SUBJECT INDEX

Adenine nucleotides, binding and trans-		electron transport (Wilson, Chance)	
location of, in mitochondria; possible		421	, 431
role of structural protein in, (Palmieri,		Azotobacter vinelandii, reduction of vio-	
Klingenberg)	582	logen dyes and non-haem iron protein	
KLINGENBERG)		by NADH in particles from, (NAIK,	
of respiratory particles; effect of substi-		NICHOLAS)	204
tuted thiophens on, (Franklin et al.).	240	Bacillus megaterium KM, cytochrome of,	
Adenosine triphosphatase, Mg2+-depend-	•	(Broberg, Smith)	479
ent —— from chloroplasts of Euglena		Calcium ion, effect of, on activation of con-	
gracilis; purification and properties of,		tractile mechanism of insect fibrillar	
(CARELL, KAHN)	571	flight muscle (Chaplain)	385
Adenosine triphosphate, formation		Calf, — retina mitochondria, see Mito-	
coupled to photosynthetic NADP+ re-		chondria	
duction with artificial electron donors		Carbon, — assimilation; relation of O ₂	
(Trebst, Pistorius)	580	evolution to, with isolated chloroplasts	
Adenosine triphosphate, wavelength-de-	·	(WALKER, HILL)	330
pendent quantum yield of synthesis of,		Carbon dioxide, oxygen evolution from	00
in normal and dichlorodimethylphenyl-		lyophilized anacystis with, as oxidant	
urea-poisoned chloroplasts (Schwartz)	559	(Papageorgiou, Govindjee)	173
Alga, blue-green; water-soluble cyto-	555	Cardiac relaxing factor, nature of, (WEBER	, ,
chromes c from, (Holton, Myers) 362	375	et al.)	188
Algae, green -; effects of ultraviolet	070	Cattle, — heart, see Heart	
irradiation on photosynthesis and		Ceramium rubrum, phycoerythrin from;	
520 nm light-dark difference spectra in,		mercurial-induced dissociation of,	
(MANTAI, BISHOP)	350	(Pecci, Fujimori)	147
Alkali, effect of, on succinate oxidase	00	Chlorophyll radical, generated by polaro-	• • •
system (Wilson, King)	265	graphic reduction (BERG, KRAMARC-	
Alkylhydroxynaphthoquinones, effect of,	Ū	zyk)	141
on mitochondrial oxidation of tetra-		Chloroplast, — phosphorylation cata-	
methyl-p-phenylenediamine (How-		lyzed by phenazine methosulphate;	
LAND)	247	wavelength-dependent quantum yields	
2-Amino-1,1,3-tricyanopropene, as new in-	••	of, (Schwartz)	548
hibitor of oxygen evolution in photo-		Chloroplasts, conformational changes in;	٠,
synthesis (HORTON, HALL)	201	relation of electron transport and	
Anabaena variabilis, plastocyanin from;		photophosphorylation to, (Shavit,	
isolation and properties of, (LIGHT-		Avron)	516
BODY, KROGMANN)	508	Chloroplasts, of Euglena gracilis; purifi-	-
Anacystis, lyophilized; oxygen evo-		cation and properties of Mg2+-de-	
lution from, with CO ₂ as oxidant		pendent ATPase from, (CARELL, KAHN)	571
(Papageorgiou, Govindjee)	173	Chloroplasts, fractionated —; distri-	
Anacystis nidulans, low-temperature fluo-		bution of plastoquinones in, (Hen-	
rescence emission and excitation		NINGER et al.)	119
spectra for, (Bergeron, Olson)	401	Chloroplasts, isolated ——; effects of	
Ascites, Ehrlich — tumour cells; oscil-		ultraviolet irradiation on photosynthe-	
