

Contents

Contents of Number 1/2

Original Communications

- Antibiotics from Basidiomycetes. XV[1]. 1-Hydroxy-2-nonyl-4-one, an Antifungal and Cytotoxic Metabolite from *Ischnoderma benzoinum* (Wahl.) Karst. (In German)
T. ANKE, B.-M. GIANNETTI, and W. STEGLICH 1
- Vinyl-Olefines and Sesquiterpenes in the Root-Oil of *Senecio isatideus*
W. BOLAND, L. JAENICKE, and A. BRAUNER 5
- Carotenoid Composition of Chlorophyll-Carotenoid-Proteins from Radish Chloroplasts
H. K. LICHTENTHALER, U. PRENZEL, and G. KUHN 10
- Carotenoid Biogenesis in the Stick Insect, *Carausius morosus*, during a Larval Instar
H. KAYSER 13
- Hydroxylation of the B-Ring of Flavonoids in the 3'- and 5'-Position with Enzyme Extracts from Flowers of *Verbena hybrida*
G. STOTZ and G. FORKMANN 19
- Dissociation of FAD from The NAD(P)H-Nitrate Reductase Complex from *Ankistrodesmus braunii* and Role of Flavin in Catalysis
M. A. DE LA ROSA, A. J. MÁRQUEZ, and J. M. VEGA 24
- Spectrophotometric Isolation of Kinetically Different Pools of P-700 and Their Correlation to the Reduction of NADP by Isolated Chloroplasts. I. The Effect of Light Quality and Intensity
H. J. RURAINSKI, R. GERHARDT, and G. MADER 31
- Chemical Aspects of the Mutagenic Activity of the Ascorbic Acid Autoxidation System
W. H. KALUS, W. G. FILBY, and R. MÜNZNER 40
- Mevinolin: A Highly Specific Inhibitor of Microsomal 3-Hydroxy-3-methylglutaryl-Coenzyme A Reductase of Radish Plants
T. J. BACH and H. K. LICHTENTHALER 46
- Free Activation Energies and Activation Volumes for the Amide Rotation in Some Peptides Studied by High Pressure ^1H -High Resolution NMR
H. HAUER, H.-D. LÜDEMANN, and R. JAENICKE 51
- Investigation of Large Intramolecular Movements within Metmyoglobin by Rayleigh Scattering of Mössbauer Radiation (RSMR)
Y. F. KRUPYANSKII, F. PARAK, V. I. GOLDANSKII, R. L. MÖSSBAUER, E. E. GAUBMAN, H. ENGELMANN, and I. P. SUZDALEV 57
- On the Free Radical-Induced Aggregation of Ribonuclease — A Pulse Radiolysis Study Using the Light Scattering Detection Method
H. SEKI and W. SCHNABEL 63
- Dark Oxidation of Unsaturated Lipids by the Photoxidized 8-Methoxypsoralen
A. YA. POTAPENKO, M. V. MOSHNIN, A. A. KRASNOVSKY JR., and V. L. SUKHORUKOV 70
- Growth Specific Thylakoid Differentiation of the Endocyanelle *Cyanocyta korschikoffiana* in the Symbiotic Association with *Cyanophora paradoxa* (In German)
P. BRANDT, S. MARTEN, B. MÜLLER, and W. WIESSNER 75
- Differential Fluorescence and Kinetic Studies on the Template-Binding of RNA Polymerase from Parsley and *Escherichia coli*
K. GROSSMANN, H. BISSWANGER, and H. U. SEITZ 81
- Sensitivity of *Escherichia coli* to Viral Nucleic Acid. XVI. Temperature Conditions for Ca^{2+} Dependent DNA Uptake in *Escherichia coli*
A. TAKETO 87
- Studies on $^{18}\text{O}_2$ -Uptake in the Light by Entire Plants of Different Tobacco Mutants
R. ISHII and G. H. SCHMID 93
- Immobilization of Yeast Cells by Radiation-Induced Polymerization
T. FUJIMURA and I. KAETSU 102



