

CONTENTS OF VOLUME 39

Number 1

Announcement	ix
Review	
Plant copper-amine oxidases	1 R. MEDDA, A. PADIGLIA and G. FLORIS
Growth and Metabolism	
<i>ent</i> -3 β -Hydroxykaur-16-ene and <i>ent</i> -17-hydroxykaur-15-ene in paclobutrazol-treated wheat seedlings	11 S. J. CROKER, P. GASKIN, M. H. BEALE and J. R. LENTON
Purification and biochemical characterization of 1-aminocyclopropane-1-carboxylate oxidase from banana fruit	15 M. A. MOYA-LEON and P. JOHN
Regulation of the enzymes of UDP-sugar metabolism during differentiation of French bean	21 D. ROBERTSON, I. BEECH and G. P. BOLWELL
Two cationic peroxidases from cell walls of <i>Araucaria araucana</i> seeds	29 A. RIQUELME and L. CARDEMIL
Properties of carrot polyphenoloxidase	33 I. SÖDERHÄLL
Purification and characterization of carnitine acyltransferase from higher plant mitochondria	39 H. SCHWABEDISSEN-GERBLING and B. GERHARDT
Effect of zinc on free radicals and proline in <i>Brassica</i> and <i>Cajanus</i>	45 ALIA, K. V. S. K. PRASAD and P. P. SARADHI
A comparison of native and synthetic mushroom melanins by Fourier-transform infrared spectroscopy	49 J. A. PIERCE and D. M. RAST
Ecological Biochemistry	
Structural features of fungal β -D-glucans for the efficient inhibition of the initiation of virus infection on <i>Nicotiana tabacum</i>	57 P. ROUHIER, M. KOPP, V. BEGOT, M. BRUNETEAU and B. FRITIG
Molluscicidal saponins from <i>Catunaregam nilotica</i>	63 E. LEMMICH, C. CORNETT, P. FURU, C. L. JØRSTIAN, A. D. KNUDSEN, C. E. OLSEN, A. SALIH and S. T. THILBORG
Biosynthesis	
Evidence for rishitin biosynthesis in tomato cultures	69 A. D'HARLINGUE, A. M. MAMDOUH, P. Malfatti, M.-C. SOULIE and G. BOMPEIX
Towards the specification of consecutive steps in macromolecular lignin assembly	71 M. NOSE, M. A. BERNARDS, M. FURLAN, J. ZAJICEK, T. L. EBERHARDT and N. G. LEWIS
Cell Culture and Biotechnology	
3,4-Dichloroaniline <i>N</i> -glucosyl- and <i>N</i> -malonyltransferase activities in cell cultures and plants of soybean and wheat	81 B. SCHMIDT, C. RIVERO and B. THIEDE
Biotransformation of the monoterpene, rose oxide, by <i>Aspergillus niger</i>	85 M. MIYAZAWA, K. YOKOTE and H. KAMEOKA
Chemotaxonomy	
Sesquiterpenoids and cyclic bisbibenzyls from the liverwort <i>Reboulia hemisphaerica</i>	91 HAN-CHAO WEI, SHIH-JEN MA and CHIA-LI WU
Terpenoids from the liverworts <i>Symphogyna brasiliensis</i> and unidentified <i>Frullania</i> species	99 M. TORI, M. AOKI, K. NAKASHIMA and Y. ASAKAWA
Bioactive Plant Products	
Antiallergic dimeric prenylbenzoquinones from <i>Ehretia microphylla</i>	105 S. YAMAMURA, L. R. SIMPOL, K. OZAWA, K. OHTANI, H. OTSUKA, R. KASAI, K. YAMASAKI and W. G. PADOLINA

Plant Chemistry	
Caeruleosides A and B, bis-iridoid glucosides from <i>Lonicera caerulea</i>	111 K. MACHIDA, J. ASANO and M. KIKUCHI
Secoiridoid and flavonoid glycosides from <i>Gonocaryum calleryanum</i>	115 T. KANEKO, M. SAKAMOTO, K. OHTANI, A. ITO, R. KASAI, K. YAMASAKI and W. G. PADORINA
Sesquiterpene dimers from <i>Chloranthus japonicus</i>	121 J. KAWABATA, E. FUKUSHI and J. MIZUTANI
Sesquiterpene lactones from <i>Schkuhria pinnata</i>	127 A. DEL V. PACCIARONI, V. E. SOSA, L. A. ESPINAR and J. C. OBERTI
Sesquiterpene lactones from <i>Neurolaena lobata</i>	133 C. M. PASSREITER, D. WENDISCH and D. GONDOL
Abietane and icetexane diterpenoids from the roots of <i>Salvia aspera</i>	139 B. ESQUIVEL, M. FLORES, S. HERNÁNDEZ-ORTEGA, R. A. TOSCANO and T. P. RAMAMOORTHY
(S)-13-Hydroxygeranylgeraniol-derived furanoditerpenes from <i>Bifurcaria bifurcata</i>	145 R. VALLS, L. PIOVETTI, B. BANAIGS, A. ARCHAVLIS and M. PELLEGRINI
3-Hydroxy-3-methylglutaryl dolabellane diterpenes from <i>Chrozophora obliqua</i>	151 K. M. MOHAMED, K. OHTANI, R. KASAI and K. YAMASAKI
Two diterpenes with rearranged abietane skeletons from <i>Zhumeria majdae</i>	163 A. RUSTAIYAN, M. SAMADIZADEH, Z. HABIBI and J. JAKUPOVIC
Triterpenoids from <i>Walsura piscidia</i>	167 T. R. GOVINDACHARI, G. N. KRISHNA KUMARI and G. SURESH
Two cytotoxic pentacyclic triterpenoids from <i>Nerium oleander</i>	171 B. SHAHEEN SIDDIQUI, S. BEGUM, S. SIDDIQUI and W. LICHTER
Dammarane triterpenes from <i>Cleome amblyocarpa</i>	175 F. M. HARRAZ, A. ULUBELEN, S. ÖKSÜZ and N. TAN
Triterpenoid glucuronide saponins from root bark of <i>Aralia armata</i>	179 M. HU, K. OGAWA, Y. SASHIDA and P.-G. XIAO
Mazusaponins I–IV, triterpene saponins from <i>Mazus Miquelii</i>	185 E. YAGUCHI, T. MIYASE and A. UENO
Saponins from <i>Mussaenda pubescens</i>	191 WEIMIN ZHAO, JUNPING XU, GUOWEI QIN and RENSHENG XU
Saponins from <i>Hacquetia epipactis</i>	195 J. BURCZYK, G. REZNICEK, S. BAUMGARTEN, M. HUGH-BLOCH, J. JURENITSCH, H. SCHRÖDER, U. WERZ and E. HASLINGER
Steroidal glycosides from <i>Cynanchum caudatum</i>	199 T. WARASHINA and T. NORO
Cucurbitacin glycosides from <i>Caput nigri</i>	205 K. NAKANO, Y. KANAI, K. MURAKAMI and Y. TAKAISHI
Cucurbitacin glycosides from Cabeça-de-negro	209 K. NAKANO, Y. KANAI, K. MURAKAMI and Y. TAKAISHI
Polar eupomatenoids from <i>Caryodaphnopsis tonkinensis</i>	213 H. RIPPERGER, N. HOANG ANH, U. HIMMELREICH, T. VAN SUNG and G. ADAM
Amariinic acid and related ellagitannins from <i>Phyllanthus amarus</i>	217 L. YEAP FOO
Chemiluminescence of benzoic and cinnamic acids, and flavonoids in the presence of aldehyde and hydrogen peroxide or hydroxyl radical by Fenton reaction	225 Y. YOSHIKI, K. OKUBO, M. ONUMA and K. IGARASHI

