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4

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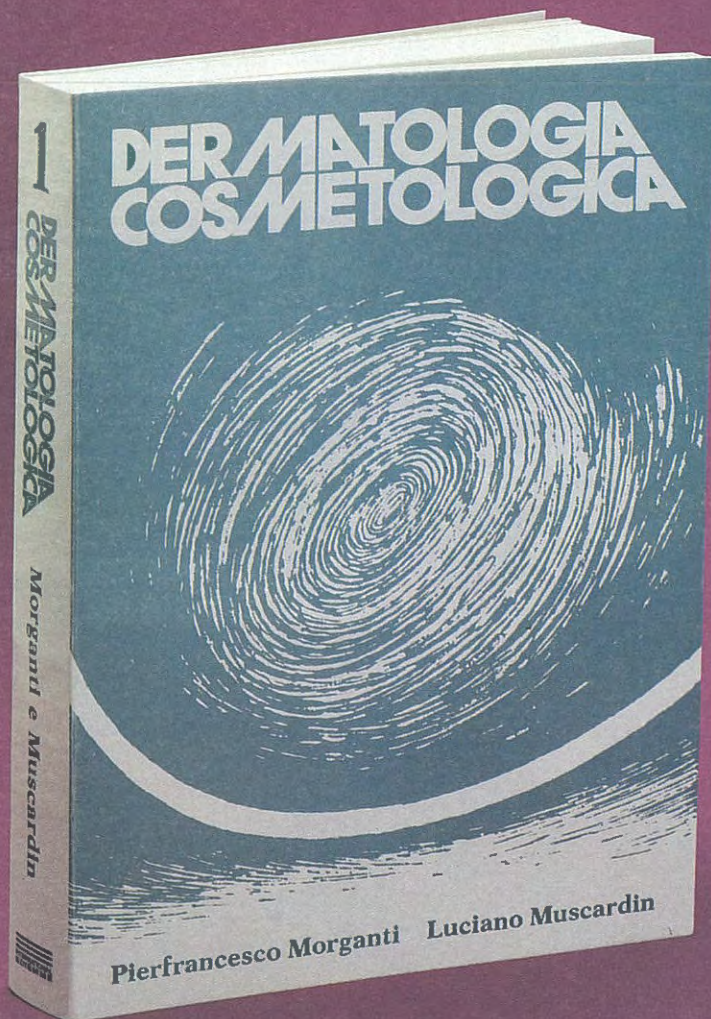
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A cura di P. Morganti e L. Muscardin
Ed. International Ediemme

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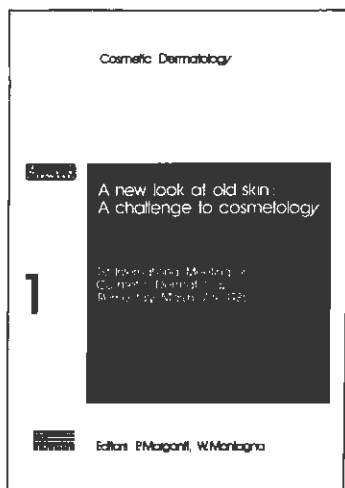
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1st International Meeting on Cosmetic Dermatology,
Rome, Italy, March 7-9, 1985

Editors: P. Morganti, W. Montagna



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Trimestrale di Dermatologia Cosmetologica Quarterly Review of Cosmetic Dermatology

Special Issue Dedicated to
*V World Congress
of
International Society of
Cosmetic Dermatology*

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OCTOBER 28, 1995



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International Society of Cosmetic Dermatology

V World Congress

PROGRESS IN COSMETIC DERMATOLOGY: FROM THE ETRUSCAN TO THE 21st CENTURY



October 26 - 29, 1995

Palazzo dei Congressi Montecatini Terme (PT) Italy

FINAL PROGRAMME

Under the high patronage of Ministero della Sanità

International Society of Cosmetic Dermatology

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WELCOME TO MONTECATINI

This 5th ISCD International Congress surely represents a milestone for the final consecration of Cosmetic Dermatology as an actual and real bridge between the Chemistry of Cosmeric products, which states the study, production and chemical-physical control of these high-tech products, and Dermatology which verifies their actual effectiveness at skin and cutaneous appendages level. As you can clearly see from the scheduled works, during these four intense study days, we will try to further explain the role of the new active principles which are recently used in cosmetics such as AHAs, ceramides, phospholipids and non-chemical sunscreens.

We will talk about the new technologies to improve and optimize the absorption of cosmetic active principles such as, for example, the Transdermal Cosmetic Delivery System. We will thoroughly describe the alternative technologies to the use of animals, the current check methods to classify as "safe" the different classes of cosmeric products, and the latest legislative measures adopted at European level to protect consumers.

A specific space will be also devoted to a cosmetic problem which concerns millions of people, such as cutaneous hyperpigmentations.

In fact, a whole round table will deal with the use of hydroquinone as a cutaneous lightener, deeply evaluating also all the toxicologic features which have been pointed out over the past few years. In fact, hydroquinone can be considered the only effective cutaneous lightener of which we now well know both the particular action mechanism and the side effects.

Finally, during this Congress, we will officially recognize a new branch of Cosmetology, that is Gynaecological Cosmetology, which will deal mainly with cosmetic products' activity at mucous membranes level.

In wishing everybody a profitable work, I would also like to underline the ecologic commitment we have undertaken as a further aim of this meeting. The Programme, Summaries and Certificates of attendance have been printed, in fact, only on environment-friendly paper, produced with the alternative use of the seaweeds from the lagoon of Venice and of mais corn, instead of wood pulp.

P. Morganti Ph.D.
ISCD & Congress Secretary General

ACKNOWLEDGEMENTS

The organizing committee of the 5th world congress of the international society of cosmetic dermatology is most grateful for the support of the following sponsors and contributors, without whose assistance this congress would not have been possible.

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DEFINITIONS

PLENARY LECTURES

Lectures of special interest are scheduled on Thursday October 26th Friday October 27th Saturday October 28th and Sunday October 29th morning.

Outstanding scientists internationally well-known has been selected for these lectures.

CONTROVERSIES IN DERMATOLOGY

They are short lectures of special interest to the general dermatological and cosmetic chemist.

MAIN SESSIONS AND SYMPOSIA

Special symposia are scheduled during the Congress, they will enable the participant to be informed of the most recent developments in Cosmetic Dermatology and Gynaecologic Cosmetology.

STRATEGIC COMMUNICATIONS

Presentations of important topics in Cosmetic Dermatology will be given during these scientific sessions by well-known specialists from university and industry.

ISCD MEETING

An ISCD meeting will be organized during the congress. Detailed information will be available on ISCD desk.

COURSES

During the courses the theoretical background of topics of major interest will be emphasized with practical demonstrations by experienced specialists.

Attendance is limited, therefore an application form is available it must be duly filled at the secretariat desk. Priority will be on a first come.

ROUND TABLE

There will be special round tables on topics of special and actual interest such as, Alternative methods to animal testing, Innovation in cosmetic safety, Current research in topical application of hydroquinone and Progress in gynaecological and andrological cosmetology.

FREE COMMUNICATIONS

All authors have been informed of details concerning their presentation. The schedule time of each Free Communication is 7 minutes, including discussion.

POSTER SESSIONS

Posters must be displayed on pannels between October 25th from 13 h00 to 19 h00 in the exhibition area. The poster cannot be removed until October 29th not before 15 h00.

The authors should be present in the exhibition area from 08.30 to 09.30 a.m. and from 16.00 to 17.00 p.m..

SATELLITE SYMPOSIUM

There will be a satellite symposium planned by term in conjunction with the congress organizing committee.

The greatest importance will be given to the therapeutic approach of the cosmetic crenodermatology to discuss presentation with those interested.

INFORMATION FOR AUTHORS

Abstracts will be included in the abstract book, only if the registration fee for at least one of the authors have been remitted and if the abstract form has been sent before October 1st, 1995.

• PLACE AND DATE OF THE CONGRESS

The Congress will take place in **Palazzo dei Congressi of Montecatini Viale G. Amendola, 2 - 51016 MONTECATINI TERME (PT) ITALY** from 26th to 29th October, 1995

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The Organizing Secretariat can suggest You the right restaurant for Yours special dietary requirement

• CLIMATE

Average temperatures in Italy range from 10° c (minimum) to 20° c (maximum) in October/November.

