STEIN, Y. AND B. SHAPIRO 197	VENDRELY, C., see KNOBLOCH, A.
Stephenson, M. L., see Hoagland, M. B.	VENDRELY, R., see Knobloch, A.
STOPPANI, A. O. M. AND C. MILSTEIN 655	VERNON, L. P. AND E. D. IHNEN 115
STRANGE, R. E. AND C. B. THORNE 199	VOGEL, H. J., see YURA, T.
Sundararajan, T. A.,	VOLFIN, P., H. CLAUSER AND D. GAUTHERON 137
see Sampath Kumar, K. S. V.	—, see Gautheron, D.
SUZUKI, S., N. TAKAHASHI AND F. EGAMI 444	Volkin, E., see Cohn, W. E.
SVENNERHOLM, L 604	WADE, R. D., see WILCOX, P. E.
TACHIBANA, T., K. INOKUCHI AND T.	Waelsch, H., see Miller, A.
INOKUCHI	WAKIL, S. J., J. W. PORTER AND D. M.
Takahashi, N., see Suzuki, S.	GIBSON 453
TAKATA, K. AND S. OSAWA 207	WARAVDEKAR, V. S. AND L. D. SASLAW . 439
TAUSSIG, A. AND E. H. CREASER 448	WATSON, R. W., see CONNELL, G. E.
THOAI, N. V., see ROBIN, Y.	WEILL, G., see BENHAMOU, N.
, see Roche, J.	WERBA, S. M., see MARRIAN, D. H.
THOMPSON, J. F., see MARSH, B. B.	WILCOX, P. E., J. KRAUT, R. D. WADE AND
THORNE, C. B., see STRANGE, R. E.	H. NEURATH
TISDALE, H. D., see BASFORD, R. E.	WILSON, T. H. AND L. KAZYAK 124
TOENNIES, G., see BAKAY, B.	Wolin, M. J., F. J. Simpson and W. A.
—, see Shockman, G. D.	Wood 635
TONOMURA, Y., H. MATSUMIYA AND S.	WOOD, W. A., see Wolin, M. J.
KITAGAWA 568	WYCKOFF, R. W. G., see Mosley, V. M.
UNGAR, F. AND B. R. BLOOM 431	YURA, T. AND H. J. VOGEL 648
VAN DEN ENDE, M., see Polson, A.	ZAMECNIK, P. C., see HOAGLAND, M. B.
Vanderhaeghe, F., see Ledoux, L.	ZIEGLER, D. M., see LESTER, R. L.

## SUBJECT INDEX

Acetate, radioactive, incorporation into	Alg	gae
lipid by adipose tissue in vitro	430	
—, synthesis of C <sub>4</sub> -dicarboxylic acids		—,
from — by a "glyoxylate bypass"		
of Kreb's cycle	651	
Actinomycetin, action on bacterial cell	An	in
walls ,	160	
Actomyosin, interaction with ATP, effect		,
of ethylenediaminetetraacetic acid.	568	
Acyl adenylate, non-enzymic reactions of		····,
imidazole and ——	227 a-A	١m
Adenosine triphosphatase, activity of	•	
myosin, action of pyrophosphate	644	
, ATP-32P and, ionic require-	2-4	١m
ments for oxidative phosphorylation	440	
—, myosin B —, acceleration by mag-	Ap	ne
nesium, effect of monovalent salts .		F
Adenosine triphosphate, interaction with	J-J L-A	۱ra
actomyosin, effect of ethylenedi-		
aminetetraacetic acid	£68	
Adipose tissue, incorporation of radio-	As	റവ
acetate into lipid in vitro		
Adrenaline, formation from noradrenaline	430 6#8	
, influence on acid-soluble phosphate	050	
, innuence on acid-soluble phosphate		,
fractions of rat uterus	As	^~
-, inhibition of metabolism of rat		CO.