A 9,10-dihydrophenanthrene derivate from <i>Epimedium koreanum</i>	231	WEN-KUI LI, JING-QI PAN, MU-JIAN LÜ, RU-YI ZHANG and PEI-GEN XIAO
Cyclohexylethanoids and related glucosides from <i>Millingtonia hortensis</i>	235	T. HASE, Y. KAWAMOTO, K. OHTANI, R. KASAI, K. YAMASAKI and C. PICHEANSOONTHON
Delphinidin 3-xylosylrutinoside in petals of <i>Linum grandiflorum</i>	243	K. TOKI, N. SAITO, K. HARADA, A. SHIGIHARA and T. HONDA
N-Demethyl budmunchiamines from <i>Albizzia lebbek</i> seeds	247	L. N. MISRA, A. K. DIXIT and H. WAGNER
Short Reports		
Triterpenoid diglucoside of <i>Enterospermum pruinsum</i>	251	P. RASOANAIVO, G. MULTARI, E. FEDERICI and C. GALEFFI
A lupene-type triterpene from <i>Mimusops elengi</i>	255	N. JAHAN, W. AHMED and A. MALIK
4-(p-Hydroxyphenyl)-(2S)-butanol from the needles of <i>Taxus baccata</i>	259	S. R. ROJATKAR, D. D. SAWAIKAR, B. SINHA, T. RAVINDRANATHAN and B. A. NAGASAMPAGI
A flavone diglycoside from <i>Cirsium japonicum</i> var. <i>ussuriense</i>	261	JONG CHEOL PARK, JONG HO LEE and JAE SUE CHOI

Number 2

Announcement

ix

Review Article Number 103

Anthranilate synthase in microorganisms and plants

263	R. M. ROMERO, M. F. ROBERTS and J. D. PHILLIPSON
-----	---

Growth and Metabolism

Different forms of tomato pectinesterase have different kinetic properties

277	A. G. S. WARRILOW and M. G. JONES
-----	--------------------------------------

Effect of salt stress on polyamine metabolism in *Brassica campestris*

283	S. DAS, A. BOSE and B. GHOSH
-----	------------------------------

Distribution, biosynthesis and turnover of pyrrolizidine alkaloids in *Cynoglossum officinale*

287	N. M. VAN DAM, L. WITTE, C. THEURING and T. HARTMANN
-----	---

Ecological Biochemistry

Sterol composition of the vine powdery mildew fungus, *Uncinula necator*: comparison of triadimenol-sensitive and resistant strains

293	D. DEBIEU, M.-F. CORIO-COSTET, H. STEVA, C. MALOSSE and P. LEROUX
-----	---

Tropane alkaloids and toxicity of *Convolvulus arvensis*

301	F. G. TODD, F. R. STERMITZ, P. SCHULTHEIS, A. P. KNIGHT and J. TRAUB-DARGATZ
-----	--

Biosynthesis

Plant-like biosynthesis of gibberellin A₁ in the fungus *Phaeosphaeria* sp. L487

305	H. KAWAIDE, T. SASSA and Y. KAMIYA
-----	---------------------------------------

Succinyl-coenzyme A: anthocyanidin 3-glucoside succinyltransferase in flowers of *Centaurea cyanus*

311	M. YAMAGUCHI, T. MAKI, T. OHISHI and I. INO
-----	--

Tigloyl-CoA:pseudotropine acyl transferase—an enzyme of tropane alkaloid biosynthesis

315	S. RABOT, A. C. J. PEERLESS and R. J. ROBINS
-----	---

The biosynthesis of cyanogenic glucosides in roots of cassava

323	L. DU, M. BOKANGA, B. LINDBERG MØLLER and B. A. HALKIER
-----	---

The enzymatic formation of δ -cadinene from farnesyl diphosphate in extracts of cotton

327	C. R. BENEDICT, I. ALCHANATI, P. J. HARVEY, J. LIU, R. D. STIPANOVIC and A. A. BELL
-----	---

A reinvestigation of the biosynthesis of lanosterol in <i>Euphorbia lathyris</i>	333	J.-L. GINER and C. DJERASSI
Cell Culture and Biotechnology		
Biotransformation of (–)-nopol by <i>Glomerella cingulata</i>	337	M. MIYAZAWA, Y. SUZUKI and H. KAMEOKA
Terpenoid indole alkaloid biosynthesis and enzyme activities in two cell lines of <i>Tabernaemontana divaricata</i>	341	D. DAGNINO, J. SCHRIPSEMA and R. VERPOORTE
Chemotaxonomy		
Fatty acid composition of 15 species of marine microalgae	351	N. V. ZHUKOVA and N. A. AIZDAICHER
Volatile constituents of needles of five <i>Pinus</i> species grown in Greece	357	V. ROUSSIS, P. V. PETRAKIS, A. ORTIZ and B. E. MAZOMENOS
Chemotaxonomic evidence for a division of <i>Lactarius vellereus</i> and <i>L. bertillonii</i> as different species	363	T. HANSSON, O. STERNER and Å. STRID
Sesquiterpene lactones as a result of interspecific hybridization in <i>Helianthus</i> species	367	H. BUSCHMANN and O. SPRING
Major sterol composition of some algae from Qatar	373	H. S. AL EASA, J.-M. KORNPORST and A. M. RIZK
Phenylpropanoid glycosides, a furanone glucoside and geniposidic acid from members of the rubiaceae	375	A. NAHRSTEDT, J. ROCKENBACH and V. WRAY
Tri- and tetrahydroxycoumarin derivatives from <i>Tetraphis pellucida</i>	379	M. JUNG, H. GEIGER and H. D. ZINSMEISTER
Bioactive Plant Products		
Constituents and cytotoxic principles of <i>Nothapodytes foetida</i>	383	TIAN-SHUNG WU, YANN-LII LEU, HUA-CHUN HSU, LI-FEI OU, CHIEH-CHIH CHEN, CHIEH-FU CHEN, JUN-CHIH OU and YANG-CHANG WU
Plant Chemistry		
Eremantholides and a guaianolide from <i>Lychnophora rupestris</i>	387	W. R. CUNHA, J. L. C. LOPES, W. VICHNEWSKI, J. G. DÍAZ and W. HERZ
Norditerpenes from <i>Juniperus chinensis</i>	391	CHING-KUO LEE, JIM-MIN FANG and YU-SHIA CHENG
Pregnane glycosides from <i>Stapelia variegata</i>	395	K. A. EL SAYED, A. F. HALIM, A. M. ZAGHLOUL, J. D. MCCHESENEY, M. P. STONE, M. VOEHLER and K. HAYASHI
Anacardoside from the seeds of <i>Semecarpus anacardium</i>	405	R. R. GIL, L.-Z. LIN, G. A. CORDELL, M. R. KUMAR, M. RAMESH, B. M. REDDY, G. K. MOHAN and A. V. N. A. RAO
Phenylpropane derivatives from roots of <i>Cosmos caudatus</i>	409	N. FUZZATI, SUTARJADI, W. DYATMIKO, A. RAHMAN and K. HOSTETTMANN
Neolignans, nor-neolignans and other compounds from roots of <i>Krameria grayi</i>	413	H. ACHENBACH, W. UTZ, H. SÁNCHEZ V., E. M. G. TOUCHÉ, J. VERDE S. and X. A. DOMÍNGUEZ
Prenylated lignans from <i>Haplophyllum ptilostylum</i>	417	A. ULUBELEN, R. R. GIL, G. A. CORDELL, A. H. MERİÇLİ and F. MERİÇLİ
Acylated cyanidin 3-rutinoside-5,3'-diglucoside from the purple-red flower of <i>Lobelia erinus</i>	423	N. SAITO, K. TOKI, H. KUWANO, H. MORIYAMA, A. SHIGIHARA and T. HONDA