• DRESS

Dress will be informal for all congress sessions.

The most suitable dress for each social events will be suggested.

• ENQUIRIES

All scientific enquiries about the Congress should be addressed to the Scientific Secretariat Desk.

• SLIDES

All slides frames should measure 5x5 cm. (2x2 inches). Speakers will have the opportunity to view their slides prior to the presentation. Test-Projectors will be available in the Slide Centre. Videobeam is available in the Centre A

• OFFICIAL LANGUAGE

The official language of the meeting is English. Simultaneous translation from English into Italian is available on payment in the auditorium.

• PRE-REGISTRATIONS

Pre-registrations will be possible on Wednesday October 25th, 1995, from 9.00 a.m. to 19.00 p.m. at the Palazzo dei Congressi. Hotel's vouchers will be consigned at the arrival at the Palazzo dei Congressi.

• ATTENDANCE CERTIFICATE

The participants will collect their certificate on Sunday October 29th at the Organizing Secretariat.

• STANDS

The stands can be mounted from Tuesday 24th October and dismantled from Sunday evening 29th October.

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p. 2	09.00/09.30	COSMETICS IN THE ETRUSCAN WORLD G. Camporeale	
p. 3	09.30/10.00	THE BODY SURFACE IN ELDERLY PEOPLE A. Tosti	
p. 4	10.00/10.30	MOLECULAR BIOLOGY OF CUTANEOUS AGEING J. Uitto	
p. 5	10.30/11.00	ROLE OF EPIDERMAL CERAMIDES IN BARRIER FUNCTION B. Berra - E. Vegetti	
	11.00/11.15	BREAK	
p. 6	11.15/11.45	SKIN AND MUCOUS MEMBRANE ABSORPTION AND SAFETY ASPECTS F.H. Kemper	
p. 7	11.45/12.15	BIOLOGIC FUNCTIONS OF ALPHA-HYDROXYACIDS E.J. Van Scott	
p. 8	12.15/12.45	MOLECULAR MECHANISM OF SKIN AGEING: WHAT'S NEW? S. Majewski	
		CONTROVERSIES IN DERMATOLOGY	Centre A
p. 9/10	12.45/13.15	RETINOIC ACID VERSUS GLYCOLIC ACID C.E. Orfanos - E.J. Van Scott Chairman: B. Guarneri	
	13.15/14.15	LUNCH	
p. 11/12	14.30/15.00	DO RETINOIDS AND AHAs TREAT SKIN AGEING? E.J. Van Scott - H. Murad Chairman: A. Tosti	
OCTOBER 26, 1995		MAIN SESSIONS AND SYMPOSIA	Centre A
	15.00/16.00	<u>STRUCTURE AND FUNCTION OF THE SKIN AND MUCOUS MEMBRANES</u>	
p. 13	15.00/15.15	FUNCTION OF THE SKIN: WHAT'S NEW L. Celleno	
p. 14	15.15/15.30	FUNCTION OF THE HUMAN MUCOUS MEMBRANES: WHAT'S NEW M. De Luca	
p. 15	15.30/15.45	STRUCTURE OF THE SKIN AND MUCOUS MEMBRANES S. Zecchi	
	15.45/16.00	DISCUSSION	

	<u>16.00/17.00</u>	<u>MOLECULAR BIOLOGY</u>
p. 16	16.00/16.15	WHAT'S NEW IN MOLECULAR BIOLOGY OF THE SKIN J. Uitto
p. 17	16.15/16.30	WHAT'S NEW IN MOLECULAR BIOLOGY OF THE SKIN PIGMENTATION B. Berra
p. 18	16.30/16.45	WHAT'S NEW IN MOLECULAR BIOLOGY OF PROTEOGLYCANS G. Ronca
	16.45/17.00	DISCUSSION
	17.00/17.15	BREAK
		ROUND TABLE Centre A
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		Speakers:
p. 19		J. O'Donoghue Mechanistic toxicity studies with hydroquinone
p. 20		H.I. Maibach Dermatological benefits and action of hydroquinone
p. 21		P.A. Burke Percutaneous absorption and bioavailability of hydroquinone
	18.35/18.50	DISCUSSION
		ROUND TABLE Centre E
	<u>15.00/16.00</u>	<u>SKIN CULTURE TESTS IN COSMETIC DERMATOLOGY</u> <i>Chairman: G.Bossi</i>
		Speakers:
p. 22		M. Balls Alternative methods to animal testing
p. 23		G. Biagini Cell culture in cosmetology: a morphological glance
p. 24		R. Muzzarelli Cell cultures in the presence of chitosans and glycosaminoglycans
p. 25		N. Stark Policies of quality and management in cosmetic dermatology
	16.00/16.15	DISCUSSION

OCTOBER 26, 1995

**STRATEGIC COMMUNICATIONS IN COSMETIC
DERMATOLOGY**

Centre B

Chairmen: L. Andreassi / Y.K. Park / P. Santoianni

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p. 27	14.45/15.00	CLEANING EFFECTS OF SOAPS R. Wolf
p. 28	15.00/15.15	FATTY ACIDS DERIVATIVES TO REDUCE BIOACIDES IN COSMETIC PREPARATIONS H. Caupin
p. 29	15.15/15.30	ESTROGEN COMPOUNDS IN SKIN AGEING J.B. Schmidt
p. 30	15.30/15.45	GLYCOLIC ACID THERAPY: EVALUATION OF EFFICACY AND TECHNIQUES IN TREATMENT OF PHOTOAGED SKIN E.M. Kokoschka
p. 31	15.45/16.00	TRANSPLANTATION FOR REPIGMENTING VITILIGO M.R. Thissen / W. Westerhof
	16.00/16.15	DISCUSSION
	16.15/16.25	<i>BREAK</i>
		<i>Chairmen: B. Berra / O. Carlesimo / A.J. Rubins</i>
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p. 33	16.40/16.55	PHYSIOLOGICAL BENEFITS OF PHOSPHOLIPID BASED LAMELLAR EMULSIONS IN COSMETICS J. P. Arnaud
p. 34	16.55/17.10	A NEW CLASS OF COSMETIC ACTIVE COMPOUNDS: THE SKIN-IDENTICAL CERAMIDES H. Lambers
p. 35	17.10/17.25	THE INTEREST OF AMINOACID BIOVECTOR: LIPACIDE PVB New Anti-age N. Michel / M.C. Stoltz
p. 36	17.25/17.40	THE TREATMENT OF ACNE VULGARIS AND THE NORMALISATION OF GREASE SKIN BY PHOSPHATIDYLCHOLINE-BOUND LINOLEIC ACID IN A LIPOSOMAL FORMULATION M. Ghyczy / H.P. Nissen
p. 36/bis	17.40/17.55	DERMATOLOGIC LASER THERAPY: STATE OF THE ART T. Flynn
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OCTOBER 27, 1995

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p. 54	11.15/11.45	ROLE OF THE SKIN IMMUNE SYSTEM IN THE TRANSFORMATION OF XENOBIOTICS S. Moretti
p. 55	11.45/12.15	VITILIGO AND MELASMA: TWO "DIFFICULT TO TREAT" MELANIN PIGMENTARY DISORDER J.P. Ortonne

ROUND TABLE

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COSMETOLOGY morning session

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p. 57	12.30/12.45	THE SEBUM PRODUCTION IN PREGNANCY AND PUERPERIUM A. Cianci
p. 58	12.45/13.00	THE MENOPAUSAL SKIN C. Nappi
	13.00/13.15	DISCUSSION
	13.15/14.15	LUNCH