<i>Nanochlorum eucaryotum</i> : a Very Reduced Coccoid Species of Marine Chlorophyceae C. WILHELM, G. EISENBEIS, A. WILD, and R. ZAHN	A New Catechin Glycoside from <i>Polypodium vulgare</i> (In German) C. KARL, G. MÜLLER, and P. A. PEDERSEN
107	148
Growth and Photosynthesis of <i>Nanochlorum eucaryotum</i> , a New and Extremely Small Eucaryotic Green Alga C. WILHELM and A. WILD	On the Essential Oil Components from Blossoms of <i>Artemisia vulgaris</i> L. (In German) K. MICHAELIS, O. VOSTROWSKY, H. PAULINI, R. ZINTL, and K. KNOBLOCH
115	152
Kinetics of Proton-Hydroxyl Transport across Lecithin Vesicle Membranes as Measured with a Lipoid pH-Indicator W. G. POHL	Phenazine and Phenoxazinone Biosynthesis in <i>Brevibacterium iodinum</i> R. B. HERBERT, J. MANN, and A. RÖMER
120	159
Notes	Separation, Partial Purification and Characterization of a Fatty Acid Hydroperoxide Cleaving Enzyme from Apple and Tomato Fruits P. SCHREIER and G. LORENZ
¹ H-NMR- and ESR-Investigations on the Structures of Dehydroascorbic Acid and the Semidehydroascorbate Radical (In German) H. SAPPER, A. PLEYER-WEBER, and W. LOHMANN	165
129	The Site of Indole-3-acetic Acid Synthesis in Mesophyll Cells of <i>Spinacia oleracea</i> B. HEILMANN, W. HARTUNG, and H. GIMMLER
Hydroxyrutacridone Epoxide, a New Acridone Alkaloid from <i>Ruta graveolens</i> (In German) U. EILERT, B. WOLTERS, A. NAHRSTEDT, and V. WRAY	174
132	Rubins and Rubinoid Addition Products from Phycoerythrin W. KUFER and H. SCHEER
Flavonol 3-O-Methyltransferase in Plant Tissues V. DE LUCA, G. BRUNET, H. KHOURI, R. IBRAHIM, and G. HRAZDINA	179
134	Isolation of a <i>b</i> -Type Cytochrome Oxidase from Membranes of the Phototrophic Bacterium <i>Rhodospseudomonas capsulata</i> H. HÜDIG and G. DREWS
Enzymatic Hydroxylation of Ruthenocen and Osmocene (In German) M. SCHNEIDER, M. WENZEL, and G. SCHACHSCHNEIDER	193
136	Tetrapyrrol Derivatives Shown by Fluorescence Emission and Excitation Spectroscopy in Cells of <i>Rhodospseudomonas capsulata</i> Adapting to Phototrophic Conditions J. BECK and G. DREWS
Neutral Red Fluorescence of Chromatin: Specificity and Binding Mechanism R. H. ESPELOSIN and J. C. STOCKERT	199
139	Formation of Hydrocarbons by Photobleaching Cyanobacterium, <i>Anacystis nidulans</i> G. SCHMETTERER
Proteinase-Inhibitors in Albumin Glands of <i>Achatina fulica</i> R. O. OKOTORE and G. UHLENBRUCK	205
142	Peptidoglycan and Protein, the Major Cell Wall Constituents of the Obligate Halophilic Bacterium <i>Rhodospirillum salexigens</i> M. H. TADROS, G. DREWS, and D. EVERS
Erratum	210
144	CO ₂ Fixation in <i>Anabaena cylindrica</i> G. DÖHLER
Contents of Number 3/4	213
Original Communications	On the Occurrence of Monoacylglycerol Derivatives in Lipid Metabolism of Chloroplasts A. SAUER and K.-P. HEISE
Structure Elucidation of Pterosupin from <i>Pterocarpus marsupium</i> , the First Naturally Occurring C-Glycosyl- β -hydroxy-dihydrochalcone D. ADINARAYANA, K. V. SYAMASUNDAR, O. SELIGMANN, and H. WAGNER	218
145	

Possible Models of Murein and Their Fourier Transforms H. FORMANEK	226	The Influence of Detergents on the Ca^{2+} - and Mg^{2+} -Dependent Adenosine Triphosphatase of the Sarcoplasmic Reticulum H. LÜDI, B. RAUCH, and W. HASSELBACH	299
Binding of Antibodies onto the Thylakoid Membrane. VII. Localization of Coupling Factor of Photophosphorylation in the Lamellar System of Chloroplasts from <i>Antirrhinum majus</i> A. RADUNZ and R. MEIER	236	Inhibition of Acetyl CoA Carboxylase by a High Molecular Weight Protein in Rat Liver M. N. ABDEL-HALIM and S. Y. K. YOUSUFZAI	308
Photophosphorylation by Chloroplasts: Effects of Low Concentrations of Ammonia and Methylamine C. GIERSCH	242	Subcellular Fractionation of Bone Marrow-Derived Macrophages: Localization of Phospholipase A_1 and A_2 and Acyl-CoA:1-Acylglycero-3-phosphorylcholine-0-acyltransferase E. E. KRÖNER, H. FISCHER, and E. FERBER	314
Digitonin Precipitable Sterols Inducing the Aggregation of Prolamellar Body-Like Structures from Completely Dissolved PLB Components A. NISIUS, M. MÜLLER, and H. G. RUPPEL	251	Periodicities of Dinucleotide Self-Information Values in ΦX174 DNA N. B. FURLONG and C. F. BECKNER	321
Isolation of PS II-Particels with <i>in vivo</i> Characteristics from <i>Euglena gracilis</i> , Stamm Z (In German) F. SCHULER, P. BRANDT and W. WIESSNER	256	Growth Characteristics of <i>in vitro</i> Cultured Ehrlich Ascites Tumor Cells under Anaerobic Conditions and after Rearation R. MERZ and F. SCHNEIDER	326
Absorption and Picosecond Fluorescence Characteristics of Chlorophyll Vesicles as a Function of Temperature S. S. BRODY	260		
Herbicides which Inhibit Electron Transport or Produce Chlorosis and Their Effect on Chloroplast Development in Radish Seedlings. I. Chlorophyll a Fluorescence Transients and Photosystem II Activity K. H. GRUMBACH	268	Notes	
Use of Isolated Leaf Cells of <i>Abutilon theophrasti</i> to Localize the Action of Two Aminotriazinone Herbicidal Derivatives K. K. HATZIOS	276	3-O-Methyl, 8-C-methyl Quercetin a New Flavonoid from <i>Dasyllirion acrotrichum</i> and <i>Xanthorrhoea hastilis</i> , Liliales (In German) C. LARACINE, J. FAVRE-BONVIN, and P. LEBRETON	335
Structure Investigations of Agonists of the Natural Neurotransmitter Acetylcholine II [1]. X-ray Structure Analysis of Trimethyl(4-oxopentyl)-ammonium-chloride A. GIEREN and M. KOKKINIDIS	282	New Flavonoids from the Farina of <i>Pityrogramma</i> Species C. HITZ, K. MANN, and E. WOLLENWEBER	337
Bile Salt Delipidation, Residual Phospholipids and Reactivation of the Ca^{2+} -ATPase from Sarcoplasmic Reticulum G. SWOBODA and W. HASSELBACH	289	Actinioerythrin in <i>Mullus barbatus</i> L. (Pisces; Teleostei; Mullidae) (In German) F.-C. CZYGAN and A. KRÜGER	340
		The Importance of the Position of the Adenosine Linkage in NAD^+ for Its Coenzyme Activity <i>via</i> Lactate Dehydrogenase (In German) E. SCHLIMME, R. MATTERN, and E. SCHOTT	342
		Characterization of the Nuclear Lamina in an Insect by Differential Staining R. MARX	345