3-Desoxycallunin and 2"-acetylcallunin, two minor 2,3-dihydro-flavonoid glucosides from <i>Calluna vulgaris</i>	427	D. P. ALLAIS, A. J. CHULIA, M. KAOUADJI, A. SIMON and C. DELAGE
Cyclopeptide alkaloids of <i>Discaria febrifuga</i> (Rhamnaceae)	431	A. F. MOREL, E. C. MACHADO and L. A. WESSJOHANN
Isoquinoline alkaloids, decumbenine B and C, from <i>Corydalis decumbens</i>	435	JIN-SHENG ZHANG, DA-YUAN ZHU and SHAN-HAI HONG
Isoquinoline alkaloids from <i>Acangelisia gusanlung</i>	439	JIN-SHENG ZHANG, L. LE MEN-OLIVIER and G. MASSIOT
Short Reports		
Clerodane diterpenoids from <i>Cyathocalyx zeylanica</i>	443	E. M. K. WIJERATHNE, L. B. DE SILVA, Y. TEZUKA and T. KIKUCHI
Clerodane diterpenes from <i>Polyalthia cheliensis</i>	447	XIAO-JIANG HAO, XIAO-SHENG YANG, ZHENG ZHANG and LI-JIAN SHANG
Kaurane derivatives from <i>Acanthopanax koreanum</i>	449	YOUNG-HO KIM, HANG-SUB KIM, SUNG-WOO LEE, M. URAMOTO and JUNG-JOON LEE
Two triterpenoids from <i>Boswellia serrata</i> gum resin	453	B. MAHAJAN, S. C. TANEJA, V. K. SETHI and K. L. DHAR
Cannabinerolic acid, a cannabinoid from <i>Cannabis sativa</i>	457	F. TAURA, S. MORIMOTO and Y. SHOYAMA
Phenylbutenoid monomers from the rhizomes of <i>Zingiber cassumunar</i>	459	T. MASUDA and A. JITOE
Quercetin 5,4'-dimethyl ether from <i>Rhododendron ellipticum</i>	463	LI-KANG HO and WEN-NENG LIN
Cyclobartramiatriluteolin, a unique triflavonoid from <i>Bartramia stricta</i>	465	H. GEIGER, A. VOIGT, T. SEEGER, H.-D. ZINSMEISTER, J.-A. LÓPEZ-SÁEZ, M.-J. PÉREZ-ALONSO and A. VELASCO-NEGERUELA
Dehydropleiocarpine alkaloids from <i>Kopsia profunda</i>	469	TOH-SEOK KAM and POH-SUAN TAN
Heliscabine, a pyrrolizidine ester alkaloid from <i>Heliotropium scabrum</i>	473	A. J. LAKSHMANAN and S. SHANMUGASUNDARAM
Minor alkaloids from <i>Lycoris sanguinea</i>	477	O. M. ABDALLAH
Book Review		
Handbook of Phytoalexin Metabolism and Action: edited by M. DANIEL and R. P. PURKAYASTHA	479	J. B. HARBORNE

Number 3

Announcement	ix
Growth and Metabolism	
Endo- <i>N</i> -acetyl- β -D-glucosaminidase and peptide- <i>N</i> ⁴ -(<i>N</i> -acetyl-glucosaminyl) asparagine amidase activities during germination of <i>Raphanus sativus</i>	481
1,3-Diaminopropane is a suicide substrate for pea diamine oxidase	489
Pectin esterase activity and pectin methyl esterification in heated Golden Delicious apples	491
Ammonium ion-dependent isomerization of glutamate dehydrogenase in relation to glutamate synthesis in maize	495