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	14.30/15.30	CUTANEOUS AGEING	
p. 59	14.30/14.45	WHAT'S NEW IN PHOTOAGEING R. Marks	
p. 60	14.45/15.00	THE ASSESSMENT OF CUTANEOUS AGEING M.C. Melli	
p. 61	15.00/15.15	WHAT'S NEW IN TRUE AGEING M. Noszczyk	
	15.15/15.30	DISCUSSION	
		ROUND TABLE	Centre A
	15.30/18.00	PROGRESS IN GYNAECOLOGIC AND ANDROLOGIC	
		COSMETOLOGY	afternoon session
		<i>Chairmen: M. Andreoli - S. Mancuso - F. Menchini Fabris</i>	
p. 62	15.30/15.45	WHAT'S NEW IN ENDOCRINE ASPECTS OF COSMETIC CONCERNS M. Andreoli	
p. 63	15.45/16.00	THE DIET OF MUCOUS MEMBRANES S. Mancuso	
p. 64	16.00/16.15	CORRELATION BETWEEN ENDOCRINE PATTERN AND SEBUM PRODUCTION M. Massobrio - A. Revelli	
	16.15/16.30	BREAK	
p. 65	16.30/16.45	DERMATOLOGIC ASPECTS IN POSTMENOPAUSE: EFFECTS OF HORMONE REPLACEMENT THERAPY S. Schonauer - E. Cicinelli	
p. 66	16.45/17.00	ANDROLOGIC COSMETOLOGY F. Menchini Fabris	
p. 67	17.00/17.15	THE AESTHETIC DAMAGE AFTER GYNAECOLOGICAL OPERATIONS FROM THE MEDICO-LEGAL POINT OF VIEW F. Tropea	
p. 68	17.15/17.30	P. ACNES: A NEW TARGET FOR HUMAN ANDROGENS F. Landi	
p. 69	17.30/17.45	USE OF VITAMIN-A GEL FOR THE PROPHYLAXIS OF VULVOVAGINITIS IN POST-PARTUM: A PILOT STUDY L. Armino	
	17.45/18.00	DISCUSSION	

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**STRATEGIC COMMUNICATIONS IN COSMETIC
DERMATOLOGY**

Centre B

Chairmen: S. Brenner / A. Rebora / G. Rondini

- p. 70 14.30/14.45 WATER AS A CRITICAL PARAMETER IN DERMATOLOGICAL
PREPARATION FOR SKIN HYDRATION
H.E. Junginger
- p. 71 14.45/15.00 BIOTRANSFORMATION ROUTES TO LIPID BASED SKIN
CARE INGREDIENTS
N. Lindner
- p. 72 15.00/15.15 THE ROLE OF MINERAL OIL IN COSMETIC PREPARATIONS
D.S. Morrison - R. Paulli
- p. 73 15.15/15.30 NATURAL COLOURS FOR NATURALLY COLOURED HAIR
K. Brown
- 15.30/15.45 DISCUSSION
- 15.45/15.55 *BREAK*

CONTROVERSIES IN DERMATOLOGY

Centre B

- p. 74/75 15.55/16.25 NATURAL COSMETIC FITS AND FACTS
F.H. Kemper - N. Loprieno
Chairman: J. Pace
- p. 76/77 16.25/16.55 ARE SUNSCREENS REALLY HELPFUL AND WHY?
R. Marks - G. Monfrecola
Chairman: Y. Kee Park

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**STRATEGIC COMMUNICATIONS IN COSMETIC
DERMATOLOGY**

Centre B

Chairmen: L. Celleno / S. Jabloska / P. Santoianni

- p. 78 16.55/17.10 SAFE AND EFFECTIVE UV PROTECTIONS USING INORGANIC
SUNSCREEN INGREDIENTS
S.R. Spruce
- p. 79 17.10/17.25 TOXICITY EVALUATION OF A NEW POLYMERIC ADDITIVE
FOR SUNSCREENS
J.V. Hagan
- p. 80 17.25/17.40 FULL SUN PROTECTION BY NO CHEMICAL SCREENS
C. Cipriani
- p. 81 17.40/17.55 FORMULATION AND INVESTIGATION OF STABILITY OF
SUNSCREEN EMULSION WITH MICRONIZED TITANIUM
DIOXIDE
S. Miljkovic

p. 82	17.55/18.10	THE EFFECT OF TRETINOIN ON THE MOLECULAR BIOLOGY OF SKIN AGEING M. Amer
p. 83	18.10/18.25	ATOPIC DERMATITIS IN CHILDHOOD: SAFETY AND EFFICACY OF A NEW AMMONIUM LACTATE 6% EMULSION AGAINST ITCHING AND CUTANEOUS XEROSIS A. Sparavigna
p. 84	18.25/18.40	KOJIC ACID: A NEW PRODUCT FOR AN OLD PROBLEM T.M. Lotti
p. 85	18.40/18.55	ADVANCES IN TUMESCENT LIPOSUCTION B. Cook - A. Montalvo
	18.55/19.10	DISCUSSION

OCTOBER 27, 1995		COURSES	Centre C
	<u>14.30/16.00</u>	<u>ECONOMICS OF PRIVATE PRACTICE</u>	
p. 86		• WHY TAKING INTEREST IN COSMETIC DERMATOLOGY M. Puissegur-Lupo	
p. 87		• WHAT IS WRONG IN ECONOMICS OF PRIVATE PRACTICE L.C. Parish	
p. 88		• HOW TO TRANSFORM A DERMATOLOGIST INTO A MANAGER E. Chiacchierini	
	<u>16.00/17.30</u>	<u>COSMETOLOGY IN THE SPA</u>	
p. 89		• COSMETOLOGY IN THE SPA: BASIC DATA L.C. Parish	
p. 90		• COSMETOLOGY OF SULPHUROUS WATERS I. Ghersetich	
p. 91		• MUDS IN COSMETOLOGY J. Olafsson	
		COURSES	Centre D
	<u>14.30/16.00</u>	<u>PEELINGS</u>	
p. 92		• PEELINGS FOR CLOASMA A. Katsambas	
p. 93		• PEELINGS IN THE TREATMENT OF ACNE S. Chimenti	
p. 94		• WHICH PRODUCT FOR THE BEST PEELING H. Murad	
	<u>16.00/17.30</u>	<u>COLLAGEN IMPLANTS</u>	
p. 95		• COLLAGEN IMPLANT: THE HYSTORY FROM THE BASIC TECHNIQUE TO THE ADVANCE SINERGY WITH GLYCOLIC ACID G. Sito	
p. 96		• HOW TO MANAGE PAIN IN COLLAGEN IMPLANTS: COMPARISON OF MOST USED ANESTHESIA TECNQUES M. Benci	

OCTOBER 27, 1995		SATELLITE SYMPOSIUM	Portoghési Hall
	08.45/13.05	<u>SPAS, NATURAL HEALTH, AND COSMETIC CRENODERMATOLOGY</u>	
	08.45/09.00	WELCOME PRESIDENT P.F. Bernacchi (General Manager Terme di Montecatini) SCIENTIFIC CHAIRMAN M.M. Montenero M.D. (Vicepresident of Medical and Regulatory affairs " Salus Tour Inc. " U.S.A.)	
p. 97	09.00/09.15	THE SCIENTIFIC BASIS OF THE COSMETIC CRENODERMATOLOGY T.M. Lorti	
p. 98	09.15/09.30	THE RESPONSE OF THE AGEING PROCESS TO THE COMBINED FACTOR OF WATER AND MUDTHERAPY A. Bertero	
p. 99	09.30/09.50	THE COSMETIC CRENODERMATOLOGY IN ITALY S. Bellometti	
p. 100	09.50/10.05	COSMETIC CRENODERMATOLOGY IN ISRAEL R. Wolf	
p. 101	10.05/10.20	THE COSMETIC CRENODERMATOLOGY IN BULGARIA AND IN THE EASTERN EUROPE S. Vassileva	
p. 102	10.20/10.35	THE COSMETIC CRENODERMATOLOGY IN GERMANY B.R. Balda	
p. 103	10.35/10.50	THE COSMETIC CRENODERMATOLOGY IN FRANCE P. Karam	
p. 104	10.50/11.05	THE MEANING OF THE COSMETIC CRENODERMATOLOGY IN THE U.S.A. 's SPAS L.C. Parish	
	11.05/11.20	COFFEE BREAK	
p. 105	11.20/11.35	QUALITY OF LIFE AFTER THE TREATMENTS IN THE SPA RESORTS A. Katsambas	
p. 106	11.35/11.50	WHY DO WE FEEL BETTER IN THE SPA? J. Rosenberg	
p. 107	11.50/12.05	ROLE OF THE TERME DI MONTECATINI CRENOTHERAPY IN THE TREATMENT OF HYPERCHOLESTEROLEMIA AND OBESITY A. Capurso	

p. 108	12.05/12.20	HOW TO LOOK YOUNGER IN SPAS M. Amer
p. 109	12.20/12.35	THE APPLICATION OF THE COSMETIC CRENODERMATOLOGY ON THE MARKET PRODUCT Halston Borghese Inc.
p. 110	12.35/12.50	ARE WE READY FOR A GRANT APPLICATION TO THE NIH (NATIONAL INSTITUTE OF HEALTH) ALTERNATIVE MEDICINE DIVISION L. Millikan
p. 111	12.50/13.05	CRENOTHERAPY, MUDTHERAPY AND BALNEOLOGY IN THE 2000: CURRENT ITALIAN LEGISLATIONS FOR A FUTURE INTERNATIONAL MARKET M. Condorelli

