

INDEX.

- Acetic fermentation 374
 Achroodextrin 53, 54
 „ from glycogen 62
 Acids, effect of on diastasic action 69, 70
 Actinosphærium 11
 „ intracellular digestion in 202
 Aethalium, diastase in 24
 Alcoholic fermentation 333
 „ in ripe fruits 348, 351
 „ in vegetative parts of plants 350
 „ relation to respiration 353
 „ „ to nutrition 354
 Aleurone layer of grasses 28
 „ work of Haberlandt 28
 „ „ of Brown and Morris 29
 „ „ of Brown and Escombe 29
 Alizarin 163
 Alkalis, influence on diastase 71
 Allyl sulpho-cyanate 155
 Amido-acids 173
 „ source of in digestion 177
 Ammonia, liberated by tryptic enzymes 233
 Amœba 11
 „ intracellular digestion in 202
 Amphopeptone 179
 Amygdalin, decomposition of 6, 147
 Amylase 15
 „ (of Duclaux) 61
 Amylodextrin 53, 54
 Amyloïn 52
 Anthozymase 114
 Antialbumate 173
 „ identity with parapепtone 175
 Antialbumid 173
 „ identity with hemiprotein 175
 „ resemblance to dyspeptone 179
 Antialbumose 178
 Antipeptone, reactions of 179
 „ possible nature of 184
 Anti-residue of proteid digestion 178
 Araban 49
 Arbutin 148
 Argenin 185, 199, 200
 Arrack 346
 Aspergillus, enzymes in—diastase 23, 32
 „ inulase 81
 „ invertase 121
 „ trehalase 138
 „ raffinase 141
 „ melizitase 143
 „ emulsin 151
 „ tannase 168
 „ trypsin 230
 „ lipase 248
 Asphyxiation, its relation to alcoholic fermentation 353, 355, 357
 Atmid-albumin 183
 Atmid-albumose 183
 Atractylate of potassium 153
 Atropine, effect on diastase 71
 Bacteria, diastase in 24, 31
 „ proteolytic enzymes of 231
 „ relations of enzymes of to temperature &c. 233
 „ species producing alcohol 347
 Beet, metabolism of root of 116
 Betulase 166, *see* Gaultherase

- Botrytis, cytase in 91
 Bromelin 209
 ,, mode of preparation of 210
 ,, action on fibrin 210
 ,, ,, on albumin 212
 ,, ,, on myosin 212
 ,, effect of reagents on 212
 Butyric fermentation 369
 Bynedestin 223
 Bynin 223

 Cadaverine 390
 Calcium pectate 291
 Calcium salts, influence on rennet 256
 ,, ,, on thrombase 272
 ,, ,, on pectase 290
 Cane-sugar, relation to protoplasm 115
 ,, formation in plants 117
 ,, relation to starch 117
 Carchesium 11
 ,, digestive changes in 203
 Caroubin 105
 Caroubinase 105
 Casease 233
 Casein 251
 Caseinogen 251
 ,, digestion by pepsin 194
Casse of wines 320
 Cellulose, products of hydrolysis of 89
 ,, digestion of by animals 102
 Cell-wall, composition of 86, 297, 299
 Choline 390
 Chromogen produced by pepsin 193
 ,, contained in various fungi 316
 Chymosin 251
 Citric fermentation 372
 Coagulated proteid 270
 Coagulation of blood 266, 271, 273
 ,, ,, inhibition of by certain salts 275
 ,, ,, inhibition of by peptone 275
 ,, ,, intravascular 277, 278, 416
 Coniferin, action of emulsin on 152
 Cradina 224

 Cytase 29, 89
 ,, preparation of 94, 96
 ,, properties of 97
 ,, localisation of in grasses 97, 98
 ,, ,, ,, in palms 99
 ,, products of action of 103