uterus, influence of hypophysectomy		
—, stability of solutions, adverse effect	As	рa
of ascorbic acid	170	
D-Alanine, constituent of spores of Bacillus		
megatherium	199	. د د
Aldenyde denydrogenases, specific pro-	Az	ICI
tection of thiol groups by pyridine-	C	
nucleotide coenzymes	055	

Algae, blue-green —, light-dark tran-	
sients in oxygen exchange of — .	436
, periodic phenomena in photo-	• -
synthesis as reflected by oxygen ex-	
change of —	434
Amino acids, composition of human haemo-	
globins, observations	640
, esterification of carboxyl groups by	
mustard gas and related compounds	
, micro-method for determination	209
$\alpha$ -Aminoadipic $\beta$ -semialdehyde, enzymic	
formation from hexahomoserine,	
Neurospora crassa	648
2-Aminofluorene, acylation by rat liver	
in vitro	631
Appendix, rabbit, ribonucleoprotein from	
microsomes	207
L-Arabinose, fermentation, role of L-	
ribulose-5-phosphate-p-xylulose-5-	
phosphate stereoisomerase	635
Ascorbic acid, adverse effect on stability	
of adrenaline and noradrenaline	
solutions	178
, isolation of dependent DPNH-	
oxidase	222
$\label{eq:Ascorbic acid oxidase, activation and other} Ascorbic acid oxidase, activation and other$	
properties	42
Aspartic acid, enzymic transamination,	
inhibition by hydroxyaspartate, 2,3-	
diaminosuccinate and 2,3-diamino-	78
propionate	70
respiration and phosphorus utili-	
sation, Azotobacter vinelandii 388,	
Sation, Azotobacter vinetanati 300,	222

Azotobacter vinelandii, inhibition of nitro-		DPNH-oxidase, fragmentation	294
gen fixation, respiration and phos-		Electron transport particle, fragmentation	
phorus utilisation by azide and		with desoxycholate	100
cyanate	555	Electrophoresis, mobilities of adapted	
Bacillus megatherium, D-glutamic acid and		MEF <sub>1</sub> poliomyelitis virus and its	
D-alanine as constituents of spores .	199	soluble antigen	600
Bacteria, action of fluorodinitrobenzene on		—, zone — on starch gel, serum $\beta$ -	
cell walls	9	globulins	647
Bacteriophage, T2r ——, chromatographic		Embryo, developing chick ——, DNA and	
purification	448	cell division	576
Carbohydrates, enzymic transsulfation		—, —, nucleic acid content	584
from a phenol to ——	444	Escherichia coli, accumulation of indole-3-	
Carbon dioxide fixation, hen oviduct,		glycerol by tryptophan auxotrophs	
study		of ——	429
Catalase, intracellular, M. lysodeikticus	306	Ethylenediaminetetraacetic acid, effect on	
Cell wall, bacterial, action of actinomycetin	160	interaction of actomyosin and ATP	568
—, —, action of fluorodinitrobenzene	9	Fatty acid, enzyme system for recon-	
Chromatography, purification of cysteinyl-		struction of synthesis, preparation	
glycinase	401	and purification	453
—, purification of T2r bacteriophage	448	Fatty acid esters, substrates for trypsin	
—, rattlesnake venom, separation of		and chymotrypsin	2 I I
three phosphodiesterases	619	Flavin adenine dinucleotide, metabolism	
—, study of sugars in coelomic plasma,		and lactation	423
Phascolosoma vulgare	520	Fluorodinitrobenzene, action on bacterial	
Chymotrypsin, fatty acid esters as sub-		cell walls	9
strates	2 I I	$\beta$ -Globulins, serum, zone electrophoresis on	
a-Chymotrypsinogen, molecular weight	72	starch gel	647
Citrate, oxidation in rat liver homogenates,		Glucose oxidase, substrate specificity	
inhibition by glyoxylate	437	p-Glutamic acid, constituent of spores of	
Cortisone, increased transaminase activity		Bacillus megatherium	199
in liver after administration of ——	250	Glutamic $\gamma$ -semialdehyde, enzymic for-	
Creatine, occurrence in invertebrates, its		mation from pentahomoserine,	
biological significance	514	Neurospora crassa	648
Cuticle, earthworm, chemical structure	67	Glutamine, enzymic acylation by phenyl-	
Cyanate, inhibition of nitrogen fixation,		acetic acid	654
respiration and phosphorus utili-		Glycerides, neutral —, synthesis by	
sation, Azotobacter vinelandii 388,	555	fractions of rat liver homogenates .	197