lations of nucleotides and glycolytic		sis and 520 nm light-dark difference	
intermediates in aerobic suspensions		spectra in, (Mantai, Bishop)	350
of, (Ibsen, Schiller)	405	Chloroplasts, isolated ——; oxygen evo-	
Ascites, intact — tumour cells; theoreti-		lution by, with CO ₂ as hydrogen ac-	
cal phosphorylation rates after ad-		ceptor (Cockburn et al.)	594
dition of small amount of glucose to,		Chloroplasts, isolated ——; photooxy-	
(Lee, Coe)	44 I	dation of manganese by, (McKenna,	
Atractyloside, high concentrations of;		Візнор)	339
stimulation of mitochondrial reactions		Chloroplasts, isolated $$; relation of O_2	
by, (Charles, Van den Bergh)	393	evolution to CO ₂ assimilation with,	
Azide, — inhibition of mitochondrial		(WALKER, HILL)	330

Chloroplasts, light-induced ion uptake by,	pendent ATPase from, (CARELL, KAHN)	571
in vitro; relation of swelling and photo-	Fatty acids, effect of, on rat-heart cell	
phosphorylation to, (NOBEL) 127	functions (Gerschenson et al.)	50
Chloroplasts, light-induced structural	Fatty acids, essential ——; effects of, on	
changes in; mechanisms of, (DEAMER	growth rate and fatty acid composition	
et al.) 81,97 Chloroplasts, normal and dichlorodi-	and oxidative phosphorylation respi-	
methylphenylurea-poisoned—; wave-	ratory control of, in culture (Gerschenson et al.)	42
length-dependent quantum yield of	Ferricyanide, reduction of, by succinate in	42
ATP synthesis and NADP reduction	heart-muscle preparation; potentio-	
in, (SCHWARTZ) 559	metric measurement of, (WHITTAKER,	
Chloroplasts, sonicated——; light-induced	REDFEARN)	234
rapid absorption changes in, (KE et al.) 538	Fibres, elongation of; effect of, on acti-	
Chloropseudomonas ethylicum, light-in-	vation of contractile mechanism of	
duced absorbance changes in, (Sybes-	insect fibrillar flight muscle (CHAPLAIN)	385
MA, BEUGELING) 357	Flavins, reaction of dihydrolipoic acid	
Chromatophores, Rhodospirillum rubrum	with, (Gascoigne, Radda)	498
-; flash-induced absorbance changes	Flavoproteins, effect of light on, in	
in, (Parson)	presence of α-keto acids (De Kok, Veeger)	-80
chondria (CHARLES et al.) 29	THE 1	589
Cyancytochrome c, reactivity of, (NI-	of Ca ²⁺ and fibre elongation on acti-	
CHOLLS, MOCHAN) 397	vation of contractile mechanism of,	
Cytochrome, of Bacillus megaterium KM	(Chaplain)	385
(Broberg, Smith) 479	Formaldehyde, metabolism of; oxidative	0 0
Cytochrome, — pigment P-420; recon-	phosphorylation in, (Frisell, Sor-	
version of, to P-450 by polyols and	RELL)	207
glutathione after treatment with de-	Glucose, addition of small amount of, to	
tergents or sulfhydryl reagents (Існі-	intact ascites tumour cells; theoretical	
KAWA, YAMANO) 490	phosphorylation rates after, (Lee, Coe)	44 I
Cytochrome b_2 , and cytochrome b_2 core;	Glutamate, —— oxidation in isolated rat-	
ESR of, (WATARI et al.) 592	liver mitochondria; control of gluta-	
Cytochrome c, replacement of, in digitonin fragments from beef-heart sarcosomes	mate dehydrogenase activity during,	т.