β -1,3-Glucanase isozymes from the latex of <i>Hevea brasiliensis</i>	505	N. CHURNGCHOW, A. SUNTARO and R. WITTISUWANNNAKUL
Effect of thiolactomycin on fatty acid synthesis in peas	511	A. L. JONES, J. E. DANCER and J. L. HARWOOD
Dimer as the active form of a polyketide biosynthetic enzyme 6-hydroxymellein synthase	515	F. KUROSAKI
Purification and partial characterization of a <i>Schizolobium parahyba</i> chymotrypsin inhibitor	521	E. M. T. SOUZA, K. MIZUTA, M. U. SAMPAIO and C. A. M. SAMPAIO
Ecological Biochemistry		
Evidence for the involvement of superoxide anion in the ethylene- induced chlorophyll <i>a</i> catabolism of <i>Raphanus sativus</i> cotyledons	527	M. ADACHI and K. SHIMOKAWA
Cadinane-type sesquiterpenes induced in <i>Gossypium</i> cotyledons by bacterial inoculation	531	G. DAVILA-HUERTA, H. HAMADA, G. D. DAVIS, R. D. STIPANOVIC, C. M. ADAMS and M. ESSENBERG
Specific competitive inhibitor of secreted phospholipase A ₂ from berries of <i>Schinus terebinthifolius</i>	537	M. K. JAIN, BAO-ZHU YU, J. M. ROGERS, A. E. SMITH, E. T. A. BOGER, R. L. OSTRANDER and A. L. RHEINGOLD
Biosynthesis		
Last stages in the biosynthesis of antirrhinoides	549	S. DAMTOFT, S. R. JENSEN and M. SCHACHT
(+)- δ -Cadinene is a product of sesquiterpene cyclase activity in cotton	553	G. D. DAVIS and M. ESSENBERG
Cell Culture and Biotechnology		
Biotransformation of (+)- and (–)-camphorquinones by fungi	569	M. MIYAZAWA, M. NOBATA, M. HYAKUMACHI and H. KAMEOKA
Comparison between metabolite productions in cell culture and in whole plant of <i>Maclura pomifera</i>	575	G. DELLE MONACHE, M. C. DE ROSA, R. SCURRIA, A. VITALI, A. CUTERI, B. MONACELLI, G. PASQUA and B. BOTTA
Plant Chemistry		
Three sulphur-containing stress metabolites from Japanese radish	581	K. MONDE, M. TAKASUGI and A. SHIRATA
No involvement of methoxybrassinin in the biosynthesis of cyclobrassinin	587	K. MONDE, K. TAMURA and M. TAKASUGI
Dammarane glycosides from aerial part of <i>Neosomitra integrifoliola</i>	591	SEIJI FUJITA, RYOJI KASAI, KAZUHIRO OHTANI, KAZUO YAMASAKI, CHIU MING-HUA, NIE RUI-LIN and OSAMU TANAKA
Sesquiterpenes from leaves of <i>Cryptomeria japonica</i>	603	WEN-CHIUNG SU, JIM-MIN FANG and YU-SHIA CHENG
Sesquiterpene lactone chemistry of <i>Zaluzania grayana</i> from on-line LC-NMR measurements	609	O. SPRING, H. BUSCHMANN, B. VOGLER, E. E. SCHILLING, M. SPRAUL and M. HOFFMANN
A sesquiterpene lactone, phenyl and biphenyl compounds from <i>Antrodia cinnamomea</i>	613	HUNG-CHEN CHIANG, DE-PENG WU, I-WHA CHERNG and CHUEN-HER UENG
Nor-sesquiterpenes from <i>Teucrium heterophyllum</i>	617	B. M. FRAGA, M. G. HERNÁNDEZ, T. MESTRES, D. TERRERO and J. M. ARTEAGA
Minor limonoids from <i>Trichilia rubra</i>	621	L. L. MUSZA, L. M. KILLAR, P. SPEIGHT, C. J. BARROW, A. M. GILLUM and R. COOPER

Triterpenoid saponins from <i>Phytolacca rivinoides</i> and <i>Phytolacca bogotensis</i>	625	S. E. NIELSEN, U. ANTHONI, C. CHRISTOPHERSEN and C. CORNETT
Three dodecaene C ₃₀ -carotenoids from halophilic bacteria	631	M. RØNNEKLEIV, M. LENES, S. NORGÅRD and S. LIAAEN-JENSEN
Proanthocyanidins with (+)-epicatechin units from <i>Byrsonima crassifolia</i> bark	635	F. GEISS, M. HEINRICH, D. HUNKLER and H. RIMPLER
Structure revision of a furanocoumarin from <i>Dorstenia contrajerva</i>	645	C. TERREAUX, M. MAILLARD, H. STOECKLI-EVANS, M. P. GUPTA, K. R. DOWNUM, J. M. E. QUIRKE and K. HOSTETTMANN
Stilbenoids from the orchids <i>Agrostophyllum callosum</i> and <i>Coelogyne flaccida</i>	649	P. L. MAJUMDER, S. BANERJEE, D. C. MAITI and S. SEN
Neolignans and a lignan from <i>Piper clarkii</i>	655	A. K. PRASAD, O. D. TYAGI, J. WENGEL, P. M. BOLL, C. E. OLSEN, K. S. BISHT, A. SINGH, A. SARANGI, R. KUMAR, S. C. JAIN and V. S. PARMAR
Phenolic glucosides and lignans from <i>Ehretia ovalifolia</i>	659	K. YOSHIKAWA, H. KAGEYAMA and S. ARIHARA
A 3,4- <i>seco</i> -cycloartane derivative from <i>Tillandsia usneoides</i>	665	G. M. CABRERA, M. GALLO and A. M. SELDES
Flavonoid compounds in roots of <i>Sophora tetraptera</i>	667	MUNEKAZU INUMA, MASAYOSHI OHYAMA, YOKO KAWASAKA and TOSHIYUKI TANAKA
Isoflavones from pods of <i>Laburnum anagyroides</i>	673	HIROJI SATO, SATOSHI TAHARA, J. L. INGHAM and S. Z. DZIEDZIC
Isoflavones and alkaloids from the stem bark and seeds of <i>Erythrina senegalensis</i>	677	J. WANDJI, S. S. AWANCHIRI, Z. TANEE FOMUM, F. TILLEQUIN and F. LIBOT
Epimeric pavine <i>N</i> -oxides from <i>Thalictrum simplex</i>	683	M. P. VELCHEVA, S. DANGHAAGHIIN, Z. SAMDANGHIIN, Z. YANSANGHIIN and M. HESSE
Spermidine alkaloids type inandenine from <i>Oncinotis tenuiloba</i>	689	M. K.-H. DOLL, A. GUGGISBERG and M. HESSE
Phenanthroindolizidine alkaloids from <i>Tylophora tanakae</i>	695	F. ABE, Y. IWASE, T. YAMAUCHI, K. HONDA and N. HAYASHI
Isoquinoline alkaloids from <i>Ancistrocladus tectorius</i>	701	A. MONTAGNAC, A. H. A. HADI, F. REMY and M. PAÏS
Alkaloids of young ponderosa pine seedlings and late steps in the biosynthesis of pinidine	705	J. N. TAWARA, F. R. STERMITZ and A. V. BLOKHIN
Short Reports		
Lipid constituents from <i>Stellaria media</i>	709	A. PANDE, Y. N. SHUKLA and A. K. TRIPATHI
Sesquiterpenoids from <i>Valeriana fauriei</i>	713	KOICHI NISHIYA, TSUYOSHI TSUJIYAMA, TAKEFUMI KIMURA, KOICHI TAKEYA, HIDEJI ITOKAWA and YOICHI IITAKA
Salvileucolide methylester, a sesterterpene from <i>Salvia sahendica</i>	715	F. M. MOGHADDAM, B. ZAYNIZADEH and P. RÜEDI
(<i>S</i>)-5,7'-Biphyscion 8-glucoside from <i>Cassia torosa</i>	717	S. KITANAKA and M. TAKIDO