Trail Orientation of Wood Ants (<i>Formica polyctena</i> Förster) (In German) K. HORSTMANN	348	Proton NMR-Relaxation Dispersion in Meconium Solutions and Healthy Amniotic Fluid: Possible Applications to Medical Diagnosis G. J. BÉNÉ, B. BORCARD, V. GRAF, E. HILTBRAND, P. MAGNIN, and F. NOACK	493
Erratum	350		
Contents of Number 5/6			
<i>Original Communications</i>			
Structure of Echinacoside (In German) H. BECKER, W. CH. HSIEH, R. WYLDE, C. LAFFITE, and C. ANDARY	351	Monospecific Antibody against 5-Methyl-Cytidine for the Structural Analysis of Nucleic Acids S. K. MASTRONICOLIS, V. M. KAPOULAS, and H. KRÖGER	399
Synthesis of Naturally Occurring Prenylated Naphthalene Derivates. Isolation of a New Prenyl-naphthoquinone from <i>Galium mollugo</i> (In German) L. HEIDE and E. LEISTNER	354	On the Oxidative Main-Chain Scission of Nucleic Acids — Pulse Radiolysis Studies (In German) O. DENK and W. SCHNABEL	405
Biosynthesis of Isoflavonoid Phytoalexins: Incorporation of Sodium [1,2- ¹³ C ₂]Acetate into Phaseollin and Kievitone P. M. DEWICK, M. J. STEELE, R. A. DIXON, and I. M. WHITEHEAD	363	Binding Constants, Binding Enthalpies and Entropies of the Non-Competitive and the Competitive Binding of Acriflavine, Tetramethylacriflavine and Acridine Orange to DNA (In German) H. WILLE, J. PAULUHN, and H. W. ZIMMERMANN	413
Diurnal Fluctuation of Quinolizidine Alkaloid Accumulation in Legume Plants and Photomixotrophic Cell Suspension Cultures M. WINK and T. HARTMANN	369	Possible Orientation of the Fatty Acid Chains in Lipopolysaccharide H. FORMANEK	428
Volatile Compounds from Cephalic Secretions of Females in two Cleptoparasite Bee Genera, <i>Epeolus</i> (Hym., Anthophoridae) and <i>Coelioxys</i> (Hym., Megachilidae) J. TENGÖ, G. BERGSTRÖM, A.-K. BORG-KARLSON, I. GROTH, and W. FRANCKE	376	Screening for Highly Active Plasmid Promoters via Fusion to β -Galactosidase Gene A. ROSNER, M. GORECKI, and H. AVIV	441
Purification and Properties of Glucosaminephosphate Isomerase of <i>Proteus mirabilis</i> B. CIFUENTES and C. VICENTE	381	Anomalous Reduction of Cytochrome <i>b</i> in Highly Purified Complex III from Baker's Yeast F. F. DE LA ROSA and G. PALMER	445
Effects of Trypan Blue and Related Compounds on Production and Activity of Streptolysin S Y. TAKETO and A. TAKETO	385	Changes in the Fluorescence Emission Spectrum of <i>Chlorella emersonii</i> Induced by Cold Treatment; a Possible Regulative Feature of Energy Uptake G. HARNISCHFEGER and H. JARRY	448
Antiviral Activity of 2-(α -Hydroxybenzyl)-benzimidazole and other 2-Substituted Benzimidazoles against TMV in Tomato Leaf Discs A. C. CASSELLS and F. M. COCKER	390	Studies of Photosynthesis Inhibition by Phytoluminography R. BLAICH, O. BACHMANN, and I. BAUMBERGER	452
		A Study of State Changes in <i>Chlorella</i> : The Effect of Uncoupler and Energy Transfer Inhibitors P. V. SANE, D. FURTADO, T. S. DESAI, and V. G. TATAKE	458
		Adaptation of Chloroplast-Ultrastructure and of Chlorophyll-Protein Levels to High-Light and Low-Light Growth Conditions H. K. LICHTENTHALER, G. KUHN, U. PRENZEL, C. BUSCHMANN, and D. MEIER	464