(MALVIYA, ELLIOTT) 210	(PAPA et al.)	14
Cytochromes c, water-soluble — from	rat-liver mitochondria; factors af-	
blue-green alga (Holton, Myers) 362, 375	fecting, (DE HAAN et al.)	1
Dichlorodimethylphenylurea, ——-poi-	Glutamate dehydrogenase, control of —	
soned chloroplasts; wavelength-de-	activity during glutamate oxidation in	
pendent quantum yield of ATP synthe-	isolated rat-liver mitochondria (PAPA	
sis and NADP reduction in, (SCHWARTZ) 559	et al.)	14
Digitonin, —— fragments from beef-heart	Glutathione, reconversion of detergent-	
sarcosomes; replacement of cyto-	and sulfhydryl reagent-produced P-420	
chrome c in, (MALVIYA, ELLIOTT) 210	to P-450 by, (Ichikawa, Yamano)	490
Dihydrolipoic acid, reaction of, with	Glycolate, rapid appearance of, during	
flavins (GASCOIGNE, RADDA) 498 Electron flow patterns, cyclic and non-	photosynthesis in Rhodospirillum ru- brum (Anderson, Fuller)	198
cyclic ——; relationship of, with re-	Glycolate oxidase, alternate from; purifi-	190
duced indophenols to photophospho-	cation and properties of, (Baker,	
rylation (Gromet-Elhanan) 526	Tolbert)	179
Electron-transfer complexes, microsomal	Glycolytic intermediates, oscillations of, in	, -
; preparation of, (Maclennan	aerobic suspensions of Ehrlich ascites	
et al.)	tumour cells (Ibsen, Schiller)	405
Electron transport, mitochondrial —;	Heart, beef-—— sarcosomes; replacement	
azide inhibition of, (WILSON, CHANCE)	of cytochrome c in digitonin fragments	
421, 431	from, (Malviya, Elliott)	210
Electron transport, relation of, to confor-	Heart, — mitochondria, see Mitochondria	
mational changes in chloroplasts (SHAVIT, AVRON)	Heart, rat —— cell functions; effect of	**
Electron transport, of respiratory parti-	fatty acids on, (Gerschenson et al.). Heart muscle, —— preparation; potentio-	50
cles; effect of substituted thiophens on,	metric measurement of reduction of	
(Franklin et al.) 240		
Euglena gracilis, chloroplasts of; purifi-	TAKER, REDFEARN)	234
cation and properties of Mg ²⁺ -de-	HeLa cells, effects of essential fatty acids	

on growth rate and fatty acid compo-		ditions of varying osmolarity (Atsmon,	
sition and oxidative phosphorylation		Davis)	22 I
respiratory control of, in culture (GER-		Mitochondrial respiration, inhibition of,	
SCHENSON et al.)	42	by loss of intra-mitochondrial K ⁺	
Indophenols, reduced —; relationship of		(KIMMICH, RASMUSSEN)	413
cyclic and non-cyclic electron flow		Mitochondrial respiration, inhibitory effect	
patterns with, to photophosphory-	_	of uncouplers of oxidative phosphory-	
lation (GROMET-ELHANAN)	526	lation on, (VAN DAM)	407
Insect, ——flight muscle, see Flight muscle		Nicotinamide-adenine dinucleotide, re-	
α-Keto acids, effect of light on flavo-		duced —; reduction of viologen dyes	
proteins in presence of, (DE Kok,	. 0	and non-haem protein by, in particles	
VEEGER)	589	from Azotobacter vinelandii (NAIK,	
Laurylamine, effects of, on respiration and		Nicholas)	204
related reactions of liver mitochondria		Nicotinamide-adenine dinucleotide phos-	
in vitro (LEES)	310	phate, photosynthetic oxidized —;	
Liver, — mitochondria, see Mitochondria		ATP formation coupled to reduction	
Liver, rat-—— mitochondria, see Mito-		of, with artificial electron donors	0
chondria		(Trebst, Pistorius)	580
Manganese, photooxidation of, by isolated	220	Nicotinamide—adenine dinucleotide phos-	
chloroplasts (McKenna, Bishop)	339	phate, reduction of, in normal and	