 Deutero-proteose, reactions of 180
 Dextran 345, 385
 Dextrin 50
 ,, primary and secondary 54
 Dextrinase (of Wijsman) 60
 ,, (of Duclaux) 61
 Dextrose, *see* Glucose
 Diastase, discovery of 6, 15
 ,, sources of 16
 ,, distribution of 16, 22, 23, 43
 ,, varieties of 17, 65
 ,, analysis of 47
 ,, course of action of 49, 51, 59
 ,, relations to temperature &c. 65
 ,, influence of acids and alkalis on 70, 71
 ,, conditions of secretion of 73
 ,, inhibition of 74
 ,, methods of preparation of—
 Payen and Persoz 6, 15
 Mialhe 16, 46
 Bourquelot and Hérissé 24
 Cohnheim 45
 Krawkow 46
 von Wittich 46
 Lintner 46
 Loew 47, 48
 Musculus 47
 Wroblewski 48, 49
 ,, from salivary glands of insects 43
 Diastase, animal 15, 16
 ,, ,, distribution of 33, 34, 35
 ,, ,, secretion of 36
 ,, ,, varying amounts of 38
 ,, ,, its existence in the liver 39

INDEX.

507

- Diastase, animal, identity of with vegetable diastase 44
- Diastase of secretion 24
- " " work of Brown and Morris and of Haberlandt 25
- " " distribution of 25
- " " formation of 27
- " " increase during germination 28
- " " action on starch paste 64
- Diastase of translocation 17
- " " distribution of 18, 19
- " " development of 18
- " " compared with animal diastase 38
- Digitalin 153
- Dionæa, enzyme in 229
- Drosera, enzyme in 229
- " secretion in 402
- Dyspeptone 175, 176
- " probable identity with antialbumid 179
- Dys-proteose, reactions of 180
- Dystropodextrin 63
- Edestin 223
- Emulsin 145, 147
- " actions of 147, 152, 153
- " distribution of 148
- " preparation of 152
- " occurrence with lactase 145, 154
- " Guignard's reaction for 149
- " secretion by animals 154
- " relation to temperature 154
- " conditions of action 154
- " suggested action on oil 171, 246
- Emulsive enzymes 237
- Enzymes, meaning of the term 7
- " secretion of 8
- " intracellular action of 11
- Enzymes, features of their action 12
- " classification of 14
- " action of light upon 428
- Erythrite, fermentation of 373
- Erythro-dextrin 50, 54
- " from glycogen 62
- Erythrozym 147, 162
- " relation to emulsin 164
- Ferment, old ideas of 2
- " unorganised 6
- " organised 7, 9, 391
- " organised nature of action of 10, 12
- Ferment glucosique* of Berthelot 112
- Fermentation, definition of 9
- " intracellular 10
- Fibrin 267
- Fibrin ferment, *see* Thrombase
- " (Crustacean) 280
- Fibrine soluble* of Denis 277
- Fibrinogen 267
- Fibrino-plastin 267
- Fishes, diastase in 43
- Galactase 207
- Galactose, derived from lactose 144, 154
- " from Xanthorhamnin 165
- " alcoholic fermentation of 337
- Gaultherase 147, 166
- Gaultherin 166
- Gelatin, digestion of by pepsin 193
- " " trypsin 201
- " " galactase 208
- " " enzymes of microbes 233
- Gentianose 127
- Ginger-beer plant 342
- Glucose 56, 111, 128
- " distribution of 130
- " capacity of hydrolysis 132
- " amounts of in different tissues 134
- " optimum point of 135
- " action on amygdalin 136
- Glucose, reactions of 55
- " produced in liver 55