HONORARY COMMITTEE

- C.A. BARTOLETTI (I)
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- P. MORGANTI (I)
- E. PANCONESI (I)
- J. UITTO (USA)

OCTOBER 28, 1995

PLENARY LECTURES

Centre A

Chairmen: B. Giannotti / L.C. Parish / E. Van Scott

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| p. 112 | 08.30/09.00 | NON-INVASIVE ACTIVITY EVALUATION IN COSMETIC DERMATOLOGY
P. Santoianni |
| p. 113 | 09.00/09.30 | HUMAN MODELS FOR TESTING DERMATOLOGICAL PRODUCTS AND COSMETICS
W. Schalla |
| p. 114 | 09.30/10.00 | COSMETIC AS COMPLEMENTARY PRESCRIPTION TO DERMATOLOGICALS
L.C. Parish |
| p. 115 | 10.00/10.30 | NAIL PROBLEMS IN COSMETIC DERMATOLOGY
R.P.R. Dawber |
| p. 116 | 10.30/11.00 | SKIN TURGOR, ELASTICITY AND LYMPHATICS: AGE CHANGES
T.J. Ryan |
| | 11.00/11.15 | <i>BREAK</i> |
| p. 117 | 11.15/11.45 | BIOLOGICAL FUNCTIONS AND THERAPEUTIC PROPERTIES OF UREA
W. Raab |
| p. 118 | 11.45/12.15 | TREATMENT OF AGEING AND PHOTOAGEING OF THE SKIN
C. Jacobson |

CONTROVERSIES IN DERMATOLOGY

Centre A

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| p. 119/120 | 12.15/12.45 | DERMOABRASION VERSUS CHEMICAL PEELINGS
A. Rubins - P. Teofoli
<i>Chairman: A. Katsambas</i> |
| p. 121/122 | 12.45/13.15 | EFA TREATMENTS IN COSMETIC DERMATOLOGY
S. Mancuso - P. Karam
<i>Chairman: P. Morganti</i> |
| | 13.15/14.15 | <i>LUNCH</i> |

14.30/15.30	<u>PEDIATRIC COSMETOLOGY</u>
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p. 123	14.30/14.45	BASIC ASPECTS OF PEDIATRIC COSMETOLOGY P. Morganti - L. Tiberi
p. 124	14.45/15.00	HOW TO MAKE SUNLIGHT RISKLESS FOR CHILDREN G. Titti - M. Bonci
p. 125	15.00/15.15	THE DERMATOLOGICAL ASPECTS OF PEDIATRIC COSMETOLOGY G. Fabrizi
	15.15/15.30	DISCUSSION
	15.30/16.30	<u>DIET AND SKIN</u>

p. 126	15.30/15.45	ROLE OF DIETARY FATTY ACIDS H.P. Nissen
p. 127	15.45/16.00	ESSENTIAL FATTY ACIDS IN COSMETIC DERMATOLOGY: WHAT'S NEW E. Turchetto
p. 128	16.00/16.15	DIET IN SKIN DISEASES WITH COSMETIC CONCERN M. Da Silva
	16.15/16.30	DISCUSSION
	16.30/16.45	BREAK

16.45/17.55	FREE COMMUNICATIONS / 7 min. each
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POSTERS DISCUSSION	Centre A
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Chairmen: M. Amer / C. Cipriani

p. 129		MICROABRASION VERSUS GLYCOLIC ACID IN POSTACNE ATROPHIC SCARS A. Loschiavo
p. 130		NON INVASIVE EVALUATION OF CUTANEOUS REACTIONS INDUCED BY GLYCOLIC ACID L. Mantovani
p. 131		CHARACTERIZATION AND USE OF RECONSTITUTED HUMAN SKIN IN TOXICITY TEST P.P. Parnigotto

p. 132	THE MECHANISM OF ACTION OF RETINOIDS IN THE TREATMENT OF PHOTOAGED SKIN M. Noszczyk
p. 133	TOPICAL TREATMENT FOR ANDROGENETIC ALOPECIA (AGA) WITH HORMONAL PHENIATRIC E.M. Kokoschka
p. 134	THE CARBONIC ANHYDRASES AND THEIR ROLE IN IONIC AND GASEOUS EXCHANGES AND IN FLUID HOMEOSTASIS: IMPLICATIONS IN COSMETIC DERMATOLOGY F. Botrè - C. Botrè
p. 135	PROBLEMS OF DIAGNOSE COSMETIC CONTACT DERMATITIS (CD): PATCH TEST AND PRODUCT USE TEST AT THE SITE OF ORIGINAL ERUPTION G. Vidovic Zajic
p. 136	OFFICE PROCEDURES IN AESTHETIC FACIAL SURGERY C. Grassi
p. 137	IN VITRO AND IN VIVO TESTING OF THE EFFICACY OF PREPARATIONS FOR SKIN PROTECTION Z. Nidzovic
p. 138	LIPOSCULPTURE OF THE LOWER LIMB UNDER PNEUMATIC TOURNIQUET. REVIEW OF 50 CASES K. Chérif-Zahar - S. Hasbellaoni - J.J. Bensenane - J.C. Scialom
p. 138/his	IN VITRO RECONSTRUCTED CORNEA: THREEDIMENSIONAL MODEL FOR TOXICOLOGICAL TESTS P.P. Parnigorto
p. 138/ter	HAIR BULBAR DYSTROPHIES: A NEW TOOL IN THE MICROSCOPIC STUDY P. Teofoli - M. Salin
17.55/18.15	POSTERS DISCUSSION

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**STRATEGIC COMMUNICATIONS IN COSMETIC
DERMATOLOGY** **Centre B**

Chairmen: B.R. Balda / A. Giannetti / B. Guarneri

- | | | |
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| p. 139 | 14.30/14.45 | THE ROLE OF IRON IN FREE RADICAL-INDUCED SKIN INFLAMMATION
P.T. Pugliese |
| p. 140 | 14.45/15.00 | COSMETIC PREPARATION: ACTUAL TOXICOLOGICAL ASPECTS
M.F. Wooder |
| p. 141 | 15.00/15.15 | STATUS COSMETICUS VERSUS SKIN HYPERSENSITIVITY
M. J. Rapaport |
| p. 142 | 15.15/15.30 | A NEW SPRAY SYSTEM ENVIRONMENTALLY FRIEND
N. Allegri |
| | 15.30/15.45 | DISCUSSION |
| | 15.45/15.55 | BREAK |
| <i>Chairmen: L. Millikan / V. Ruocco / G. A. Vena</i> | | |
| p. 143 | 15.55/16.10 | COSMETOLOGY AND SPORT
M. Tomassini - D.P. Shrestha |
| p. 144 | 16.10/16.25 | A CASE OF DIET-RELATED PEMPHIGUS
V. Ruocco - S. Brenner - M. Lombardi |
| p. 145 | 16.25/16.40 | SUITABILITY OF EMULSIFIERS IN NORMAL AND IN SENSITIVE SKIN
H.U. Krachter |
| p. 146 | 16.40/16.55 | RESULTS OF A NEW THERAPEUTIC PROTOCOL IN VITILIGO USING PHOTOTHERAPY AND A TOPIC COMPOUND
P. Righi |
| p. 147 | 16.55/17.10 | BIOMECHANICAL PROPERTIES OF HUMAN SKIN AND PLASMA LEVELS OF OXIDANTS AND ANTIOXIDANT: VARIATIONS BETWEEN AGE AND SEX AND POSSIBLE CORRELATIONS
G. Moretti |
| p. 148 | 17.10/17.25 | BIOCHEMICAL STUDIES ON A NOVEL ANTIOXIDANT FROM LEMON OIL
V. Calabrese |
| | 17.25/17.40 | DISCUSSION |