Cystamine, oxidation by diamine oxidase,		Glycolysis, anaerobic, rat uterus, inhibition	
cystaldimine as product	353	by adrenaline and growth hormone,	
Cysteinyl-glycinase, chromatographic puri-		influence of hypophysectomy	385
fication	401	Glycylglycine dipeptidase, demonstration	
Delta state, and thaw rigor of muscle	427	of formation of complex with cobalt	209
Desoxycholic acid, fragmentation of elec-		Glyoxylate, citrate oxidation in rat liver	
tron transport particle	100	homogenates, inhibition by ——.	437
Desoxyribonucleic acid, see Nucleic acid		Growth hormone, see Hormone	
2-Desoxyribose, method of estimation	439	Guanidine, hirudonine, a new biological	
Diamine oxidase, cystaldimine as product		monosubstituted derivative	381
of oxidation of cystamine	353	Haemoglobins, human, observations on	
Diaminopimelic acid, biosynthesis, N-		amino acid composition	640
succinyl-L-diaminopimelic acid as		Hepatocarcinogens, effects on isolated liver	
intermediate	216	mitochondria	442
2,3-Diaminopropionic acid and 2,3-di-		Hexahomoserine, enzymic formation of $a$ -	
aminosuccinic acid, inhibition of en-		aminoadipic $\beta$ -semialdehyde from	
zymic transamination of aspartic acid	78	, Neurospora crassa	648
Diphosphopyridine nucleotide, reactivity		Hexose-6-phosphate, interconversion to	
of bound — of muscle triose phos-		ribose-5-phosphate in human blood,	
phate dehydrogenase	141	mechanism	87
, reduced, fluorescence spectro-		High speed shaker, for disruption of cells	
photometry in intact cells	19	at low temperatures	203
, role of bound in phosphory-		Hirudonine, a new biological monosubsti-	
lation	155	tuted guanidine	381
DPNH-cytochrome c reductase, heart,	_	Histones, dialyzability	329
kinetic studies	241	Homogenizer, hydraulic — for con-	
DPNH-oxidase, ascorbic acid dependent,		trolled release of cellular components	
isolation	222	from various tissues	254

Hormone, growth —, inhibition of anaerobic glycolysis of rat uterus.	285	of Phascolosoma vulgare	520
, pituitary growth, partial frac-		Mammary gland, phosphopeptides in lactating —	218
tionation		6-Mercaptopurine ribotide, enzymic formation	432
—, thyroid —, culture of thyroid gland of young rats in vitro, bio-		Mercaptopyruvate, enzymic transfer of sulfur to sulfite or sulfinates	324
synthesis of ——		Micrococcus lysodeikticus, intracellular catalase	306
charcoal	<b>3</b> 97	Microsomes, rabbit appendix, ribonucleo- protein from ——	
zymic transamination of aspartic acid Hydroxylation, through activation of	78	Mitochondria, liver, isolated, effects shown by hepatocarcinogens	
oxygen by peroxidase $\Delta^{4}$ -3-Hydroxy steroids, enzymic conversion	225	, swollen, displacement of thiamine	
to $\Delta^4$ -3-ketones	431	pyrophosphate	
Hypophyseal growth hormone, influence on acid-soluble phosphate fractions		acid phosphatase	532
of rat uterus	133	structure of prosthetic group Muscle, glycerinated, contraction and	649
lism of rat uterus by adrenaline, influence of ——	385	relaxation, effects of phosphoenol- pyruvate	461
Imidazole, non-enzymic reactions of acyl adenylate and ——		, mammalian, transfer of sodium ions between and surrounding	7
Indole-3-glycerol, accumulation by tryp-		medium	333
tophan auxotrophs of Escherichia coli Insulin, metabolism of human embryonic	429	, pH-dependence of contraction of models, influence of relaxing factor.	482
and malignant cells, their response to ——	365	, relaxation in living, possible role of phosphocreatine-phospho-	
Intestine, hamster and rat, acid-base changes across the wall	124	kinase system	
Inulin, diffusion in extracellular spaces of mammalian tissues	I	Mustard gas, and related compounds, esterification of protein and amino	
a-Ketoglutaric dehydrogenase complex, reversible reduction of thioctamide		acid carboxyl groups	645
catalyzed by —	220	ase activity	644
Lactobacillus pentosus, L-ribulokinase and formation of D-xylulose phosphate.		Myosin B ATPase, acceleration by magnesium, effect of monovalent salts.	