An azaphilone from <i>Talaromyces tardifaciens</i>	719	KOOHEI NOZAWA, RITSUKO SAITO, SHUN-ICHI UDAGAWA, SHOICHI NAKAJIMA and KEN-ICHI KAWAI
Flavonol glucosides in pericarps of <i>Zanthoxylum bungeanum</i>	723	QUANBO XIONG, DAWEN SHI and MIZUO MIZUNO
Flavone C-glycosides from <i>Bryonia alba</i> and <i>B. Dioica</i>	727	M. KRAUZE-BARANOWSKA and W. CISOWSKI
Synthesis of sarmentosine, an amide alkaloid from <i>Piper sarmentosum</i>	731	G. M. STRUNZ and H. FINLAY
Isocryptolepine from <i>Cryptolepis sanguinolenta</i>	731	J.-L. POUSSET, M.-T. MARTIN, A. JOSSANG and B. BODO

Number 4

Review Article Number 104

Molecular organization of the shikimate pathway in higher plants	737	J. SCHMID and N. AMRHEIN
Growth and Metabolism		
Effect of pH on CO ₂ -activated 1-aminocyclopropane-1-carboxylate oxidase activity from apple fruit	751	F. MIZUTANI, JIAN GUO DONG and SHANG FA YANG
Isolation and characterization of an extracellular proteinase from <i>Pseudomonas tolaasii</i>	757	A. BARAL, P. F. FOX and T. P. O'CONNOR
Phospholipid, galactolipid, and steryl lipid composition of apple fruit cortical tissue following postharvest CaCl ₂ infiltration	763	G. A. PICCHIONI, A. E. WATADA, W. S. CONWAY, B. D. WHITAKER and C. E. SAMS
Biosynthesis of the heterocyst glycolipids in the cyanobacterium <i>Anabaena cylindrica</i>	771	A. GAMBACORTA, A. SORIENTE, A. TRINCONE and G. SODANO
Ecological Biochemistry		
Accumulation of the phytoalexin lettucein A and changes in 3-hydroxy-3-methylglutaryl coenzyme A reductase activity in lettuce seedlings with the red spot disorder	775	L. BESTWICK, M. H. BENNETT, J. W. MANSFIELD and J. T. ROSSITER
Biosynthesis		
Initiation of biosynthesis in <i>cis</i> polyisoprenes	779	Y. TANAKA, S. KAWAHARA, E. AIK-HWEE, K. SHIBA and N. OHYA
Biosynthesis of acyclic homoterpenes: enzyme selectivity and absolute configuration of the nerolidol precursor	785	J. DONATH and W. BOLAND
Chemotaxonomy		
A comparative study of the phenolic products in the heartwood of <i>Acacia karroo</i> from two different localities	791	E. MALAN and P. SWARTZ
Sesquiterpene lactones, a labdane and other constituents of <i>Urolepis hecatantha</i> and <i>Chromolaena arnottiana</i>	795	A. N. DE GUTIÉRREZ, C. A. N. CATALÁN, J. G. DÍAZ and W. HERZ
An alkaloid, coumarins and a triterpene from <i>Boronia algida</i>	801	S. D. SARKER, J. A. ARMSTRONG and P. G. WATERMAN
The systematic and evolutionary significance of exudate flavonoids in <i>Aeonium</i>	805	J. F. STEVENS, H. T. HART and E. WOLLENWEBER
Benzylisoquinoline alkaloids and flavonols from <i>Ocotea vellosiana</i>	815	W. S. GARCEZ, M. YOSHIDA and O. R. GOTTLIEB
Plant Chemistry		
Trigonelline, a leaf-closing factor of the nyctinastic plant, <i>Aeschynomene indica</i>	817	M. UEDA, M. NIWA and S. YAMAMURA
Analysis of structure of sugar-beet pectin by enzymatic methods	821	T. SAKAMOTO and T. SAKAI

Phenylpropanoids from <i>Aralia bipinnata</i>	825	JEH-JIAN HSIAO and HUNG-CHEH CHIANG
Iridoid glucosides from the leaves and stems of <i>Duranta erecta</i>	829	Y. TAKEDA, Y. MORIMOTO, T. MATSUMOTO, C. OGIMI, E. HIRATA, A. TAKUSHI and H. OTSUKA
Sesquiterpenoid emmotins from two <i>Poraqueiba</i> species	835	M. O. F. GOULART, E. DE S. BENTO, A. TRAINOTTI, R. J. ALVES, J. G. S. MAIA, G. G. DE OLIVEIRA and A. B. DE OLIVEIRA
Sesquiterpene lactones from <i>Michelia champaca</i>	839	U. JACOBSSON, V. KUMAR and S. SAMINATHAN
Antifungal melampolides from leaf extracts of <i>Smallanthus sonchifolius</i>	845	A. INOUE, S. TAMOGAMI, H. KATO, Y. NAKAZATO, M. AKIYAMA, O. KODAMA, T. AKATSUKA and Y. HASHIDOKO
10-Desmethyl-1-methyl-eudesmanes from <i>Ocotea corymbosa</i>	849	J. P. CHAVEZ, O. R. GOTTLIEB and M. YOSHIDA
Longipinene derivatives from <i>Stevia serrata</i>	853	E. SÁNCHEZ-ARREOLA, C. M. CERDA-GARCÍA-ROJAS, P. JOSEPH-NATHAN, L. U. ROMÁN and J. D. HERNÁNDEZ
Diterpenes from <i>in vitro</i> cultures of the liverwort <i>Jamesoniella autumnalis</i>	859	H. TAZAKI, J. ZAPP and H. BECKER
A rearranged taxane from the Himalayan yew	869	S. K. CHATTOPADHYAY, R. P. SHARMA, G. APPENDINO and P. GARIBOLDI
Taxayuntin E and F: two taxanes from leaves and stems of <i>Taxus yunnanensis</i>	871	QIN YUE, QI-CHENG FANG, XIAO-TIAN LIANG and CUN-HENG HE
Medicagenic acid saponins from <i>Aster batangensis</i>	875	YU SHAO, BINGNAN ZHOU, KAN MA, HOUMING WU, LONGZE LIN and G. A. CORDELL
Effect of diniconazole on sterol composition of roots and cell suspension cultures of fenugreek	883	C. CERDON, A. RAHIER, M. TATON and Y. SAUVAIRE
Stilbene glycosides from <i>Guibourtia tessmannii</i>	895	A. M. NYEMBA, T. NGANDO MPONDO, S. F. KIMBU and J. D. CONNOLLY
Lignans from the wood of <i>Aralia bipinnata</i>	899	JEH-JIAN HSIAO and HUNG-CHEH CHIANG
A xanthone substituted with an irregular monoterpene in cell suspension cultures of <i>Hypericum patulum</i>	903	K. ISHIGURO, M. NAKAJIMA, H. FUKUMOTO and K. ISOI
Isoflavonoids in roots of <i>Sophora secundiflora</i>	907	M. IINUMA, M. OHYAMA, T. TANAKA, Y. SHIRATAKI and C. L. BURANDT
Alkaloids and quassinoids of <i>Brucea mollis</i> var. <i>Tonkinensis</i>	911	Y. OUYANG, K. MITSUNAGA, K. KOIKE and T. OHMOTO
Short Reports		
Styrylpyrone glucosides from <i>Equisetum</i>	915	M. VEIT, H. GEIGER, B. KAST, C. BECKERT, C. HORN, K. R. MARKHAM, H. WONG and F.-C. CZYGAN
Roripamine, a sulphonylalkyl amine from <i>Rorippa indica</i>	919	YUN-LIAN LIN, WEI-YU TSAI and YUEH-HSIUNG KUO