OCTOBER 28, 1995		COURSES	Centre C
	<u>14.30/16.00</u>	<u>HAIR REPLACEMENT IN THE OFFICE</u>	
p. 149		• HOW TO SELECT THE RIGHT HAIR REPLACEMENT TECHNIQUE FOR THE SINGLE PATIENT V. Gambino	
p. 150		• LIMITS OF HAIR REPLACEMENT V. Giannotti	
p. 151		• WHEN THE DERMATOLOGIST IS AGAINST HAIR REPLACEMENT S. Calvieri	
	<u>16.00/17.30</u>	<u>DRY AND OILY SKIN</u>	
p. 152		• PRACTICAL TREATMENT OF DRY SKIN W. Raab	
p. 153		• PRACTICAL TREATMENT OF OILY SKIN B. Guarneri	
p. 154		• PRACTICAL TREATMENT OF AGED SKIN L. Celleno	
		COURSES	Centre D
	<u>14.30/16.00</u>	<u>PHOTODERMATOLOGY</u>	
p. 155		• PHOTODERMATOLOGY: COSMETOLOGICAL ASPECTS P. Santoianni	
p. 156		• WHEN THE SUN IS A FRIEND OF THE SKIN N.K. Tsankov	
p. 157		• UVA TANNING: RISKS AND BENEFITS M. Lomuto	
	<u>16.00/18.15</u>	<u>CAMOUFLAGE</u>	
p. 158		• CAMOUFLAGE: ALLERGOLOGIC CONCERNS S. Brenner	
p. 159		• CAMOUFLAGE: WHEN IT IS NECESSARY C. Oriente Biondi	
p. 160		• INGREDIENTS FOR CAMOUFLAGE T. De Monte	
p. 161		• CAMOUFLAGE: PRACTICAL APPLICATION D. Tsampau	

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PLENARY LECTURES

Centre A

Chairmen: S. Jablonska / C.E. Orfanos / J. Uitto

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| p. 162 | 08.15/08.45 | TREATMENT OF STABLE VITILIGO WITH AUTOLOGOUS EPIDERMAL GRAFTING AND PUVA (PSORALEN PLUS UVA)
Y.K. Park |
| p. 163 | 08.45/09.15 | PRODUCTION AND FUNCTION OF CYTOKINES AND THEIR SKIN RECEPTORS
R.Paoletti - E. Corsini |
| p. 164 | 09.15/09.45 | PROTEOGLYCANS: WHAT'S NEW IN COSMETOLOGY
T.M. Lotti |
| p. 165 | 09.45/10.15 | CONTACT ALLERGY TO COMPOSITAE PLANTS - IN RELATION TO NATURAL COSMETICS
K.E. Andersen |
| | 10.15/10.30 | <i>BREAK</i> |
| p. 166 | 10.30/11.00 | METHODS OF QUANTIFICATION OF HAIR LOSS: A CRITICAL REVIEW
A. Rebora |
| p. 167 | 11.00/11.30 | WATER INSTEAD OF SOAP?
I. Ghersetich |

CONTROVERSIES IN DERMATOLOGY

Centre A

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| p. 168/169 | 11.30/12.00 | PROPOSALS FROM THE SOCIETIES OF AESTHETIC MEDICINE
C.A. Bartolerti - N. Scuderi
<i>Chairman: P. Santoianni</i> |
| p. 170/171 | 12.00/12.30 | PSYCHE AND SKIN
E. Panconesi - R. Wolf
<i>Chairman: A. Giannetti</i> |

12.30/13.00

CLOSING LECTURES

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| p. 172 | | PRESENT STATUS AND FUTURE PROSPECTS IN COSMETIC DERMATOLOGY
C.E. Orfanos |
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p. 174	08.15/08.30	COSMETIC CRENODERMATOLOGY IN THE DEAD SEA R. Wolf	
p. 175	08.30/08.45	IS THERE ANY ALLERGOLOGICAL RISK RELATED TO CRENODERMATOLOGY? G.A. Vena	
	08.45/09.00	DISCUSSION	
	09.00/10.00	<u>BIOTECHNOLOGIES IN COSMETIC DERMATOLOGY</u>	
p. 176	09.00/09.15	BIOTECHNOLOGIES IN COSMETIC DERMATOLOGY: THE STATE OF THE ART J. Serup	
p. 177	09.15/09.30	SUN PROTECTION FACTORS: ASSESSMENT IN THE SKIN L. Andreassi	
p. 178	09.30/09.45	BIOTECHNOLOGICAL EVALUATION OF THE ACTIVITY OF THE COSMETIC INGREDIENTS IN THE SKIN S. Seidenari	
	09.45/10.00	DISCUSSION	
	10.00/10.15	BREAK	
		ROUND TABLE	Centre B
	10.15/12.15	<u>COSMETIC SAFETY EVALUATION</u> <u>(Innovation in Cosmetic Safety and EU regulation)</u> <i>Chairmen: F.H. Kemper / N. Loprieno</i> Speakers:	
p. 179		N. Loprieno The Safety Evaluation of Cosmetic ingredients and the EU/CEC Guidelines	
p. 180		L.Celleno The biological cosmetic activity for EC Dossier	
p. 181		R. Macmillan The European Cosmetic Industry and the Sixth Amendment to EU-Cosmetic Regulation	
p. 182		G.N. McEwen The Cosmetic Regulation in the USA and protection of Consumers	

p. 183	M. Bernard The Cosmetics Directive and the 6th Amendment - Contents and Progress
p. 184	W. Matthies Evaluation of cosmetic product safety without animal testing acc. to 6th amendment of EC-directive
p. 185	G. Schmitt Clinical protocol in Cosmetic Dermatology
12.15/12.30	DISCUSSION
OCTOBER 29, 1995	COURSES Centre C
<u>08.30/10.00</u>	<u>LYMPHODRENAGE</u>
p. 186	• THE LYMPHATICS: HOW DO THEY WORK IN THE SKIN? T.J. Ryan
p. 187	• PRACTICE OF LYMPHODRENAGE ON THE PATIENT D. Giardini
p. 188	• LYMPHATIC DISEASES OF COSMETOLOGICAL INTEREST L. Rusciani
<u>10.00/12.00</u>	<u>COSMETIC NEWS</u>
p. 189	• NEW PRACTICAL TREATMENTS IN SKIN AGEING M. Monti
p. 190	• PRACTICAL CHOICES IN TREATING CELLULITIS T.M. Lotti
p. 191	• HOW TO USE COSMETICS IN THE OFFICE E. Mignini
p. 192	• NEW REGULATORY ISSUES AND FUTURE PERSPECTIVES IN COSMETIC RESEARCH A. Ceccherini-Nelli
<u>12.00/14.30</u>	<u>COSMETIC DERMATOLOGY AND THE MEDIA</u>
p. 193	• HOW TO INFORM PROPERLY IN COSMETIC DERMATOLOGY L. Onder
p. 194	• HYPOTHESIS FOR A NEW COMMUNICATION STRATEGY OF THERMALISM M. Zulberti
p. 195	• TOURISM AND FITNESS O. Bevilacqua
p. 196	• CUTANEOUS OBJECTIVE EVALUATIONS AND THE MEDIA G. Dell'Eva - M. Burrioni - T.M. Lotti
p. 197	• SCIENTIFIC POPULARIZATION OF COSMETICS P. Morganti - M. Trovato