Mercurial, ——induced dissociation of		dichlorodimethylphenylurea - poisoned	
phycoerythrin from Ceramium rubrum	T	chloroplasts; wavelength-dependent	
(Pecci, Fujimori)	147	quantum yield of, (Schwartz)	559
Microsomes, electron-transfer complexes	50	Nuclei, isolated from rat thymus; oxida-	
of; preparation of, (MACLENNAN et al.) Mitochondria, binding and translocation	59	tive phosphorylation in, (Betel,	
9		KLOWEN)	453
of adenine nucleotides in; possible role of structural protein in, (Palmieri,		Nucleotides, oscillations of, in aerobic sus- pensions of Ehrlich ascites tumour cells	
	582	(IBSEN, SCHILLER)	40.5
KLINGENBERG)	302	Oxygen, —— evolution by isolated chloro-	405
of respiratory substrates in, (Papa		plasts with CO ₂ as hydrogen acceptor	
et al.)	288	(Cockburn et al.)	504
Mitochondria, electron transport by; azide	200	Oxygen, — evolution from lyophilized	594
inhibition of, (Wilson, Chance). 421	43 T	anacystis with CO ₂ as oxidant (PAPA-	
Mitochondria, isolated heart ——; vari-	43.	GEORGIOU, GOVINDJEE)	172
ation in endogenous substrates and		Oxygen, —— evolution in photosynthesis;	*/3
pyruvate metabolism in, (BAUER,		2-amino-1,1,3-tricyanopropene as new	
Von Korff)	280	inhibitor of, (HORTON, HALL)	201
Mitochondria, isolated rat-liver; con-		Oxygen, — evolution; relation of, to	
trol of glutamate dehydrogenase ac-		CO ₂ assimilation with isolated chloro-	
tivity during glutamate oxidation in,		plasts (Walker, Hill)	330
(Papa et al.)	14	Phenazine methosulphate, wavelength-	5.0
Mitochon ria, liver; effect of lauryl-	-	dependent quantum yields of chloro-	
amine on respiration and related re-		plast phosphorylation catalyzed by,	
actions of, in vitro (LEES)	310	(Schwartz)	548
Mitochondria, liver ——; metabolism-		Phosphorylation, chloroplast —— cata-	- •
independent swelling coupled to ion		lyzed by phenazine methosulphate;	
movement in, (Azzı, Azzone)	468	wavelength-dependent quantum yields	
Mitochondria, metabolism of; site-specific		of, (Schwartz)	548
effects of steroids on, (VALLEJOS,		Phosphorylation, oxidative — -; effect of	
Stoppani)	295	sodium e hacrynate on reactions in-	
Stoppani)		volved in mechanism of, (GAUDEMAR,	
synthesis in, (Charles et al.)	29	FOUCHER)	255
Mitochondria, rat-liver; factors af-		Phosphorylation, oxidative —— of HeLa	
fecting pathway of glutamate oxi-		cells in culture; effects of essential	
dation in, (DE HAAN et al.)	1	fatty acids on, (Gerschenson et al.) .	42
Mitochondria, reactions of; stimulation of,		Phosphorylation, oxidative; inhi-	
by high concentrations of atractyloside		bitory effect of uncouplers of, on mito-	
(CHARLES, VAN DEN BERGH)	393		407
Mitochondrial oxidation, of tetramethyl-		Phosphorylation, oxidative —— in me-	
p-phenylenediamine; effect of alkyl- hydroxynaphthoquinones on, (How-		tabolism of sarcosine and formaldehyde	20-
LAND)	247	(Frisell, Sorrell)	207
Mitochondrial respiration, under con-	-4/	from rat thymus (Betel, Klowen)	452
		(DDINE, ALLOWER)	ナノン

Phosphorylation, oxidative —; target size of components in, (Kagawa)	586	Respiratory particles, electron transport and ATPase activities of; effect of	
Phosphorylation, theoretical —— rates after addition of small amount of	3 * -	substituted thiophens on, (Franklin et al.)	240
glucose to intact ascites tumour cells	447	Respiratory substrates, utilization of, in calf-retina mitochondria (PAPA et al.).	288
(Lee, Coe)	441	Reticulum, fragmented sarcoplasmic——;	200
