, ribonucleic acid-phosphorus, rate of renewal 480
- Penicillin G, sodium-, surface chemistry . 302
- Phosphate, sodium- and potassium-, activity coefficients 188
- Phospholipids, polymorphism, X-ray studies 371
- Phospholipins, countercurrent distribution, effect of solute concentration . . . 493
- Phosphorus (radioactive), assimilation, bacteriophage T₄ reproduction 55
- , —, metabolism, femur and total skeleton, normal and rachitic rats . . 625
- , —, total and specific activity, determination, calcified tissues . . . 632
- Photochemistry, size of fragments of spinach grana, relation 230
- Photosynthesis and phototaxis, *Rhodospirillum rubrum*, light absorption by carotenoids, efficiency 385
- Polygalacturonase, activity, Neurospora, yeast, tomato extract 410
- Protamine, combination with DNA . . . 595
- Protein, brewer's yeast 443
- , contractile muscle —, changes, vitamin-E deficient rabbits 70
- , β -galactosidase- and Pz-, biosynthesis, *Escherichia coli* 280
- , heart muscle, electrophoresis . . . 630
- Protein, human plasma and serum, variability in salting-out curves 320
- , mixtures, method to investigate electrophoretic and immunochemical properties simultaneously 193
- , myogen group, precipitation and crystallisation, enzymic activities . . 524
- , reaction with ¹⁴C-labelled N-carboxyleucine anhydride 180
- Rhodospirillum rubrum*, light absorption by carotenoids, efficiency in photosynthesis and phototaxis 385
- Ribonuclease, inhibition by *p*-chloromercuribenzoate 190
- Ribonucleic acid, see Nucleic acid
- Salting-out curves, human plasma and serum proteins, variability 320
- Sequence, N-terminal, carboxypeptidase . 633
- Shock, glycerophosphatase and glucose-6-phosphatase in liver, effect 479
- Solubilisation, insoluble matter in nature . 540
- Sperm, nucleoprotein *in vivo*, X-rays . . 192
- , sea urchin, desoxyribonucleoprotein, isolation and analysis 600
- Spinach, grana, size and photochemical activity, relation 230
- Spirillum* spec., cell wall, macromolecular mono-layer 360
- Tetanus, local and generalized, carbohydrate metabolism 184
- Thiamine, deficient pigeons, influence of carbohydrate on symptoms and death 136
- Thymonucleic acid, electron microscopy . 5
- Transamination, biosynthetic activity, *Bacillus subtilis* 627
- , oxalacetic acid as amino group acceptor 117
- Trypsin, -ovomucoid complex, proteolytic activity, metals and stability . . . 570
- Virus, in cells of infected plants, electron microscopy 210
- Viscosity, systems containing chicken red cell nuclei and bile salts, changes . . 337
- Vitamin-E, deficient rabbits, changes in contractile muscle protein 70
- Wheat, gluten, solubility 488
- X-rays, cellulose, degradation by sulphuric acid 499
- , cytological mass determination, influence of reference system 186
- , α -keratin 483
- , microradiography, critical evaluation 486
- , nucleoprotein *in vivo*, sperm heads . . 192
- , polymorphism of phospholipids . . 371
- Yeast, baker's, mannan as cell wall constituent 477
- , brewer's, carbohydrates 580
- , —, proteins 443
- , determination of ATP 121
- , fermentation, effects of normal tissue and tumour extracts, DPNase activities 256
- , polygalacturonase activity 410

BOOK REVIEWS

- M. L. ANSON, K. BAILEY AND J. T. EDSALL, Editors, *Advances in Protein Chemistry*, Vol. VI, New York, 1951 346
- M. L. ANSON, K. BAILEY AND J. T. EDSALL, Editors, *Advances in Protein Chemistry*, Vol. VII, New York, 1952. 492
- Atomic Energy Section Department of Security Council Affairs, United Nations, *An International Bibliography on Atomic Energy*, Vol. 2, *Scientific Aspects*, New York, 1952. 489
- G. H. BOURNE AND J. F. DANIELLI, Editors, *International Review of Cytology*, Vol. I, New York, 1952. 200
- V. T. BOWEN, Editor, *The Chemistry and the Physiology of the Nucleus*, New York, 1951. 199
- B. FLASCHENTRÄGER UND E. LEHNARTZ, Herausgeber, *Physiologische Chemie*. Band I, *Die Stoffe*, Berlin, 1951 490
- A. FREY-WYSSLING, *Submicroscopic Morphology of Protoplasm*, Amsterdam, 1953 635
- T. W. GOODWIN, *The Comparative Biochemistry of the Carotenoids*, London, 1952 489
- W. D. McELROY AND B. GLASS, Editors, *Phosphorus metabolism. A symposium on the role of phosphorus in the metabolism of plants and animals*, Vol. I, Baltimore, 1951 201
- W. NOWACKI, *Fouriersynthese von Kristallen und ihre Anwendung in der Chemie*, Basel, 1952 201
- G. PINCUS, Editor, *Recent Progress in Hormone Research*, Vol. VII, New York, 1952 200
- F. SKOOG, Editor, *Plant Growth Substances*, University of Wisconsin Press, 1951 . 347
- L. N. STANILAND, *The Principles of Line Illustration*, London, 1952. 492
- J. B. SUMNER AND K. MYRBÄCK, Editors, *The Enzymes, Chemistry and Mechanism of Action*, Vol. I, Part 2, 1951, Vol. II, Part 1, 1951, Vol. II, Part 2, 1952, New York 200
- E. F. TERROINE, *La Synthèse Protéique*, Paris, 1952 491