

CONTENTS

	Preface	v
1	Introduction	1
I.	ALKALOID CHEMISTRY AND DRUG THERAPY	
2	The Importance of the Solanaceae in Medicine and Drug Therapy J.G. Roddick	7
3	De Plantis Toxicariis e Mundo Novo Tropicales Commentationes XXXVI Phytochemical and Ethnopharmacological Notes on the Solanaceae of the Northwest Amazon R.E. Schultes and R.F. Raffauf	25
4	Chemistry, Co-evolution and Colonisation of Solanaceae Leaves by Ithomiine Butterflies K.S. Brown and S.A. Henriques	51
5	<i>Datura</i> Hybrids: Clonal Micropropagation and Hyoscyne Production at Low and High Altitude Cultivation in Ecuador P.E. Levy and E. Regalado	69
II.	SOLANACEAE SYSTEMATICS AND EVOLUTION	
6.	The Solanaceae since 1976, with a Review of its Biogeography W.G. D'Arcy	75
7	Gondwanan Elements of the Solanaceae D.E. Symon	139
8	Life Form and Branching within the Solanaceae A. Child and R.N. Lester	151
9	Chloroplast DNA and Systematics of the Solanaceae R. Olmstead and J. Palmer	161
III.	TAXONOMY AND EVOLUTION OF TRIBES AND GENERA (other than Solanum)	
10	Biogeographical Mapping: The Schwenckieae Example W.G. D'Arcy and C. Benítez de Rojas	169
11	Trichomes of Solanaceae Tribe Anthocercideae L. Haegi	181
12	<i>Datura</i> (Solanaceae) is a New World Genus D.E. Symon and L. Haegi	197
13	Old World <i>Withania</i> (Solanaceae): A Taxonomic Review and Key to the Species F.N. Hepper	211
14	The Genus <i>Schultesianthus</i> (Solanaceae): Leaf Anatomy and Taxonomic Synopsis L.M. Bernardello and A.T. Hunziker	229
15	Karyotype Diversity and Nuclear DNA Variation in <i>Cyphomandra</i> G.J. Pringle and B.G. Murray	247
16	The Breakdown of Self-incompatibility in <i>Lycopersicon hirsutum</i> C.M. Rick and R.T. Chetelat	253
		vii

IV. TAXONOMY AND EVOLUTION OF *SOLANUM* (other than domesticates)

- 17 **Synopsis of *Solanum* Section *Acanthophora*: A Group of Interest for Glycoalkaloids**
M. Nee 257
- 18 **A New Section for the Genus *Solanum* — Section *Cernuum* (Solanaceae)**
L.d'A.F. Carvalho and G.J. Shepherd 267
- 19 **Morphology of Indumentum and Trichomes in Species of *Solanum* Sections *Cernuum* and *Lepidotum* (Solanaceae)**
L.d'A.F. Carvalho and R.D. Machado 271
- 20 **Evolutionary Relationships of Tomato, Potato, Pepino and wild species of *Lycopersicon* and *Solanum***
R.N. Lester 283
- 21 **Intra- and Inter-specific Crossability and Fertility of Wild Tuber-bearing *Solanum* Species in the Series *Conicibaccata***
L.E. Lopez and J.G. Hawkes 303
- 22 **Cytology and Genome Constitution of Wild Tuber-bearing *Solanum* Species in the Series *Conicibaccata***
L.E. Lopez and J.G. Hawkes 327

V. DOMESTICATION

- 23 **The Evolution of Tropical American Root and Tuber Crops with Special Reference to Potatoes**
J.G. Hawkes 347
- 24 **The Cultivated Species of the Family Solanaceae in Cuba**
M. Esquivel and K. Hammer 357
- 25 **The Systematics of the Lesser Known Edible Solanaceae of the New World**
M. Nee 365
- 26 **Origin and Domestication of the Brinjal Egg-plant, *Solanum melongena*, from *S. incanum*, in Africa and Asia**
R.N. Lester and S.M.Z. Hasan 369

VI. BREEDING RESEARCH AND BIOTECHNOLOGY

- 27 **The Use of Wild Species for the Genetic Improvement of Brinjal Egg-plant (*Solanum melongena*) and Tomato (*Lycopersicon esculentum*)**
M.-C. Daunay, R.N. Lester and H. Laterrot 389
- 28 **Utilisation of *Solanum brevidens* to Transfer PLRV Resistance into the Cultivated Potato, *Solanum tuberosum***
N. Estrada R. 413
- 29 ***In vitro* Induction of Genetic Variability and Selection of Disease Resistant Plants in the Potato**
A. Sonnino, R. Penuela, P. Crino, L. Martino and G. Ancora 421
- 30 **The Use of *Physalis peruviana* Tissue Culture for Breeding and Selection**
O. Torres F., M. Perea, A. López, A. Salamanca and J. Mikan 429
- 31 **Evaluation of *in vitro* Alkaloid Production in Three Species of *Brugmansia* and Organogenesis from Leaf Explants**
F. García, M. Perea and L. de García 433

VII. CROP AGRONOMY

- 32 **Phenotypic Characterization of *Solanum tuberosum* Germplasm Bank**
A. Benítez E., J. Valenzuela 441
- 33 **Ecological Effects on the Environment of the Cultivated Potato**
B. Eraso S. 445
- 34 **Phytosanitary Aspects of the Potato in the Environment**
B. Eraso S. 449
- 35 **Agronomic Aspects of the Potato in the Plateau of the Colombian Andes**
J.A. Bernal R. 453

Subject Index

Taxonomic Index (Solanaceae)

THIRD INTERNATIONAL SYMPOSIUM ON

COLOMBIAN ORGANIC CHEMISTRY

CONGRESS SESSIONS

CONGRESS SPONSORS

CONTRIBUTORS TO THE SYMPOSIUM

VII. CROP AGRONOMY

32	Phenotypic Characterisation of Certain Accessions of the Lulo (<i>Solanum quitoense</i>) Germplasm Bank	
	A. Benítez E., J. Valencia A., E.I. Estrada S. and D. Baena	437
33	Ecological Effects on the Physiology of the Lulo, <i>Solanum quitoense</i>	
	B. Eraso S.	451
34	Phytosanitary Aspects of the Cultivation of the Lulo, <i>Solanum quitoense</i>, in Relation to the Environment and Cultivation Management	
	B. Eraso S.	455
35	Agronomic Aspects of the Cultivation of the Uchuva, <i>Physalis peruviana</i>, on the High Plateau of the Colombian Departments of Cundinamarca and Boyaca	
	J.A. Bernal R.	459
	Subject Index	461
	Taxonomic Index (Solanaceae)	469
	THIRD INTERNATIONAL SOLANACEAE CONGRESS	478
	COLOMBIAN ORGANISING COMMITTEE	478
	CONGRESS SESSIONS	479
	CONGRESS SPONSORS	480
	CONTRIBUTORS TO THIS PUBLICATION	481