- Glucose, method of separating it from fructose 111
- Glucosides 146
 „ nutritive value of 171
 „ relation to bouquet of wines 326
- Glycerine, formation of in alcoholic fermentation 4
 „ produced in the hydrolysis of fat 237
 „ an antecedent of alcohol 347
 „ fermentation of 374
- Glycogen, its function 38
 „ its digestion 39
 „ action of diastase on 61
- Glycolysis in blood 327
- Gum-ferment 109
- Hadromase 107
- Hæmolymph of Crustacea 281
 „ „ coagulation of 280, 283
- Helicin 148
- Hemialbumose 173
 „ decomposition of 177
 „ reactions of 178
 „ correspondence with Meissner's and peptone 179
 „ a mixture 180
- Hemipeptone 174
 „ reactions of 179
- Hemi-residue of proteid digestion 178
- Hesperidin 153
- Hetero-proteose, reactions of 180
- Hippuric acid, decomposition by microbes 302
- Histozyne 307
- Hordein 223
- Hydrocyanic (Prussic) acid, from amygdalin 147
 „ from linamarin 170
 „ nutritive value of 171
- Hydrogen, evolved from plants 367
- Hydroquinone, formed from arbutin 148
 „ action of laccase on 312
- Hypotheses of fermentation, of Fischer 451
 „ of Liebig 454
 „ of Berzelius 454
 „ theory of electric hydrolysis 455
 „ of de Jager 455
 „ of Bunsen 458
- Hystidine 185
- Indican, action of emulsin on 153, 170, 326
- Indiglucin 171, 326
- Indigo-white 326
- Indol 387
- Insecta, enzyme in 198
- Insectivorous plants 225
- Intercellular protoplasm of Russow 298
- Intestine, digestive changes in, work of Brown and Heron 129
- Intramolecular respiration 355
- Inulase 79, 80
 „ zymogen of 85
 „ conditions of working 85
- Inulin, distribution of 77
 „ properties of 78, 82
 „ decomposition-products of 83, 84
- Invertan 431
- Invertase 111
 „ discovered by Berthelot 112
 „ distribution of 113, 117, 118
 „ extraction of 123
 „ action of 124
 „ conditions of action 124
 „ relations to temperature 125
 „ effect of heating in presence of cane-sugar 126
 „ action on other polysaccharides than cane-sugar 127
 „ nature of 429
- Invertin 111, 115
 „ distribution of 115, 122. Also *see* Invertase
- Invert-sugar 111
- Isomaltose (of Fischer) 56
 „ (of Lintner) 56
 „ (of Ling and Baker) 57
 „ (of Brown and Morris) 57

INDEX.

509

- Jalapin 153
- Kephir 195, 340, 341
- Khuther 169
- Koji 345
- Koumiss 340
- Lab 251
- Laccase 309
 ,, distribution of 313, 315
 ,, association with manganese 314
- Laccol 311
- Lactase 111, 144
- Lactic fermentation 367
- Lactose 144
 ,, oxidation of by enzyme 331, 369
- Leaven, action of 2
- Leech extract, action of 271
- Leguminosæ, richness in diastase 21
- Leucin 174
- Leucodextrin 60
- Leucomaines 390
- Leucosin 223, 422, 424
- Linamarin 170
- Linum, enzyme in 170
- Lipase 236
 ,, vegetable 242
- Liver enzymes 39, 41
- Liver of Crustacea and Mollusca a hepato-pancreas 43, 193
- Lotase 169
- Lotoflavin 170
- Lotusin 170
- Lysatinin 199
- Lysin 199
- Malic acid fermentation 373
- Maltase (of Wijsman) 60. Also *see* Glucose
- Malto-dextrin (Herzfeld) 51
 ,, (Brown and Morris) 52, 53
- Maltose, the ultimate product of diastatic action 50, 51, 54, 55, 58, 59, 63
 ,, bi-rotation of 53
 ,, reactions of 55, 129
- Maltose, inhibitory effect of on hydrolysis of starch 72
 ,, fate of in animal body 128
 ,, products of its hydrolysis 129
- Manganese, relation of to laccase 314
- Manna 143
- Mannitol, fermentation of 378
- Melibiose, *see* Raffinase
- Melibiose 141
- Melizitase 111, 142
- Melizitose 143
- Metacasein 201, 259
- Metamaltose 54
- Metapectic acid 87, 88
 ,, relation to arabinose 89
- Metapectine 88, 289
- Metapeptone 175, 176
- Methyl-glucosides 451
- Methyl-salicylic acid 166
- Middle lamella 89
 ,, nature of 293
- Morozymase 114
- Mulberry, enzymes in 114
- Myo-albumin 285
- Myoglobulin 285
- Myosin-ferment 283
- Myosinogen 278, 285
- Myrosin 147, 155
 ,, special secreting cells 157
 ,, localisation of 156
 ,, actions of 160
 ,, chemical and physical properties of 160
 ,, action of reagents on 161
 ,, suggested action on oil 171
 ,, Guignard's reaction for 420
- Myxomycetes, enzyme in 230
- Nepenthes, enzyme in 227
- Neuridine 390
- Nitric fermentation 380
- Nucleo-histon 279
- Nucleo-proteids 194
 ,, digestion of by pepsin 194
 ,, relation to coagulation of blood 279
 ,, ,, to glycolysis 330