POSTERS

- p. 198 • USE OF KOJIC ACID IN SKIN HYPERPIGMENTATION
A. Corbo
- p. 199 • "HAIR KNOTS" AS A CAUSE OF PSEUDOFOLLICULITIS OF THE LEGS: A VIDEO-MICROSCOPE STUDY
R. Strumia - C. Roveggio
- p. 200 • EVALUATION OF PHYSICAL SUNSCREENS IN COSMETIC EMULSIONS
A. Semenzano - R. Austria - A. Santangelo - A. Bettero
- p. 201 • THE BODY COSMETIC PRODUCTS: ECONOMIC ANALYSIS OF THE DISTRIBUTION AND CONSUMPTION
R. Jirillo - A. Ghi
- p. 202 • INNOVATIVE PHYTOCOSMETIC PRODUCTS
A. Cristoni - P. Morazzoni - E. Bombardelli
- p. 203 • AGE-RELATED REGIONAL VARIATIONS OF HUMAN SKIN BLOOD FLOW RESPONSE TO HISTAMINE
E. Tur - S. Brenner
- p. 204 • CLINICAL AND LABORATORY INVESTIGATIONS ON TWO COMMERCIALY AVAILABLE BABY WIPES
C. Feliciani - M. Di Carlantonio - M. Bellucci - R. Guarracino - P. Amerio
- p. 205 • APPLICATION OF THERMODYNAMIC IN TREATMENTS OF UNAESTHETICISM
G. Marineo
- p. 206 • SAFETY ASSESSMENT OF IRRITATION ON HUMAN SKIN: AN ALTERNATIVE METHOD FOR SAFETY TESTING AND VALIDATION STUDIES
A. Vasselli - M.V. Tolaini - G. Ferla - G. Serafini - L. Celleno
- p. 207 • DEVELOPMENT AND APPLICATION OF BIOSENSORS TO THE ANALYSIS OF COSMETIC FORMULATIONS: BIOCHEMICAL AND ECONOMICAL ASPECTS
S. Botrè - R. Jirillo - F. Mazzei
- p. 208 • ANTI-CELLULITIS TRANSDERMAL DELIVERY SYSTEM: ANALYSIS OF THE ACTIVE INGREDIENTS
M. Icare - P. Morganri - L. Tiberi
- p. 209 • TOPICAL SKIN ACTIVITY OF NEW AHAs DERIVATIVES: AN IN VITRO STUDY AS SAFETY TEST.
G. Ricotti - R. Solmi - M.G. Tucci - G. Mattutini - G. Biagini

Note: Authors are requested to be available for discussion near their poster on october 28th, 1995

GENERAL INFORMATION

REGISTRATION FEES (to be paid in US \$ or the equivalent in Italian lire)

The registration fee must be sent together with the registration form to the Convention Bureau.

FEES	ONLY ONE PARTICIPANT / STUDENT PER FORM	before September 1, 1995		after September 1, 1995
	PARTICIPANTS			
	ISCD MEMBERS	US \$ 250		US \$ 325
	ISCD NON MEMBERS	US \$ 350		US \$ 450
	ACCOMPANYING PERSONS	US \$ 50		US \$ 70
	STUDENTS* / TECHNICAL COSMETOLOGISTS BEAUTICIANS**	US \$ 200		US \$ 250
	1 DAY REGISTRATION	US \$ 150		
	COURSES	US \$ 50		US \$ 60

(*) Student/technical cosmerologists registration rate will be guaranted only to those who can demonstrate their position by enclosing an official statement from their Head of Department or Institute.

(**) Beauticians have to demonstrate their position by enclosing an official statement from the director of the Journal *Les Nouvelles Esthetiques*.

Please note that the deadline for receipt of registration fees at normal rate is September 1, 1995. The late enrollment fee will be charged even if the Registration Form (without payment) has been received before that date.

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COMMERCIAL EXHIBITION

The exhibition is open to all companies involved in the research and development of dermatological and ethical cosmetic products, to medical publishers, to instrument manufactures, to professional and educational bodies in the field of cosmetic dermatology and to organizations promoting other relevant congress focusing on dermatology. The Exhibition Prospectus which gives full details of the exhibition space is available from the Convention Bureau.

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Total Room deposit US \$ _____ (for each reservation fee)

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• HOW TO ARRIVE TO MONTECATINI TERME

International Airport of Pisa 55 Kms. from Montecatini, has daily flights from London, Paris and Frankfurt. Excellent services to Rome and Milan for connection with other international flights.

International Airport of Florence 40 Kms. from Montecatini, has flights from Milan, Rome, Bruxelles, Paris, Nice, Barcelona, Lugano, Zurich, Munich, Cologne, Stuttgart, Vienna, London, Amsterdam.

Rail services Train service to Florence and Pisa railway stations, for connection with all Tee and Intercity trains.

Autostrada A 11 Montecatini is on the motorway that connects Northern and Southern Italy with Tyrrhenian coast. This motorway takes to Florence and Pisa (30 minutes).

From Montecatini it is easy to drive to all the main Historical cities of Tuscany.

Bus connection An hourly bus service connects Montecatini to Florence, Lucca and Pisa.

SOCIAL PROGRAMME

Please fill in the Social Programme Form in order to guarantee your ticket reservation.

ONLY ONE PARTICIPANT/STUDENT PER FORM	DATE	FEE	NUMBER OF PERSONS*
1. WELCOME RECEPTION	October 26	Offered	
2. GUIDED VISIT TO THE SPAS	October 28	Offered	
3. EVENING GALA DINNER	October 28	US \$ 75	
4. COURSE		US \$ 50	
5. CONCERT	October 27	Offered	

26th WELCOME RECEPTION

The Opening ceremony will take place on 26th at about 19.30 in the Blio Hall (II Floor) and it is a get-together reception serving cheese and wine in the 3 Floors on the Palazzo dei Congressi.

27th CONCERT

The concert performed by the Orchestra of Credito Cooperativo della Valdinievole is directed by M^o Prof. Giorgio Giorgetti in the Blio Hall at the Palazzo dei Congressi at h. 9.15. p.m. and it is offered by Convention Bureau.

27th OCTOBER

The Satellite Symposium SPAS, NATURAL HEALT AND COSMETIC CRENODERMATOLOGY is offered by Società Terme di Montecatini.

28th OCTOBER

The Gala dinner will take place in Villa Rospigliosi (only 20 minutes by car). We kindly ask You to pre-register at the Organizing Secretariat.

The meeting point is Viale Verdi in front of the Town Hall where we have reserved a bus leaving h. 8.00 p.m.

The dress for the night is formal: black suit for gentlemen and evening dress for ladies.

APPLICATION FOR ISCD MEMBERSHIP

INTERNATIONAL SOCIETY OF COSMETIC DERMATOLOGY

a non - profit Association

APPLICATION FOR MEMBERSHIP

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<i>Controversies in dermatology</i>	<i>p.9 - p.12</i>
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<i>Round Table "Hydroquinone current research ..."</i>	<i>p.19 - p.21</i>
<i>Round Table "Skin culture test in cosmetic dermatology"</i>	<i>p.22 - p.25</i>
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MEMORIAL LECTURE IN HONOR OF WILLIAM MONTAGNA

KAY S. CARLISLE (Multnomah County Health Department, Portland, OR, USA)

William Montagna was born in Roccacasale, Italy, on July 6, 1913 and died November 16, 1994 in Hillsboro, Oregon. His father found work in the United States and brought his wife and seven children to Buffalo, New York, in 1927. When William began school, he couldn't understand a word of English; however, he completed the first year with an "A" in his new language. In fact, he became so proficient in his adopted language, that he authored and edited more than 30 books and published more than 450 scientific papers and over 75 essays on topics from ornithology to reproduction to disorders of the skin. Among his books are *The Structure and Function of Skin*, the textbook *Comparative Anatomy*, and *Man*, a widely known and adopted book on the biological, sociological and cultural aspects of man.

Dr. Montagna received his B.A. in Biology and Chemistry from Bethany College and his Ph.D. in Zoology from Cornell University. He joined the faculty of Brown University in 1948 where, in 1960, he was named to the Herbert Ballou chair as University Professor. In 1950, he initiated the annual symposium on the Biology of the Skin, which was destined to attract world leaders in the field; these symposia in the future, will be known as the *Montagna Symposia on the Biology of the Skin*. He was president of the Society for Investigative Dermatology. Dr. Montagna received many honors and awards including the Stephen Rothman Award for distinguished achievement in Investigative Dermatology in 1972. He was decorated three times by the Italian government; in 1975 he received the highest honor awarded to a nonresident, the *Commendatore della Repubblica Italiana*.