Hemialboside, a hemiterpene glucoside from <i>Lamium album</i>	923	S. DAMTOFT and S. R. JENSEN
Two iridoid glucosides, 5- <i>O</i> -menthiafoloylkickxioside and kickxin, from <i>Kickxia dum.</i> species	925	N. HANDJEVA, L. TERSIEVA, S. POPOV and L. EVSTATIEVA
NMR chemical shift correlations in 16,17-dihydroxykauranoids: implication for stereochemical assignments	929	P. K. AGRAWAL, V. BISHNOI and A. K. SINGH
Abietane and clerodane diterpenes from <i>Salvia regia</i>	931	A. ORTEGA, J. CÁRDENAS, D. A. GAGE and E. MALDONADO
A taxane from the Himalayan yew, <i>Taxus wallichiana</i>	935	S. K. CHATTOPADHYAY and R. P. SHARMA
Patensin, a saponin from <i>Pulsatilla patens</i> var. <i>multifida</i>	937	WEN-CAI YE, BO-XIN OU, NINE-NING JI, SHOU-XUN ZHAO, TAO YE, M. A. MCKERVEY and P. STEVENSON
Ecdysteroids from <i>Penstemon venustus</i>	941	U. ROTH, M. KÖNIG and K. SEIFERT
A xanthone from pericarps of <i>Garcinia mangostana</i>	943	F. ASAI, H. TOSA, T. TANAKA and M. IINUMA
Two xanthones with a 1,1-dimethylallyl group in root bark of <i>Garcinia subelliptica</i>	945	M. IINUMA, H. TOSA, T. TANAKA, F. ASAI and R. SHIMANO
Damalachawin, a triflavonoid of a new structural type from dragon's blood of <i>Dracaena cinnabari</i>	949	U. HIMMELREICH, M. MASAOUD, G. ADAM and H. RIPPERGER
Book Reviews	953	
Journal Review	957	

Number 5

Growth and Metabolism

UV-induced cross-linking of abscisic acid to binding proteins	959	M. H. M. CORNELUSSEN, C. M. KARSEN and L. C. VAN LOON
Production and characterization of monoclonal antibodies against IIS storage protein from pea seeds	969	L. QUILLIEN, T. GABORIT and J. GUEGUEN
Effect of Ti(IV) on Fe activity in <i>Capsicum annuum</i>	977	M. CARVAJAL and C. F. ALCARAZ
Acidic peroxidases from suspension-cultures of sweet potato	981	S.-S. KWAK, S.-K. KIM, M.-S. LEE, K.-H. JUNG, I.-H. PARK and J.-R. LIU
Stimulation of lipase and <i>N</i> -acetyl- β -D- glucosaminidase activities in <i>Euphorbia characias</i> latex by contact of free fatty acids with roots	985	A. MOULIN and R. GIORDANI
Lysophosphatidic acid acyltransferase from immature coconut endosperm having medium chain length substrate specificity	989	H. MAELOR DAVIES, D. J. HAWKINS and J. S. NELSEN
Comparison of phytolacain R, a cysteine protease from <i>Phytolacca americana</i> , with papain	997	M. KANEDA, S. NAGATOME and T. UCHIKOBA
Purification and characterization of starch phosphorylase from <i>Cuscuta reflexa</i> filaments	1001	S. SRIVASTAVA, A. NIGHOJKAR and A. KUMAR
Chalcone synthase in the liverwort <i>Marchantia polymorpha</i>	1007	S. FISCHER, U. BÖTTCHER, S. REUBER, S. ANHALT and G. WEISSENBÖCK
Phosphodiesterase in cultured cells of <i>Mentha arvensis</i>	1013	T. NAKABAYASHI, Y. SHIMO, C. HONDA, W. KAMISAKO and Y. KIMURA
Reassessment of lipid composition of the diatom, <i>Skeletonema costatum</i>	1017	J.-P. BERGE, J.-P. GOUYGOU, J.-P. DUBACQ and P. DURAND

Ecological Biochemistry

- Changes in ferulic acid and lipid content in aphid-infested barley 1023 H. M. CABRERA, O. MUÑOZ, G. E. ZÚNIGA, L. J. CORCUERA and V. H. ARGANDOÑA
- Biotransformation of lignans: metabolism of (+)-eudesmin and (+)-magnolol in *Spodoptera litura* 1027 M. MIYAZAWA, H. KASAHARA and H. KAMEOKA
- Lepidimoide, an allelopathic substance in the exudates from germinated seeds 1031 K. YAMADA, T. ANAI and K. HASEGAWA
- Dibenzofuran phytoalexins from the sapwood tissue of *Photinia*, *Pyracantha* and *Crataegus* species 1033 T. KOKUBUN, J. B. HARBORNE, J. EAGLES and P. G. WATERMAN
- Four dibenzofuran phytoalexins from the sapwood of *Mespilus germanica* 1039 T. KOKUBUN, J. B. HARBORNE, J. EAGLES and P. G. WATERMAN
- Antifungal hydroxymethyl-phenols from the mycoparasite *Verticillium biguttatum* 1043 R. A. C. MORRIS, D. F. EWING, J. M. WHIPPS and J. R. COLEY-SMITH
- Polyphenols from *Eriosema tuberosum* 1049 WEI GUANG MA, N. FUZZATI, QING SHENG LI, CHONG REN YANG, H. STOECKLI-EVANS and K. HOSTETTMANN
- Guaraná (*Paullinia cupana*) rewards seed dispersers without intoxicating them by caffeine 1063 T. W. BAUMANN, B. H. SCHULTHESS and K. HÄNNI
- Biosynthesis of sulphoquinovosyldiacylglycerol by chloroplast fractions from pea and lettuce 1071 C. E. PUGH, T. HAWKES and J. L. HARWOOD
- Cell Culture and Biotechnology**
- Biotransformation of (–)- α -bisabolol by plant pathogenic fungus, *Glomerella cingulata* 1077 M. MIYAZAWA, H. NANKAI and H. KAMEOKA
- The biotransformation of 8-epicedrol and some relatives by *Cephalosporium aphidicola* 1081 E. GAND, J. R. HANSON and H. NASIR
- Bioconversion of rhododendrol by *Acer nikoense* 1085 T. FUJITA, H. HATAMOTO, T. IWASAKI and S. TAKAFUJI
- Bioactive Plant Products**
- Coumarins and anti-platelet aggregation constituents from *Zanthoxylum schinifolium* 1091 IH-SHENG CHEN, YUH-CHWEN LIN, IAN-LIH TSAI, CHE-MING TENG, FENG-NIEN KO, T. ISHIKAWA and H. ISHII
- Angelol-type coumarins from *Angelica pubescence* F. biserrata and their inhibitory effect on platelet aggregation 1099 JIANG-HUA LIU, SUI-XU XU, XIN-SHENG YAO and H. KOBAYASHI
- Steroidal saponins from the tubers of *Dichelostemma multiflorum* and their inhibitory activity on cyclic-amp phosphodiesterase 1103 T. INOUE, Y. MIMAKI, Y. SASHIDA, T. NIKAIIDO and T. OHMOTO
- Plant Chemistry**
- Iridoid mono- and diesters of D-glucopyranose from *Linaria japonica* 1111 H. OTSUKA
- Linalool and cineole type glucosides from *Cunila spicata* 1115 D. MANNS
- Identification of (+)- β -caryophyllene in essential oils of liverworts by enantioselective gas chromatography 1119 C. FRICKE, A. RIECK, I. H. HARDT, W. A. KÖNIG and H. MUHLE
- Eudesmanolides from *Melanoselinum decipiens* 1123 G. M. MASSANET, F. M. GUERRA, J. M. DORADO, Z. D. JORGE and P. VALERGA
- Sesquiterpene lactones and other constituents from *Hymenoxys richardsonii* and *H. subintegra* 1127 A. A. AHMED, O. SPRING, M. H. A. EL-RAZEK, N. S. HUSSEIN and T. J. MABRY