Lens, calf, free nucleotides Lipaemia-clearing factor, mechanism of	•	Nerve, dissociation of fibrous protein Neurospora crassa, enzymic formation of	83
lipolytic action Lipase, pancreatic ——, interactions with	638	glutamic $\gamma$ -semialdehyde and $\alpha$ - aminoadipic $\beta$ -semialdehyde from	
triglycerides	425	penta- and hexahomoserine Nitrogen fixation, Azotobacter vinelandii,	648
natural fats	414	inhibition by azide and cyanate Noradrenaline, formation of adrenaline	555
Lipid, incorporation of radioacetate by adipose tissue in vitro	430	from	658
Liver, cell fractions, distribution of prote- ase activities	45I	, stability of solutions, adverse effect of ascorbic acid	178
——, effects shown by hepatocarcinogens on isolated mitochondria	442	Nuclease, ribo —— A and ribo —— B, factors altering activities	
—, increased transaminase activity after administration of cortisone	250	, ribo, action on neoplastic growth, metabolic aspects of carcino-	
—, rat, acylation of 2-aminofluorene in vitro		static effect	
, homogenates, inhibition of		, some spectrophotometric and polarimetric experiments	
citrate oxidation by glyoxylate, —, resting and regenerating,	43/	, studies on disulfide bridges.	
nucleotide composition of total RNA in subcellular fractions	61	Nuclei, rapid method for preparing poly- merized DNA from tissues, based on	
by fractions of homogenates	197	separation of ——	
Lung, tumour-bearing rats, chemical changes in ——	58	bryos and hen's egg	
Malonate, action on respiration of ovocyte		products	359

Nucleic acid, desoxyribo ——, amount in	Peptides, intracellular, Pseudomonas hydro-	
single trout sperm 201	phila	
—, —, developing chick embryo, cell	, micro-method for determination	209
division and —— 576	, phospho, in lactating mammary	_
—, —, polymerized, rapid method for	gland	218
preparing from tissues, based on	Peroxidase, hydroxylation: activation of	
separation of nuclei 261	oxygen by ——	225
—, of TMV, distribution of thiouracil 205	Phascolosoma vulgare, chromatographic	
—, ribo —, heterogeneity of nuclear	study of sugars in coelomic plasma,	
	action of different substrates and	
—, —, nucleotide composition in sub-	malonate on respiration of ovocyte.	520
cellular fractions, resting and re-	, exogenous and endogenous respi-	
generating rat liver 61	ration of ovocyte, effect of sea	
—, —, protein and — formation,	water	267
comparative studies 450	Phenylacetic acid, enzymic acylation of	
—, virus, combination with protein from	glutamine by —	654
different strains 540	Phosphatase, alkaline ——, true substrates	14
Nucleoprotein, ribo —, from rabbit ap-	, prostatic acid, action of muco-	
pendix microsomes 207	polysaccharides on ——	$53^2$
Nucleotide, composition of total RNA in	Phosphocreatine-phosphokinase system,	
subcellular fractions, resting and re-	possible role in relaxation in living	
generating rat liver 61	muscle	474
—, diphosphopyridine —, reactivity	Phosphodiesterases, three—, rattlesnake	
of bound — of muscle triose phos-	venom, separation by chromato-	_
phate dehydrogenase	graphy	619
,, reduced, fluorescence spectro-	Phosphoenolpyruvate, contraction and	
photometry in intact cells 19	relaxation in glycerinated muscle,	_
, role of bound in phos-	effects of —	401