Protochlorophyllide Photoconversion Initiates the Transformation of Reaggregated Prolamellar Body Tubules <i>in vitro</i> M. MÜLLER and A. NISIUS	476	Hyperglycemia in the Fresh Water Field Crab (<i>Oziotelphusa senex senex</i>) Produced by a Pesticide (BHC) P. SREENIVASULA REDDY, S. B. RAMESH BABU, and R. RAMAMURTHI	545
The Sarcoplasmic Reticulum of Smooth Muscle Fibers L. RAEYMAEKERS	481	Coenzyme Binding at Different Ionization States of Cytoplasmic and Mitochondrial Malate Dehydrogenase K. SCHWERDTFEGER, C. WOENCKHAUS, D. M. PARKER, and J. J. HOLBROOK	547
Histochemical Demonstration of an ATP-Dependent Ca^{2+} -Pump in Bullfrog Myocardial Cells R. MEYER, W. STOCKEM, M. SCHMITZ, and H. G. HAAS	489	A New Method to Prepare Membrane Fractions Containing Ionophore-Stimulated ATPase from Pumpkin Hypocotyls (<i>Cucurbita maxima</i> , L.) G. F. E. SCHERER	550
Ca Entry and Contraction as Studied in Isolated Bovine Ventricular Myocytes G. ISENBERG	502		
Fluorescence Energy Transfer between ATPase Monomers in Sarcoplasmic Reticulum Reconstituted Vesicles, in the Presence of Low Concentrations of a Nonionic Detergent P. CHAMPEIL, J.-L. RIGAUD, and M. P. GINGOLD	513		
Functional Significance of Quaternary Organization of the Sarcoplasmic Reticulum Ca^{2+} -ATPase J. V. MÖLLER, T. S. MAHROUS, J. P. ANDERSEN, and M. LE MAIRE	517		
Equilibrium Constants for Some Steps of the Reaction Cycle of the Sarcoplasmic Reticulum Calcium Pump C. TANFORD and D. W. MARTIN	522		
Phosphorylation of Ca^{2+} -ATPase by Inorganic Phosphate in Water-Organic Solvent Media: Dielectric Constant and Solvent Hydrophobicity Contribution A. DE SOUZA OTERO and L. DE MEIS	527		
ATPases of the Cat Carotid Body and of the Neighbouring Ganglia H. STARLINGER	532		
Notes			
Synthesis of 6-Chlorogenistein A. LÉVAI and A. L. TÖKÉS	540		
Effect of Penicillins on the Level of Inorganic Pyrophosphatase in <i>Escherichia coli</i> K 12 E. I. KUKKO and J. K. HEINONEN	542		
		Contents of Number 7/8	
		Original Communications	
		ESR Studies on Platinum Uracil Blue H. NEUBACHER, M. SEUL, and W. LOHMANN	553
		Roseanolone: A New Diterpene from <i>Hypoestes rosea</i> J. I. OKOGUN, A. A. ADESOMOJU, G. A. ADESIDA, H. J. LINDNER, and G. HABERMEHL	558
		6-C- α -L-Rhamnopyranosylapigenin 7-O- β -D-glucopyranoside (Isosofurcatain 7-O- β -D-glucoside), a New Flavone Glycoside from <i>Metzgeria furcata</i> K. R. MARKHAM, R. THEODOR, R. MUES, and H. D. ZINSMEISTER	562
		On the Essential Oil Components from <i>Humulus lupulus</i> L. var. <i>neomexicanus</i> Nels. & Cockerell. I. Contribution K. KNOBLOCH, H. PAULINI, C. ELEY, J. H. ELEY, E. ZIEGLER, H. BRANDAUER, K. MICHAELIS, and O. VOSTROWSKY	565
		Demethylation, Methylation and 3'-Hydroxylation of Isoflavones by <i>Fusarium</i> Fungi K.-M. WELTRING, K. MACKENBROCK, and W. BARZ	570
		Accumulation of Acridone-Epoxides in Callus Cultures of <i>Ruta graveolens</i> Increased by Coculture with Not Host-Specific Fungi (In German) B. WOLTERS and U. EILERT	575