Norditerpene furan glycosides from <i>Tinospora cordifolia</i>	1139	V. D. GANGAN, P. PRADHAN, A. T. SIPAHIMALANI and A. BANERJI
Three diterpene dilactone glycosides from <i>Podocarpus nagi</i>	1143	LI-JANG XUAN, YA-MIN XU and SHENG-DING FANG
Taxanes from <i>Taxus yunnanensis</i>	1147	H. ZHANG, Y. TADEDA and H. SUN
Triterpenes from <i>Tripterigium wilfordii</i>	1153	T. MOROTA, CHUN-XIN YANG, H. SASAKI, WAN-ZHANG QIN, K. SUGAMA, KANG-LI MIAO, T. YOSHINO, LI-HONG XU, M. MARUNO and BING-HUI YANG
D:A-Friedo-24-noroleanane triterpenoids from <i>Tripterigium wilfordii</i>	1159	T. MOROTA, CHUN-XIN YANG, T. OGINO, WAN-ZHANG QIN, T. KATSUHARA, LI-HONG XU, Y. KOMATSU, KANG-LI MIAO, M. MARUNO and BING-HUI YANG
Triterpenes from the surface layer of <i>Poria cocos</i>	1165	T. TAI, T. SHINGU, T. KIKUCHI, Y. TEZUKA and A. AKAHORI
Triterpenoid glycosides from <i>Cephalaria transsylvanica</i>	1171	S. KIRMIZIGÜL, H. ANIL and M. E. ROSE
Triterpenoid glycosides from <i>Anemoclema glaucifolium</i>	1175	XING-CONG LI, CHONG-REN YANG, YU-QING LIU, R. KASAI K. OHTANI, K. YAMASAKI, K. MIYAHARA and K. SHINGU
Highly oxygenated coumarins from <i>Pelargonium sidoides</i>	1181	O. KAYSER and H. KOLODZIEJ
Dibenzocyclooctadiene lignans from <i>Kadsura japonica</i>	1187	N. OOKAWA, Y. IKEYA, K. SUGAMA, H. TAGUCHI and M. MARUNO
Structure simulation of two ellagitannins from <i>Quercus robur</i> L.	1193	N. VIVAS, M. LAGUERRE, Y. GLORIES, G. BOURGEOIS and C. VITRY
Synthesis of 5,8-dihydroxy-6,7-dimethoxyflavones and revised structures for some natural flavones	1201	T. HORIE, Y. KAWAMURA, H. YAMAMOTO, T. KITOU and K. YAMASHITA
Flavonoid glycosides and an anthraquinone from <i>Rumex chalepensis</i>	1211	A. HASAN, I. AHMED, M. JAY and B. VOIRIN
Pyrano- and dihydrofurano-isoflavones from <i>Milletia thonningii</i>	1215	W. A. ASOMANING, C. AMOAKO, I. V. OPPONG, W. R. PHILLIPS, I. ADDAE-MENSAH, E. Y. OSEI-TWUM, R. WAIBEL and H. ACHENBACH
Sesquiterpene alkaloids from <i>Tripterigium wilfordii</i>	1219	T. MOROTA, CHUN-XIN YANG, Y. IKEYA, WAN-ZHANG QIN, H. NISHIMURA, LI-HONG XU, M. ANDO, KANG-LI MIAO, M. MARUNO and BING-HUI YANG
Alkaloids from stem bark and leaves of <i>Peschiera buchtienii</i>	1223	M. AZOUG, A. LOUKACI, B. RICHARD, J.-M. NUZILLARD, C. MORETI, M. ZÈCHES-HANROT and L. LE MEN-OLIVIER
Alkaloids of <i>Galanthus elwesii</i>	1229	A. LATVALA, M. A. ÖNÜR, T. GÖZLER, A. LINDEN, B. KIVÇAK and M. HESSE
Short Reports		
Triterpenoid glycosides from <i>Adina rubella</i>	1241	SHI-YUE FANG, ZHI-SHENG HE, JING-HAI GAO and PING WANG
Physalin L, a 13,14-seco-16,24 cyclosteroid from <i>Physalis minima</i>	1245	G. SEN and H. D. PATHAK

2,4-Bis(4-hydroxybenzyl)phenol from <i>Gastrodia elata</i>	1247	N. NODA, Y. KOBAYASHI, K. MIYAHARA and S. FUKAHORI
Thomandersine and isothomandersine, 2-indolinone alkaloids from <i>Thomandersia Laurifolia</i>	1249	B. T. NGADJUI, H. TAMBOUE, J. F. AYAFOR and J. D. CONNOLLY
Book Reviews	1253	

Number 6

Announcement

ix

Review Article Number 105

Marine brown algae of family cystoseiraceae: chemistry and chemotaxonomy	1257	V. AMICO
--	------	----------