phorylation	Phosphomonoesterase, human parotid sali-	- 6
—, flavin adenine di —, metabolism	vary acid —	490
and lactation 423	Phosphopeptides, in lactating mammary	0
, pyridine coenzymes, specific	gland	210
protection of thiol groups of aldehyde	Photooxidation, catalysis by plant and	
dehydrogenases 655  Nucleotides, free ——, calf lens	bacterial extracts and by riboflavin-	
	5'-phosphate	115
Oestradiol, influence of injections on acid- soluble phosphate fractions of rat	Photosynthesis, periodic phenomena as	
uterus	reflected by oxygen exchange of	
, serine aldolase activity of rat uteri,	blue-green algae	434
effect of pretreatment with — 223	Plasminogen, activator from human urine	
Oestrogens, synthetic —, interfacial		
activity 507	called urokinase, isolation and properties, mechanism of activation 278,	282
Ovalbumin, surface gelation of monolayers	Poliomyelitis virus, see Virus	203
at air-water interface 174	Polysaccharides, muco —, action on	
Oviduct, hen, study of carbon dioxide	prostatic acid phosphatase	522
fixation	Potassium, diffusion in extracellular spaces	334
Ovocyte, Phascolosoma vuigare, action of	of mammalian tissues	т
different substrates and malonate on	Progesterone, influence of injections on	•
respiration 520	acid-soluble phosphate fractions of	
, exogenous and endogenous	rat uterus	T 2 7
respiration, effect of sea water 267	Protease, distribution of activities in liver	13/
Oxidative phosphorylation, ionic require-	cell fractions	451
ments, ATP-32P exchange and ATPase 440	Protein, action of monochromatic U.V. light	27
—, mechanism, role of bound DPN 155	—, biosynthesis, intermediate reactions	215
Oxyhaemoglobin, light-scattering studies	—, esterification by mustard gas and	5
of action of sodium chloride 548	related compounds	645
Parotid, salivary acid phosphomono-	—, fibrous — of nerve, dissociation .	83
esterase of human — 496	—, muco —, bovine submaxillary	•
Pentahomoserine, enzymic formation of	gland, structure of prosthetic group	649
glutamic $\gamma$ -semialdehyde from ——,	, ribonucleo, from rabbit ap-	
Neurospora crassa 648	pendix microsomes	207
Pentose phosphate esters, substituted in	—, RNA and — formation, compara-	
position 5, colour reaction 193	tive studies	450
Pepsin, crystalline, purification and N-	—, virus, combination with nucleic acid	
terminal determination 219	from different strains	540

Proteolytic activity, micro-method for	Thyroxine, relative potencies of analogues
determination 209	$in\ vivo$
Pseudomonas hydrophila, intracellular	Tobacco mosaic virus, see Virus
peptides	Transaminase, increased activity in liver
Pyridine-nucleotide coenzymes, specific	after administration of cortisone 250
protection of thiol groups of aldehyde	Transsulfation, enzymic — from a
dehydrogenases 655	phenol to carbohydrates 444
Pyrophosphate, action on ATPase activity	Tricarboxylic acid cycle, synthesis of C <sub>4</sub> -
of myosin 644	dicarboxylic acids from acetate by a
Relaxing factor, pH-dependence of con-	"glyoxylate bypass" 651
traction of muscle models, influence	Triglycerides, interactions with pancreatic
of 482	lipase 425
Riboflavin-5'-phosphate, photooxidations	Triiodothyronine, relative potencies of
catalyzed by —	analogues in vivo 213