- Nucleo-proteids, relation of enzymes to 433
- Nucleus, its relation to secretion 405
- Ænoxydase 320
 „ temperature relations 322
- Oil of winter-green 166
- Optimum point 13
- Organised ferments 391
- Oxalic fermentation 373
- Oxidases 308
 „ relation to bouquet of wines 325
 „ action on milk-sugar 331
- Oxycelluloses 87
 „ hydrolysis of 103
- Oxy-urushic acid 310
- Palms, cytase in 99
- Pancreas, relation to glycolysis 329
- Pancreatic juice, enzymes in 195
 „ process of secretion 203
 „ proportion of enzymes influenced by diet 232
 „ action in digestion of fat 236
 „ action on milk 201
- Papain, occurrence 214
 „ conditions of action 215
 „ course of action 216
- Paraglobulin 268
- Paramyosinogen 285
- Parapeptine 88, 289
- Parapeptone 175, 176
 „ resemblance to antialbumose 179
- Pectase 287
 „ relations to calcium 290
 „ to barium and strontium 292
 „ influence of reaction on working 292
 „ distribution of 293
- Pectic acid 87, 88, 287, 289, 297
- Pectic compounds, reactions of 288
- Pectinase 104
- Pectinate 292
- Pectine 87, 88, 287, 289
- Pectoses 87, 88, 287
 „ products of hydrolysis of 103
- Pectosic acid 287
- Penicillium, enzymes in—diastase 32
 „ emulsin 151, 153
 „ trypsin 230
 „ lipase 248
- Pepsin, discovered by Schwann 6
 „ prepared by Brücke 7
 „ points of difference from trypsin 99, 186, 205
 „ modes of preparation of 187
 „ distribution of 189
 „ conditions of working of 191
 „ relations to temperature 191
 „ effect of various reagents on 192
 „ course of action 193
 „ reactions of 427
- Pepsinogen 409, 417
- Peptogens 205
- Peptone, influence on diastasic action 68
 „ (of Meissner) 176
 „ action of dehydrating agents on 184
- Peziza, cytase in 90
- Phagocytes 367
- Phenol 387
- Phillyrin 170
- Phloretin 148
- Phlorizin 148, 153
- Phosphates, influence on diastase 70
- Pialyn 237
- Pine-apple juice, proteids of 210
- Pinguicula, enzyme in 229
- Plasmase 266
- Plasmine 267, 277
- Plasmosomata 407
- Polyporus, diastase in 23
 „ emulsin in 153
- Polysaccharides 110, 336
 „ condition of fermentation of 336
- Populin 153, 170
- Pressure 251
- Propionic fermentation 371
- Protamines 200
- Proteid, decomposition by acids 173
 „ „ by enzymes 175

INDEX.