Growth and Metabolism

The reactivity of ascorbate with different redox states of leghaemoglobin	1281	S. MOREAU, A. PUPPO and M. J. DAVIES
Involvement of the oxidized-semiquinone couple in photo-reduction of algal flavodoxins	1287	L. J. ROGERS, A. J. SMITH and A. J. TURNER
<i>In vitro</i> peroxidase-catalysed oxidation of ferulic acid esters	1293	G. WALLACE and S. C. FRY
Myrosinase from roots of <i>Raphanus sativus</i>	1301	E. W. JWANNY, S. T. EL-SAYED, M. M. RASHAD, A. E. MAHMOUD and N. M. ABDALLAH
Limonoid glucoside β -glucosidase activity in lemon seeds	1305	T. A. RONNEBERG, S. HASEGAWA, C. SUHAYDA and Y. OZAKI
A 5,10-methylenetetrahydrofolate dehydrogenase: 5,10-methenyl-tetrahydrofolate cyclohydrolase protein from <i>Pisum sativum</i>	1309	C. D. KIRK, L. CHEN, H. C. IMESON and E. A. COSSINS
Softening of kiwifruit discs: effect of inhibition of galactose loss from cell walls	1319	R. J. REDGWELL and R. HARKER
Medium chain-length fatty acids in lipids of developing oil palm kernel endosperm	1325	E. WIBERG and M. BAFOR
Lipid evolution during development and ripening of peach fruits	1329	R. IZZO, A. SCARTAZZA, A. MASIA, L. GALLESCHI, M. F. QUARTACCI and F. NAVARI-IZZO
The lipid composition of cytosolic particles isolated from senescing bean cotyledons	1335	G. MCKEGNEY, K. YAO, S. GHOSH, A. HUFF, S. MAYAK and J. E. THOMPSON

Ecological Biochemistry

Columbianetin, a phytoalexin associated with celery resistance to pathogens during storage	1347	U. AFEK, S. CARMELI and N. AHARONI
Effect of crop development on biogenic emissions from plant populations grown in closed plant growth chambers	1351	J. H. BATTEN, G. W. STUTTE and R. M. WHEELER

Biosynthesis

Biosynthesis of xanthofusin, a tetronic acid metabolite of <i>Fusicoccum</i> sp.	1359	J. BREINHOLT, S. DAMTOFT, L. B. FREDERIKSEN, L. B. L. HANSEN and S. R. JENSEN
Are xanthosine and 7-methylxanthosine caffeine precursors?	1363	B. H. SCHULTHESS and T. W. BAUMANN

Chemotaxonomy

Trisubstituted hydroxycinnamic acid spermidines from <i>Quercus dentata</i> pollen	1371	M. BOKERN, L. WITTE, V. WRAY, M. NIMTZ and B. MEURER-GRIMES
Polysaccharides from seeds of <i>Strychnos</i> species	1377	M. M. CORSARO, I. GIUDICIANNI, R. LANZETTA, C. E. MARCIANO, P. MONACO and M. PARRILLI

Triterpene methyl ethers from <i>Palmae</i> epicuticular waxes	1381	S. GARCÍA, H. HEINZEN, C. HUBBUCH, R. MARTÍNEZ, X. DE VRIES and P. MOYNA
Long-chain polyprenyl acetates in <i>Murraya exotica</i>	1383	E. K. DESOKY
Alkaloids of <i>Picea breweriana</i>	1387	M. J. SCHNEIDER, S. BRENDZE and J. A. MONTALI
Plant Chemistry		
Verbascoside derivatives and iridoid glycosides from <i>Penstemon crandallii</i>	1391	L. D. ISMAIL, M. M. EL-AZIZI, T. I. KHALIFA and F. R. STERMITZ
Sesquiterpene lactone glycosides from <i>Crepis pyrenaica</i>	1395	W. KISIEL and B. BARSZCZ
Diterpenoid lactones from the roots of <i>Gynocardia odorata</i>	1399	B. P. PRADHAN, S. CHAKRABORTY, R. K. GHOSH and A. ROY
Steroids and terpenoids from the gum resin of <i>Ailanthus grandis</i>	1403	T. HUNG, H. STUPPNER, E. P. ELLMERER-MÜLLER, D. SCHOLZ, D. EIGNER and M. P. MANANDHAR
Emodin and emodinanthrone rhamnoside acetates from fruits of <i>Rhamnus prinoides</i>	1411	B. M. ABEGAZ and M. G. PETER
Glucosides of 2,5-dihydroxybenzyl alcohol from <i>Homalium longifolium</i>	1415	K. SHAARI and P. G. WATERMAN
Phenolic extractives from root bark of <i>Picea abies</i>	1423	H. PAN and L. N. LUNDGREN
Ochrolone a pyrene from <i>coelogyne ochracea</i>	1429	V. ANURADHA, N. S. PRAKASA RAO and M. UDAYABHASKAR
Pentaoxygenated xanthenes from <i>Bredemeyera floribunda</i>	1433	E. R. SILVEIRA, M. J. C. FALCÃO, A. MENEZES JR., D. G. I. KINGSTON and T. E. GLASS
Acylated anthocyanins from red <i>Hyacinthus orientalis</i>	1437	K. HOSOKAWA, Y. FUKUNAGA, E. FUKUSHI and J. KAWABATA
Acylated flavonol sophorotriosides from pea shoots	1443	F. FERRERES, E. ESTEBAN, R. CARPENA-RUIZ, M. A. JIMÉNEZ and F. A. TOMÁS-BARBERÁN
Flavonoids from <i>Artocarpus heterophyllus</i>	1447	CHUH-NAN LIN, CHAI-MING LU and PAO-LIN HUANG
Flavonoids, amidosulfoxides and an alkaloid from the leaves of <i>Glycosmis citrifolia</i>	1453	TIAN-SHUNG WU, FENG-CHU CHANG and PEI-LIN WU
Norditerpenoid alkaloids from <i>Delphinium peregrinum</i> var. <i>elongatum</i>	1459	G. DE LA FUENTE and L. RUIZ-MESÍA
Norditerpenoid alkaloids of <i>Delphinium munzianum</i>	1467	G. DE LA FUENTE, A. H. MERİÇLİ, L. RUIZ-MESÍA, A. ULUBELEN, F. MERİÇLİ and R. ILARSLAN
Steroid alkaloid glycosides from <i>Solanum robustum</i>	1475	H. RIPPERGER
Short Reports		
An elemandiolide from <i>Zinnia citrea</i>	1479	A. ORTEGA, A. VÁZQUEZ, R. GAVIÑO and E. MALDONADO
Harounoside a pentalongin hydroquinone diglycoside from <i>Mitracarpus scaber</i>	1483	H. HAROUNA, R. FAURE, R. ELIAS, L. DEBRAUWER, M. SAADOU, G. BALANSARD and G. BOUDON
Two alkaloids from <i>Incarvillea sinensis</i>	1485	YU-MING CHI, F. HASHIMOTO, WEN-MEI-YAN and T. NOHARA
Diterpene acetylxylosides from the exudate of <i>Conyza linearis</i>	1489	A. URZUA and L. MENDOZA
Errata and corrigenda	1493	