Precursors of Cyclic Polysulphides in Seeds of <i>Parikia speciosa</i> Hassk. (In German)		Sodium-Potassium Movement and the Regulation of Cardiac Muscle Activity	
R. SUSILO and R. GMELIN	584	J. DAUT and R. RÜDEL	679
Formation of Flavonol 3-O-Diglycosides and Flavonol 3-O-Triglycosides by Enzyme Extracts from Anthers of <i>Tulipa</i> cv. Apeldoorn		Regulation of the Sarcoplasmic Reticular Ca^{2+} Transport ATPase by Phosphorylation and Dephosphorylation	
G. KLEINEHOLLENHORST, H. BEHRENS, G. PEGELS, N. SRUNK, and R. WIERMANN	587	L. M. G. HEILMEYER, Jr. and M. VARSANYI	682
Polynucleotide Phosphorylase from a Cyanobacterium (<i>Synechococcus</i> sp.): Subunit Composition and Properties		Equilibrium and Kinetic Studies of Calcium Transport and ATPase Activity in Sarcoplasmic Reticulum	
W.-T. NOLDEN and G. RICHTER	600	G. INESI, M. KURZMACK, D. KOSK-KOSICKA, D. LEWIS, H. SCOFANO, and H. GUIMARAES-MOTTA	685
DEAE-Dextran Induced Increase of Membrane Permeability and Inhibition of Photosynthesis in <i>Dunaliella parva</i>		Comparative Studies on the ATP-Binding Sites in Ca^{2+} -ATPase and $(\text{Na}^+ + \text{K}^+)\text{-ATPase}$ by the Use of ATP-Analogues	
H. GIMMLER and G. LOTTER	609	W. SCHONER, E. H. SERPERSU, H. PAULS, R. PATZELT-WENCZLER, H. KREICKMANN, and G. REMPELTERS	692
High- and Low-Affinity Binding of Photosystem II Herbicides to Isolated Thylakoid Membranes and Intact Algal Cells		Electromechanical Coupling I. Introduction	
H. LAASCH, K. PFISTER, and W. URBACH	620	H. CH. LÜTTGAU	706
Herbicides which Inhibit Electron Transport or Produce Chlorosis and Their Effect on Chloroplast Development in Radish Seedlings. II. Pigment Excitation, Chlorophyll Fluorescence and Pigment-Protein Complexes		Electromechanical Coupling II. The Effect of Perchlorate Upon Excitation-Contraction Coupling in Frog Skeletal Muscle Fibres	
C. BUSCHMANN and K. H. GRUMBACH	632	M. GOMOLLA, G. GOTTSCHALK, and H.-CH. LÜTTGAU	707
Herbicides which Inhibit Electron Transport or Produce Chlorosis and Their Effect on Chloroplast Development in Radish Seedlings. III. Plastid Pigment and Quinone Composition		Electromechanical Coupling III. Estimation of the Ca Storage Capacity of the SR by Analysing the Time Course of Caffeine-Induced Tension Transients of Skinned Muscle Fibres	
K. H. GRUMBACH	642	R. THIELECZEK	709
Effects of Substituted 2-Phenylamino-1,4,5,6-tetrahydropyrimidines on ATP Formation in Isolated Spinach Chloroplasts		Intracellular Membranes as Boundaries for Ionic Distribution. <i>In Situ</i> Elemental Distribution in Guinea Pig Heart Muscle in Different Defined Electro-Mechanical Coupling States	
G. VAN DEN BERG, M. BRANDSE, and J. TIPKER	651	M. F. WENDT-GALLITELLI, R. JACOB, and H. WOLBURG	712
A Cyanobacterial ATPase Distinct from the Coupling Factor of Photophosphorylation		Notes	
W. LOCKAU and S. PFEFFER	658	New Flavonol Acetates from the Frond Exudate of the Fern <i>Notholaena aschenborniana</i>	
The Anatomy of the Sarcoplasmic Reticulum in Vertebrate Skeletal Muscle: Its Implications for Excitation Contraction Coupling		M. JAY, M.-R. VIRICEL, J. FAVRE-BONVIN, B. VOIRIN, and E. WOLLENWEBER	721
J. R. SOMMER, M. D.	665		