Dr. Montagna was often referred to as a renaissance man; he was an artist recognized for his avian illustrations, a passionate player of the French horn, a philosopher, a historian, a gardener and a gourmet cook.

COSMETICS IN THE ETRUSCAN WORLD

The information we have on the use of cosmetics in the Etruscan era originated from: a rare collection of documents of ancient writers; from containers (found empty in our excavations) of oils, ointments, creams and from diagrammatic representations of figures at dances or banquets, that clearly depict the use of make up.

In the first centuries of the Etruscan civilisation, i.e. IX-VIII B.C., the figures accessories were primarily necklaces, belts, bracelets. The use of ointments and creams was first ~~stated~~ stated in the beginning of the VII century B.C., with the arrival of Greek and Oriental products and the first local productions. The tradition continued uninterrupted until the end of the Etruscan era.

Antonio Tosti

- The body surface in elderly people -

The metamorphosis of aging, like the moving hand of a clock, is gradual and cannot be easily followed. However a crude comparison between the skin surface of a boy and the one of an old man gives evidence of the changes taking place with advancing of age.

Focus is pointed one some facets of skin aging, which have been studied by means of

- 1) Surface microstereomorphology, as seen in reflecting microscopy.
- 2) Structural profile of old skin in light microscopy.
- 3) Microradiographic images of skin.
- 4) UV contact photomicrography.
- 5) Scanning electron microscopy of keratinocytes.

MOLECULAR BIOLOGY OF CUTANEOUS AGING.

Jouni Uitto, M.D., Ph.D., Professor and Chair, Department of Dermatology and Cutaneous Biology, Jefferson Medical College, Philadelphia, PA 19107.

Cutaneous aging is a consequence of two separate processes, viz. innate biological aging, and exposure to the elements, primarily UV irradiation, known as photoaging. These two processes are clinically and biologically distinct, but specific molecular mechanisms involved in both processes have been identified. For example, in innate aging, reduced rate of collagen biosynthesis could well explain dermal atrophy due to loss of collagen, while diminished elastin synthesis results in reduced capacity to repair elastic fibers which are degraded by constitutive turnover or destroyed by inflammatory processes. Furthermore, loss of proteoglycan/glycosaminoglycan macromolecules, which are primarily responsible for water binding capacity of the skin, might explain the reduction in natural turgor of the skin. In photoaging, excessive accumulation of elastotic material is explained by direct effects of UV-B on transcriptional activation of the elastin gene, as demonstrated in a transgenic mouse model of photoaging. UV-A irradiation contributes to this process by causing inflammation with subsequent cytokine stimulation of elastin synthesis. Combination of these processes explains the sagging and wrinkling of the skin with loss of elasticity and turgor. Thus, the age-associated degenerative changes in the skin are a result of complex biological processes, and understanding of the contribution of individual pathways leading to manifestations of cutaneous aging is a prerequisite for development of pharmaceutical approaches to prevent, and eventually reverse, the cosmetic alterations associated with cutaneous aging.

Role of epidermal ceramides in barrier function

B. Berra - *Istituto di Fisiologia Generale e
Chimica Biologica - Università di Milano*

Lipids are considered to play an important role in the structure, differentiation and function of the epidermis. During the process of keratinisation and epidermal differentiation the lipid composition of the skin changes dramatically. These changes are consistent with the requirement for cutaneous waterproofing.

In this view, many reports have shown the importance of sphingolipids in maintaining the optimal mammalian epidermal permeability barrier function.

Stratum corneum lipids major constituent, ceramide, has been shown to be associated to both water retaining capacity of the skin and permeability barrier; ceramide is thought to derive primarily from glucosylceramide which is practically absent in the exterior layer of the stratum corneum.

Altogether these data lead to the hypothesis that the hydrolysis of glucosylceramide to ceramide, mediated by a lisosomal-like β -glucosylceramidase, plays an important role in the formation and maintenance of epidermal permeability barrier.

These evidences will be critically evaluated in the light of the data found in the author's laboratory on the ceramide and glucosylceramide content in the skin of patients with Gaucher's disease. This sphingolipidosis, due to the deficiency of lisosomal β -glucosylceramidase, is often associated with cutaneous abnormalities.

BIOLOGIC FUNCTION of ALPHA HYDROXYACIDS

EJ Van Scott (Abington, PA, USA)

All alpha hydroxyacids (AHAs) exert similar biological effects on the skin. Some AHAs qualitatively and/or quantitatively cause their own distinctive effects. In general, effects on the epidermis can be either superficial, e.g. detachment of corneocytes, or deeper, e.g. epidermolysis. One or both can be achieved by appropriate AHAs used in peeling procedures. Responses of the epidermis to sustained daily applications of non-irritant formulations include maintenance of normal desquamation, as well as restoration of atrophic photoaged epidermis toward normal. Effects on the dermis gradually become evident with sustained application of AHA formulations. These effects are reflected by increased skin thickness and firmness, accounting for AHAs' improvement of surface irregularities, fine lines and wrinkles, i.e. the visible signs of photoaging. Increased skin thickness, at least initially, is principally due to enhanced production of hyaluronic acid in the dermis. Some increase of hyaluronic acid also appears in the epidermis. Other changes in dermal matrix components may emerge over extended intervals of AHA use.

**MOLECULAR MECHANISMS OF SKIN AGEING:
WHAT'S NEW.**

Slawomir Majewski and Stefania Jablonska.
Dept.Dermatol,Warsaw Medical Acad.,Poland

Ageing process is characterized by two components: changes that occur with passing of time and changes that occur as result of repeated environmental injury (UV). Both ageing and photoageing alter the expression of some genes that are implicated in cell proliferation, differentiation, immunomodulation and UV response in the skin. Changes in the expression of oncogenes (c-myc c-fos, bcl-2, bax) and anti-oncogenes (p53) are responsible for enhanced apoptosis and contribute to the development of cutaneous malignancies. Changes in the connective tissue in aged skin are related to a decreased expression of genes coding for various growth factors, especially those involved in angiogenesis (TGFb, VEGF, bFGF). The process of intrinsic ageing is potentiated by UV light which alters expression of some genes (c-fos, c-myc, p53), evokes local immunosuppression (via alterations in transcription of genes coding for adhesion molecules and cytokines), and changes structure of the connective tissue (via induction of the expression of collagenase gene). The molecular changes in aged skin lead to a diminished cellular responsiveness to exogenous and endogenous stimuli involved in the reparation processes.

THE USE OF GLYCOLIC ACID AS A
PEELING AGENT

H.Murad,A.Shamban (Assistant Clinical
Professor of Dermatology, University
of California School of Medicine,
Los Angeles,CA. USA)

P.Premo (Director of Corporate
Communications/Education & Tech.
Services for Murad Inc, Los Angeles,
CA. USA)

Glycolic acid, a member of the alpha hydroxy acid group found in natural foods, is a new, extremely versatile chemical peeling agent. Many defects of the epidermis and papillary dermis can be treated with glycolic acid, applied in a variety of concentrations ranging from 20% to 70% and left on for a variable period of time dependent on the condition being treated. People of almost any skin color or type are candidates for this peel and many complications seen with other peels are minimized. Results from a histological study comparing epidermal and dermal effects of trichloroacetic acid and glycolic acid peels are presented as well as photographic examples of cutaneous results from glycolic acid peels.

FUNCTION OF THE SKIN: WHAT'S NEW?

L. CELLENO, M. MELCHIORRE

Recent studies have revealed many new aspects of skin physiology. Among the main mechanisms that have been elucidated recently, urocanic acid and its role in cutaneous photocarcinogenesis and in immune surveillance have aroused considerable interest. In the light of recent findings, urocanic acid seems to be the main mediating agent in most skin photoimmunology and for this reason should be avoided in the cosmetics. Intercellular lipids produced by keratinocytes are the main agents in regulating trans epidermal water loss (TEWL), but they exert other functional roles in skin physiology. The process of keratinization seems to be strictly linked to the production of Odland bodies and the release of its content into the extracellular spaces. The cutaneous barrier function enhanced by the correlation between ceramides and EFA, which are linked together (ceramide 1-linoleic acid), form a true interconnecting molecule between lipid and cellular membranes. Cosmetic products based on these latest findings can help xerotic skin and may be effective in normalizing atopic cutis. Androgenic alopecia is a genetic disorder which occurs as a result of the interaction between androgenic hormones and hormonal receptors. In the recent past, the role of androgenic receptors has been better elucidated. Complex enzymatic mechanisms such as phosphorylation and sulphydrylic reduction of these receptors is important in forming an activated hormone AR complex which is able to bind to specific hormone response elements at gene sites in the nucleus to stimulate or to alter cellular processes mediating hair growth. Even if many pharmacological treatments have been proposed to prevent or to cure androgenic alopecia only a complete knowledge of the hormonal mechanisms which are involved in hair growth will in future lead us to the key to treating these aesthetic problems.