coupling of, (Alcaide, Municio)	195	effect of soluble proteins on, (Seidel)	213
Photophosphorylation, relation of, to conformational changes in chloroplasts		Retina, — mitochondria, see Mito- chondria	
(Shavit, Avron)	516	Rhodopseudomonas palustris, reductases	
Photophosphorylation, relation of swelling		and non-iron protein from, (Yamana-	
and, to light-induced ion uptake by		KA, KAMEN)	317
chloroplasts in vitro (NOBEL)	127	Rhodospirillum rubrum, —— chromato-	
Photophosphorylation, relationship of		phores; flash-induced absorbance	
cyclic and non-cyclic electron flow		changes in, (Parson)	154
patterns with reduced indophenols to,	_	Rhodospirillum rubrum, photosynthesis in;	
(Gromet-Elhanan)	526	rapid appearance of glycolate during,	- 0
Phycoerythrin, from Ceramium rubrum;		(Anderson, Fuller)	198
mercurial-induced dissociation of,		Rhodospirillum rubrum, redox reactions of	
(Pecci, Fujimori)	147	ubiquinone in, (REDFEARN)	218
Plastocyanin, from Anabaena variabilis;		Sarcoplasm, fragmented reticulum from;	
isolation and properties of, (Light-	m = 0	effect of soluble proteins on, (SEIDEL)	213
BODY, KROGMANN)	508	Sarcosine, metabolism of; oxidative phos-	207
Plastoquinones, distribution of, in frac- tionated chloroplasts (Henninger		phorylation in, (Frisell, Sorrell). Sarcosomes, beef-heart ——; replacement	207
et al.)	119	of cytochrome c in digitonin fragments	
Polyols, reconversion of detergent- and	119	from, (MALVIYA, ELLIOTT)	210
sulfhydryl reagent-produced P-420 to		Sodium ethacrynate, effect of, on reactions	
P-450 by, (Ichikawa, Yamano)	490	involved in mechanism of oxidative	
Potassium ion, intra-mitochondrial —;	490	phosphorylation (Gaudemar, Fou-	
inhibition of mitochondrial respiration		CHER)	255
by loss of, (Kimmich, Rasmussen)	413	Steroids, site-specific effects of, on mito-	- 55
Protein, non-haem iron; reduction of,	, ,	chondrial metabolism (Vallejos,	
by NADH in particles from Azotobacter		STOPPANI)	295
vinelandii (NAIK, NICHOLAS)	204	Succinate, reduction of ferricyanide by, in	
Protein, non-haem iron — of Rhodo-	•	heart-muscle preparation; potentio-	
pseudomonas palustris (Yamanaka,		metric measurement of, (Whittaker,	
KAMEN)	317	Redfearn)	234
Protein, structural ——; possible role of,		Succinate oxidase, —— system; effect of	
in binding and translocation of adenine		alkali on, (Wilson, King)	265
nucleotides in mitochondria (PALMIERI,	_	Tetramethyl-p-phenylenediamine, mito-	
KLINGENBERG)	582	chondrial oxidation of; effect of alkyl-	
Proteins, soluble —; effect of, on frag-		hydroxynaphthoquinones on, (How-	
mented sarcoplasmic reticulum (SEI-		LAND)	247
DEL)	213	Thiophens, substituted —; effect of, on	
Pyruvate, — metabolism; variations in,		electron transport and ATPase activi-	
in isolated heart mitochondria (BAUER,	280	ties of respiratory particles (FRANKLIN	240
Von Korff)	200	et al.)	240
Rat, —— heart, see Heart Rat, ——-liver mitochondria, see Mito-		lation in nuclei from, (Betel, Klowen)	452
chondria		Tumour, see Ascites	453
Rat, —— thymus, see Thymus		Ubiquinone, redox reactions of, in <i>Rhodo</i> -	
Reductases, of Rhodopseudomonas palustris		spirillum rubrum (REDFEARN)	218
(YAMANAKA, KAMEN)	317	Viologen dyes, reduction of, by NADH in	
Respiratory control, of HeLa cells in cul-	J-1	particles from Azotobacter vinelandii	
ture; effects of essential fatty acids on,		(Naik, Nicholas)	204
(Gerschenson et al.)	42		•