Ribonuclease, see Nuclease	Triose phosphate dehydrogenase, muscle,
Ribonucleic acid, see Nucleic acid	reactivity of bound DPN 141
Ribonucleoprotein, see Nucleoprotein	Tropomyosin, invertebrate — 612
Ribose-5-phosphate, isomerization in	Trypsin fatty acid esters as substrates 211
human haemolysates 87	Trypsin inhibitor, crystalline, from swine
Ribotide, 6-mercaptopurine ——, enzymic	colostrum 300
formation 432	Tryptophan, auxotrophs of Escherichia coli,
L-Ribulokinase, and formation of D-xylu-	accumulation of indole-3-glycerol
lose phosphate, Lactobacillus pentosus 660	by — 429
L-Ribulose-5-phosphate-D-xylulose-5-phos-	Tumour, rats bearing —, chemical
phate stereoisomerase, role in fer-	changes in lungs 58
mentation of L-arabinose 635	Uracil desoxyriboside, methylation by
Serine aldolase, activity of rat uteri, effect	soluble enzymes of thymus 224
of pretreatment with oestradiol 223	Urocanase, mechanism of action 447
Sialic acids, quantitative estimation by	Urokinase, activator of plasminogen from
colorimetric resorcinol-hydrochloric	human urine, isolation and prop-
acid method 604	erties, mechanism of activation 278, 283
Sodium, diffusion in extracellular spaces of	Uterus, rat, effect of oestradiol pretreat-
mammalian tissues	ment on serine aldolase activity 223
Sperm, single trout —, amount of DNA 201	-, influence of adrenaline and
Starch gel, zone electrophoresis of serum	hypophyseal growth hormone on
$\beta$ -globulins 647	acid-soluble phosphate fractions 133
Steroids, A4-3-hydroxy ——, enzymic con-	,, influence of oestradiol and
version to $\Delta^4$ -3-ketones 431	progesterone injections on acid-
Submaxillary gland, bovine, structure of	soluble phosphate fractions 137
prosthetic group of mucoprotein 649	—, —, inhibition of anaerobic glyco-
Succinic dehydrogenase complex, con-	lysis by adrenaline and growth hor-
version to soluble succinic dehydro-	mone, influence of hypophysectomy 385
genase 290	Venom, rattlesnake —, separation of
—, further studies	three phosphodiesterases by chro-
N-Succinyl-L-diaminopimelic acid, inter-	matography 619
mediate in biosynthesis of diamino-	Virus, adapted MEF <sub>1</sub> poliomyelitis ——,
pimelic acid	and its soluble antigen, electro-
Sucrose, diffusion in extracellular spaces of	phoretic mobilities 600
mammalian tissues	, isolation of small infective
Sugars, coelomic plasma of Phascolosoma	particle 597
vulgare, chromatographic study 520	, reconstitution, combination of pro-
Thaw rigor, and delta state of muscle 427	tein and nucleic acid from different
Thiamine pyrophosphate, displacement	strains 540
from swollen mitochondria 564	—, tobacco mosaic —, distribution of
Thioctamide, reversible reduction cata-	thiouracil in nucleic acid of — 205
lyzed by a-ketoglutaric dehydro-	, ultraviolet absorption studies 238
genase complex	X-ray microradiography, with magnesium
Thiouracil, distribution in nucleic acid of	radiation, tissue sections 235
TMV 205	D-Xylulose phosphate, L-ribulokinase and
Thymus, methylation of uracil desoxy-	formation of ——, Lactobacillus
riboside by soluble enzymes of ———————————————————————————————————	pentosus 660
Thyroid gland, young rats, culture in vitro	points
and biosynthesis of thyroid hormones 489	
tant broaymenests or thyroid nor mones 409	