Isolation and Identification of Lathycarpin, a New Pterocarpin Phytoalexin from <i>Lathyrus sativus</i> J. L. INGHAM and K. R. MARKHAM	724	Synthesis of Galloyl-Coenzyme A Thioester G. G. GROSS	778
Irregularities in the Circular Dichroism of Oligo-ribonucleotides W. ZACHARIAS and H. FOLLMANN	727	Nitrite Inhibition of Bacterial Dinitrogen Fixation F. CASTILLO and J. CÁRDENAS	784
Adult T-Cell Leukemia-Associated Antigen (ATLA): Detection of a Glycoprotein in Cell- and Virus-Free Supernatant N. YAMAMOTO, J. SCHNEIDER, Y. HINUMA, and G. HUNSMANN	731	Energy Transfer Inhibition Induced by Nitrofen B. HUCHZERMEYER	787
Contents of Number 9		Natural Inhibitors of Germination and Growth, I. Development of a Quantitative Biotest and Application upon Extracts from Husks of <i>Avena sativa</i> L. (In German) R. KARL and W. RÜDIGER	793
Original Communications		Natural Inhibitors of Germination and Growth II. Isolation and Structure of Inhibitors from <i>Avena sativa</i> L. (In German) E. LOHAUS, I. BLOS, W. SCHÄFER, and W. RÜDIGER	802
Nonlinear Polarisationoscillations in a Biophysical Model. System II: External Dynamics Z. SZABO and F. KAISER	733	5-Methyleytosine Content in Erythroleucemic Cells of Rats after Induction with Dimethylsulfoxid (In German) R. BAUR, N. KLUGE, H. KRÖGER, and H. WOHLERT	812
The Phytochemistry of South American <i>Nephroma</i> -Species (In German) B. RENNER, A. HENSSEN, and E. GERSTNER	739	Catabolic Properties of 5',5''-Linked Dinucleoside-phosphates in Rat Liver Nuclei (In German) S. BORNEMANN and E. SCHLIMME	818
Detection of Glyceollin on the Cellular Level in Infected Soybean by Laser Microprobe Mass Analysis P. MOESTA, U. SEYDEL, B. LINDNER, and H. GRISEBACH	748	The Interaction of Calf Thymus DNA with Mercuric Acetate and 3,6-Bis-(acetatomercurimethyl)-dioxane. Small-Angle X-Ray Scattering and Viscosity Studies P. ZIPPER, G. RIBITSCH, J. SCHURZ, and H. BÜNEMANN	824
Oxygen-Isotope Effect in Enzymatic Cleavage Reaction of 13-L-Hydroperoxylinoleic Acid to Hexanal and 11-Formyl- <i>cis</i> -9-undecenoic Acid A. HATANAKA, T. KAJIWARA, J. SEKIYA, and T. FUKUMOTO	752	Growth Characteristics of Anaerobically Treated Ehrlich Ascites Tumor Cells after Reaeration as Studied by Combination of Flow Cytometry and Centrifugal Elutriation R. MERZ and F. SCHNEIDER	833
On the Biosynthesis of C ₃₀ Carotenoic Acid Glucosyl Esters in <i>Pseudomonas rhodos</i> . Analysis of <i>car</i> -Mutants H. KLEINIG and R. SCHMITT	758	Inverse Relationships between Ecdysteroid Titres and Total Body Metabolism in Insects K. SLÁMA	839
Biosynthesis of Photosynthates and Taxonomy of Algae B. P. KREMER and G. O. KIRST	761	Notes	
Specific Localization of β -D-Glucoside Conjugates of 2,4-Dichlorophenoxyacetic Acid in Soybean Vacuoles R. SCHMITT and H. SANDERMANN, Jr.	772	Yeast Aminopeptidase II: Rapid Purification Using Affinity Chromatography of the Periplasmic Enzyme J. KNÜVER and K.-H. RÖHM	845

Contents of Number 10

Original Communications

- On the Biogenesis of Aroma Compounds in Plants and Fruits, XVII. Anabolic Properties of Strawberry Fruit Tissue for the Biosynthesis of Aroma Compounds (In German)
F. DRAWERT and R. G. BERGER 849

- Indole Alkaloids from Cell Suspension Cultures of *Stemmadenia tomentosa* and *Voacanga africana*
J. STÖCKIGT, K.-H. PAWELKA, A. ROTHER, and B. DEUS 857

- Degradation of the Isoflavone Biochanin A by *Fusarium javanicum*
U. WILLEKE and W. BARZ 861

- Changes of C-Phycocyanin in *Synechococcus* 6301 in Relation to Growth on various Sulfur Compounds
A. SCHMIDT, I. ERDLE, and H.-P. KÖST 870

- State of Iron in the Archaeobacterium *Methanosarcina barkeri* Grown on Different Carbon Sources as Studied by Mössbauer Spectroscopy
P. SCHERER and CH. SAUER 877

- Effect of Aging on the Fluorescence Lifetime of Chloroplasts
S. S. BRODY 881

- On the Role of Hydrogen Peroxide in Peroxidase Catalyzed Metabolism of Indole-3-acetic Acid
H. J. GRAMBOW 884

- Distribution and Effects of Bentazon in Crop Plants and Weeds
H. K. LICHTENTHALER, D. MEIER, G. RETZLAFF, and R. HAMM 889

- Mechanism of Bleaching in Leaves Treated with Chlorosis-Inducing Herbicides
J. FEIERABEND, TH. WINKELHÜSENER, P. KEMMERICH, and U. SCHULZ 898

- Rotating-Field-Induced Rotation and Measurement of the Membrane Capacitance of Single Mesophyll Cells of *Avena sativa*
W. M. ARNOLD and U. ZIMMERMANN 908

- The Triton X-100 and High Salt Resistant Residue of *Saccharomyces cerevisiae* Nuclear Membranes
K. MANN and D. MECKE 916

- Malonate and Krebs Cycle Intermediates Utilization in the Presence of other Carbon Sources by *Rhizobium japonicum* and Soybean Bacteroids
D. WERNER, W. DITTRICH, and H. THIERFELDER 921

- Alanine Dehydrogenase from Bacteroids and Free Living Cells of *Rhizobium japonicum*
P. MÜLLER and D. WERNER 927

- The Tautomerism of Cytosine and Hydroxycytosine. A Quantum-Mechanical Study
J. S. KWIATKOWSKI, B. LESYNG, M. H. PALMER, and W. SAENGER 937

- The Reversibility of the Vitamin C Redox System: Electrochemical Reasons and Biological Aspects
H. SAPPER, S.-O. KANG, H.-H. PAUL, and W. LOHMANN 942

- Coupled Gas Chromatography — Single Cell Recording: a New Technique for Use in the Analysis of Insect Pheromones
L. J. WADHAMS 947

- Evaluation of (Z)-5-Decen-1-ol as an Attractant for Male Larch Casebearer Moths, *Coleophora laricella*
E. PRIESNER, W. ALTENKIRCH, W. BALTENSWEILER, and H. BOGENSCHÜTZ 953