511

- Proteid, decomposition by water heated under pressure 183
 ,, relation to peptone 184
 Proteinochromogen 200
 Proteolysis, Kühne's schemes of 174, 178
 ,, ,, modification of these by Neumeister 181
 ,, compared with hydrolysis of starch 182
 ,, objections to Kühne's views of 184
 ,, course of in cereals 222
 Proteolytic enzymes, course of secretion of 203
 ,, existence in bacteria 231, 232
 Proteoses 180
 ,, mode of separation from peptone 180
 ,, stages in hydrolysis of proteids 182
 ,, comparative powers of dialysis of 182
 Prothrombin 274
 Protoplasm, the active agent in fermentation 5
 ,, theory of arrangement 7
 ,, properties of 7
 Proto-proteose, reactions of 180
 Prozymogen 407
 Ptomaines 387, 390
 Ptyalin 15, 16
 Ptyalose 55
 Putrefaction 387
 Putrescine 390
 Pyrogallol, action of laccase on 312
- Raffinase 111
 Raffinose 127, 141
 Raggi 346
 Reactions of enzymes, with orcin 419
 ,, ,, with tincture of guaiacum 420
 Reducing enzymes 331
 Rennet 195, 250
 ,, source of 252
 ,, preparation of 252
 ,, reactions of 254
 ,, effect of various reagents on 255
- Rennet, influence of calcium salts 256
 ,, theories of action 258, 264
 ,, peculiarities of pancreatic rennet 259; differences from gastric rennet 260
 ,, inhibition of action 261
 ,, (vegetable) 261
 Respiratory enzymes 308
 Reverse action of enzymes 460, 461
 Rhamnase 147, 165
 Rhamnetin 165
 Rhamnin 165
 Rhamnose 165
 Rhus, tannase in 169
 Rubiadipin 163
 Rubiafin 163
 Rubiagin 163
 Rubian 162
 Rubiretin 163
- Saccharomyces 4
 Salicin 148
 ,, action of emulsin on 152
 Salicylic aldehyde 148
 Saligenin 148
 Salivary glands, of mammals 35
 ,, of insects 43
 ,, of molluscs 44
 ,, process of secretion in 76
- Salts, effect on diastasic action 66, 69
 Saponifying enzymes 237
 Scutellum, the seat of formation of diastase 25
 ,, secretion in 401
 Secretion, process of 37, 398
 Seminase 107
 Seminose 103
 Sinalbin 160
 Sinigrin 155
 Skatol 387
 Solanin 153
 Sponges, enzyme in 197
 Steapsin 237
 Stomata, action of diastase in opening 76
 Succinic acid, formation of in alcoholic fermentation 4

- Sugars, constitution of 110
 „ formation from fat 245
 Synaptase, *see* Emulsin
- Taka 24
 Tamus, cytase in 98
 Tannase 168
 Tannin, relations to diastase 71
 „ decomposition by tannase 168
 „ oxidation of 324
 Thrombase 266, 268
 „ time of formation 269
 „ nature of 269, 271
 „ action of calcium salts on 272
 „ influenced by other neutral salts 275
 „ sources of 278
 Thrombin 266
 Thrombosin 279
 Tissue fibrinogens 279, 415
 Torula ureæ 302
 Touranose 143
 Trehala 138
 Trehalase 111, 136
 „ mode of preparation of 137
 „ conditions of action 138
 „ differences from glucase 139
 „ distribution of 140
 Trehalose 136
 Trypsin, points of difference from pepsin 186, 195, 199, 205
 „ preparation of 195
 „ distribution of 197
 „ conditions of action 198
 „ (vegetable) 209, 219, 222, 224
 „ action of 220
 „ identity of animal and vegetable trypsins 234
 Trypsinogen 410
 Tryptophane 200
 Tyrosin 174
 Tyrosinase 317
 „ mode of separation from laccase 319
 „ temperature relations 319
- Uraster, enzyme in 197
 Urease 301
 „ discovery of 303
 „ action on urea 303
 „ action on asparagin 307
 Urine, fermentation of 301
 Urushi 309
 Urushic acid 309
- Verantin 163
 Vesiculase 286
 Viscous fermentation 384
 Vitellin, digestion of 181
- Worms, enzyme in 197
- Xanthine 162
 Xanthorhamnin 165
- Yeast, nature of 3, 4
 „ diastase in 24
 „ excretion of invertase by 127
 „ glucase in 135
 „ raffinase in 142
 „ lactase in 145
 „ trypsin in 230
 Yeast-extract, inverting action of 6
- Zymase (of Bechamp) 114
 „ (of Buchner) 359
 „ in fruits 361
 Zymogen 38, 405
 „ of inulase 85, 414
 „ contained in resting glands 204
 „ of vegetable trypsin 221, 414
 „ of thrombase 274, 415
 „ of pepsin 408
 „ of rennet 410, 414
 „ relation to nucleus 405
 „ of saliva 410
 „ effect of light on 412
 „ of lipase 414
 Zythozymase 114