- A Steroid-Binding Protein from Insect Haemolymph Isolated by Photoaffinity Labelling and Immuno-adsorption
L. REUM, G. KÄUSER, U. ENDERLE, and J. KOOLMANN 967

- Structure Investigations of Agonists of the Natural Neurotransmitter Acetylcholine, III[1]. X-Ray Structure Analysis of (2-Ethoxyethyl)trimethylammonium Chloride
A. GIEREN and M. KOKKINIDIS 977

- Polycation-Bacterium Interactions and Wall Subunits as Endocytosis Factors. Topoisomeraselike Action of Basic Polypeptides Suggesting a 7th Class of Enzymes: The Stereases
S. ANTOHI 985

- Tl⁺-Ions: Influence on Cardiac Contractility
R. ZISKOVEN, C. ACHENBACH, J. WIEMER, and U. WINTER 995

Tl⁺-Ions: Effects on the Automaticity of Sinoatrial Tissue and on $dV/dt_{\max}$ and i_{K2} of Cardiac Purkinje Fibres

C. ACHENBACH, J. WIEMER, R. ZISKOVEN, and U. WINTER 1006

Tl⁺-Ions: Comparison of the Effects on the Slow Inward Current and Contractility of Ventricular Tissues

J. WIEMER, R. ZISKOVEN, and C. ACHENBACH 1015

Differentiation in *Volvox carteri*: Study of Pattern Variation of Reproductive Cells

R. GILLES and L. JAENICKE 1023

Thermodynamic Approach to a Possible Theory of the Evolution of a Genetic Code

M. F. MACCHIATO and A. TRAMONTANO 1031

Notes

B-Decachloro-*o*-carborane Derivatives Suitable for the Preparation of Boron-Labeled Biological Macromolecules

D. GABEL and R. WALCSZYNA 1038

Temperature-Dependent Colour Change in Larvae of the Green Spider *Micromata rosea* (Sparassidae) (In German)

A. HOLL 1040

"Memory" of First Interaction with Physiological or Biologically Active Foreign Molecules (Benzpyrene, Gibberelline) in a Unicellular (*Tetrahymena*) Model System

G. CSABA, G. NÉMETH, and P. VARGHA 1042

On the Nerve Growth Factor (NGF) from Human Glandula submandibularis (In German)

R. RIEMSCHEIDER, F. DEMBÉLÉ, and I. A. K. GHOURI 1045

Spatio-Temporal Visual Receptive Fields as Revealed by Spatio-Temporal Random Noise

E. HIDA and KEN-ICHI NAKA 1048

On the Taxonomic Position of Hypocomidae (Ciliata) (In German)

K. G. GRELL and A. MEISTER 1050

Contents of Number 11/12

Original Communications

Composition of Epicuticular Waxes from Fruits of *Jobba* (*Simmondsia chinensis* [Link] Schneider) P.-G. GÜLZ 1053

Biliverdin IX α , Intermediate and End Product of Tetrapyrrole Biosynthesis H.-P. KÖST and E. BENEDIKT 1057

The Oxidative Degradation of L-Ascorbic Acid via an α -Ketoaldehyde S.-O. KANG, H. SAPPER, and W. LOHMANN 1064

Further Observations on the Source of Nitrogen in Phenazine Biosynthesis A. RÖMER and R. B. HERBERT 1070

Photosynthetic Adaptation in *Synechococcus* Cells G. DÖHLER and J.-C. LECLERC 1075

Interrelationship between Quinolizidine Alkaloid Producing Legumes and Infesting Insects: Exploitation of the Alkaloid-Containing Phloem Sap of *Cytisus scoparius* by the Broom Aphid *Aphis cytisorum* M. WINK, T. HARTMANN, L. WITTE and J. RHEINHEIMER 1081

Biological Activities of Sesquiterpene Lactones from *Helianthus annuus*: Antimicrobial and Cytotoxic Properties; Influence on DNA, RNA, and Protein Synthesis O. SPRING, J. KUPKA, B. MAIER, and A. HAGER 1087

Bleaching Activity of New 2-Phenylpyridazinones: Structure-Activity Relationship G. SANDMANN and P. BÖGER 1092

Some Observations on the Saponin Accumulation in Oat Seedlings and on the Transformation of the Avenacosides to the Antibiotic 26-Desglucoavenacosides U. LAUDENBACH and J. KESSELMEIER 1095

Naramycin B, an Antibiotic from *Streptomyces griseus* Strain 587 with Herbicidal Properties-Fermentation, Isolation, and Identification D. BERG, M. SCHEDEL, R. R. SCHMIDT K. DITGENS and H. WEYLAND 1100

The Intracellular Distribution of Enzymes of the Glycerol Cycle in the Unicellular Alga <i>Dunaliella parva</i> H. GIMMLER and G. LOTTER	1107	Release of K ⁺ and H ⁺ from Poly U in Aqueous Solution upon γ and Electron Irradiation. Rate of Strand Break Formation in Poly U E. BOTHE and D. SCHULTE-FROHLINDE	1191
Osmoregulation in <i>Dunaliella</i> . Intracellular Distribution of Enzymes of Glycerol Metabolism A. D. BROWN, R. McC. LILLEY, and T. MARENGO	1115	Model Reactions for the Degradation of DNA-4' Radicals in Aqueous Solution. Fast Hydrolysis of α Alkoxyalkyl Radicals with a Leaving Group in β -Position Followed by Radical Rearrangement and Elimination Reactions G. BEHRENS, G. KOLTZENBURG, and D. SCHULTE-FROHLINDE	1205
Multicomponent Mandibular Gland Secretions in Three Species of Andrena Bees (Hym., Apoidea) G. BERGSTRÖM, J. TENGÖ, W. REITH, and W. FRANCKE	1124	Induction of Single- and Double-Strand Breaks in Linear and Superhelical DNA by Phleomycin (In German) F. SCHMÜLLING and W. KÖHNLEIN	1228
The Sex Pheromone of the Silver Y Moth <i>Chrysodeixis eriosoma</i> (Doubleday) in New Zealand M. H. BENN, R. A. GALBREATH, V. A. HOLT, H. YOUNG, G. DOWN, and E. PRIESNER	1130	Effect of Water Soluble Polymer, Polyethylene-glycol, and Glass-Forming Compounds on Cell Fusion F. YOSHII and I. KAETSU	1234
Structure-Activity-Relation of Analogues and Homologues of Blepharismone, the Low-Molecular Conjugation Hormone of <i>Blepharisma japonicum</i> (In German) M. ENTZEROTH and L. JAENICKE	1136	System Analysis of the Circadian Rhythm of <i>Euglena gracilis</i> . I. Linearities and Non-Linearities in the Response to Temperature Signals W. LORK, T. KREUELS, W. MARTIN, and K. BRINKMANN	1240
Conformational Analysis of Benzyloxycarbonyl-Protected Peptides I. KNACK	1141	Exogenous and Endogenous Control of Swimming Activity in <i>Astyanax mexicanus</i> (Characidae, Pisces) by Direct Light Response and by a Circadian Oscillator. I. Analyses of the Time-Control Systems of an Epigeal River Population W. ERCKENS and W. MARTIN	1253
Immunochemical Characterization of <i>Porphyridium cruentum</i> B-Phycocerythrin: Proof of Cross-Reaction between Chromophore-Free Apoprotein and Holoprotein-Specific Antibodies E. SEPP, G. WANNER, J. EDER, and H.-P. KÖST	1146	Exogenous and Endogenous Control of Swimming Activity in <i>Astyanax mexicanus</i> (Characidae, Pisces) by Direct Light Response and by a Circadian Oscillator. II. Features of Time-Controlled Behaviour of a Cave Population and their Comparison to a Epigeal Ancestral Form W. ERCKENS and W. MARTIN	1266
X-Ray Studies on Phospholipid Bilayers. II. Polymorphic Forms of Dipalmitoyl Phosphatidylethanolamine M. SUWALSKY and E. KNIGHT	1157	Functional Regeneration of the Visual System in Teleosts. Comparative Investigations after Optic Nerve Crush and Damage of the Retina R. KÄSTNER and H. WOLBURG	1274
Statistical Description of Isotope Exchange Processes: A Multisite Model for the ¹⁸ O Exchange P. RÖSCH	1161	Notes	
Fluorescence Studies on N-(3-Pyrene)Maleinimide-Labeled Sarcoplasmic Reticulum ATPase in Native and Solubilized Membranes H. LÜDI and W. HASSELBACH	1170	Monoterpenes from the True Bug <i>Harpocera thoracica</i> (Hemiptera) H.-P. HANSEN and J. JACOB	1281
Localization of Ca ²⁺ at the Plasma Membrane of Bullfrog Myocardial Cells R. MEYER, M. SCHMITZ, W. STOCKEM, and H. G. HAAS	1180		

Diterpenes of <i>Cheilanthes argentea</i> , a Fern from Asia E. WOLLENWEBER, P. RÜEDI, and D. S. SEIGLER	1283	Isolation and Synthesis of Hemoregulatory Peptide W. R. Paukovits and O. D. Laerum	1297
Composition of Phospholipids in Seed Oil of <i>Jojoba</i> (<i>Simmondsia chinensis</i> [Link], Schneider) P. G. GÜLZ and C. EICH	1286	Erratum To N. Yamamoto, J. Schneider, Y. Hinuma, and G. Hunsmann (37c, 731—732 [1982])	1300
Adenine Phosphoribosyltransferase Activity in Mitochondria of <i>Catharanthus roseus</i> Cells F. HIROSE and H. ASHIHARA	1288	Subject Index	1301
Inactivation of the Sarcoplasmic Reticulum Cal- cium-Transport-ATPase by Lasolocid in Com- bination with Triton X-100 W. HASSELBACH, H. LÜDI, and A. MIGALA	1290	Authors Index	1327
Small- and Large-Angle X-Ray Scattering Studies of Counter Ion Influence on tRNA Conformation P. WILHELM, I. PILZ, G. DEGOVICS, and F. VON DER HAAR	1293	Errata in this volume To A. Hager and M. Helmle (36c, 997 [1981]) To J. Kesselmeier and D. Strack (36c, 1072 [1981]) To N. Yamamoto, J. Schneider, Y. Hinuma, and G. Hunsmann (37c, 731 [1982])	144 350 1300