WHAT'S NEW IN MOLECULAR BIOLOGY OF THE SKIN PIGMENTATION

B. Berra, Institute of General Physiology and Biochemistry,
School of Pharmacy, University of Milan, Italy

Melanin pigmentation of human skin is either constitutive or inducible. The first is genetically determined and accounts for the melanocyte program in the absence of solar radiation, hormones, chemicals or other environmental factors; the second characterizes the increase in melanin pigmentation above the constitutive levels (suntan). Both are under genetic control. In this view, the regulation of melanocyte growth, differentiation and transformation has been recently elucidated due to the new techniques for growing human melanocytes *in vitro*. Furthermore, the chemistry and physio-biochemistry of melanin have been studied extensively. Finally, hybridoma technology has been introduced allowing the production of tyrosinase MAB and tyrosinase cDNA. So, it is now possible, using the cDNA probes, to determine: 1- the mutation in the tyrosinase structure genes and the ones affecting the synthesis of melanosomes; 2- the packaging of the enzyme and its degradation; 3- the presence within the melanosome of structural matrix proteins other than tyrosinase. All these new informations, discussed in detail in this presentation, will be useful for the analysis of gene migration and of molecular lesions responsible for abnormal melanin pigmentation in man.

What's new in Molecular Biology of proteoglycans

G. Ronca & A. Conte* (Inst. of Biol. Chem. Univ. of Pisa.
Dept. of Animal Biol. Univ. of Modena.* Italy)

The molecular biology techniques greatly increased the knowledge of proteoglycan structure and functions. Direct and cDNA sequencing of core proteins of extracellular, cell surface and intracellular proteoglycans allow their classification in families. The multidomain structure of the hyaluronate-aggregating proteoglycans of the Aggrecan-Versican-Neurocan family is defined. Alternative splicing of mRNA may delete the exons encoding the Epithelial-Growth-Factor like and the Complement-Regulatory-Protein like sequences. The role of proteoglycans in cell communication, migration, homing, growth, differentiation and apoptosis is investigated also for the applications in biotechnology and therapy. For example decorin reduces the scar formation and the fibrotic response to tissue injury and inflammation. It has been shown that the structure of glycosaminoglycan chains has profound influence on the biological activity of proteoglycans. The demonstration of specific cell surface receptors for hyaluronate (HA) increased its functions. HA is synthesised in the plasma membrane. The nonreducing end is extruded in the extracellular milieu. Each HA synthetase molecule makes only one HA chain. The cell may regulate HA by HA synthetase expression. We have investigated the effect of pulsed electromagnetic fields (PEMF) on fibroblast HA. Specific PEMF windows are able to modulate the metabolism of this macromolecule.

Mechanistic Studies for the Safety Assessment of Hydroquinone

John L. O'Donoghue, V.M.D., Ph.D.
Eastman Kodak Company

Studies aimed at improving our understanding of hydroquinone (HQ) mechanisms of action using different strains of rats, different routes of exposure, and comparisons between animal study results and human epidemiology have helped to improve the safety assessment for HQ.

Chronic oral administration of HQ to F344 rats resulted in low grade nephropathy and the appearance of renal tubular adenomas in male rats at 2 yrs. The nephropathy and neoplasms observed in the male F344 rat have not been observed with Sprague-Dawley rats or in human epidemiology studies. Female F344 rats which have a lower severity of nephropathy following HQ exposure also do not develop renal tumors. In the kidney, HQ and its glutathione and cysteine conjugates may undergo redox cycling, generating reactive oxygen species via semiquinone intermediates. The greater sensitivity of the male F344 rat appears in part to be due to a lower acetylase activity in the kidney resulting in accumulation of toxic metabolites. Low level renal toxicity induced by these metabolites induces cell proliferation in P1 and P2 renal segments. This chronic cell proliferation exacerbates the spontaneous chronic progressive nephropathy which naturally occurs in male F344 rats and is a likely mechanism for the formation of benign renal tumors.

Dermal application of 5% HQ in a skin lightener base for 13 weeks did not induce renal toxicity or cell proliferation in the kidneys of male or female F344 rats. The likely reason for the difference between the dermal and oral responses is the relatively slow absorption of HQ through the skin which allows for excretion and metabolism of HQ through pathways which do not lead to accumulation of toxic metabolites even in the sensitive male F344 rat.

DERMATOLOGICAL BENEFITS & ACTION OF HYDROQUINONE

by

Howard I. Maibach, M.D.

**Professor and Associate Dean of Dermatology, University of California
at San Francisco**

Increased melanin pigmentation is a common dermatologic disorder which is conspicuous and calls for therapeutic management. Therefore, compounds that decrease the pigmentation of the skin have been of interest both clinically and cosmetically for many years. Hydroquinone has been widely utilized to treat melanoses, including melasma or chloasma as well as simple undefined post-inflammatory hyperpigmentation for over fifty years.

During the Monograph Review process by the United States FDA in 1982, 2% hydroquinone formulations were recognized as the only safe and effective depigmentation agent for over-the-counter (OTC) sale. Therefore, hydroquinone has been utilized to treat various hyperpigmented areas arising from acne, insect bites, melasma, and other dermatological disorders characterized by increased skin pigmentation.

Microscopic and histochemical investigations have demonstrated that hydroquinone acts specifically on the melanocyte. There are morphological alternates leading to necrosis of the melanin-containing melanosome. The cytological events surrounding skin depigmentation by hydroquinone are ultimately related to the enzyme tyrosinase. Several researchers have isolated the step inhibited by this enzyme which is the conversion of tyrosine to L-(2,3-dihydroxyphenyl)alanine (L-DOPA). The mechanism of action of hydroquinone appears to be either the direct inhibition of tyrosinase or acting as a competitive substrate of tyrosinase. Hence, the inhibition of L-DOPA would eliminate the formation of 5,6-dihydroxyindole which is an immediate precursor to melanin formation.

PERCUTANEOUS ABSORPTION AND BIOAVAILABILITY OF HYDROQUINONE

by

Peter A. Burke, Ph.D.

Vice President R&D, Sara Lee/DE - Americas

The rate of absorption of hydroquinone from aqueous solution is poor, while increased penetration has been observed with alcoholic solutions or emulsions. Recently, studies were performed to determine the rate of penetration and bio-availability of hydroquinone in the Fischer 344 Rat, Rhesus Monkey, and Man using a representative commercial 2% hydroquinone oil-in-water emulsion formulation. The human studies were performed utilizing both *in-vitro* and *in-vivo* techniques. Human cadaver skin was used for the *in-vitro* analyses, while *in-vivo* analyses were performed on both the forearm and forehead of normal, healthy volunteers. To determine the relative bio-availability, oral and intravenous (I.V.) administrations were performed in the monkey and I.V. administration in the rat.

The recovery of C¹⁴ labeled hydroquinone in the urine was very consistent between animal species ranging from 34.4% to 45.3% over a 96 hour recovery period. The Fischer 344 Rat and Rhesus Monkey were found to have the same flux rate of 0.6 $\mu\text{g}/\text{h}\cdot\text{cm}^2$. The bio-availability of hydroquinone was found to be 36.21% and 34.35% respectively.

Anatomical site played an important role in the percutaneous absorption of hydroquinone observed in the *in-vivo* human studies. Specifically, flux rates in Man were 1.0 $\mu\text{g}/\text{h}\cdot\text{cm}^2$ and 1.9 $\mu\text{g}/\text{h}\cdot\text{cm}^2$ for the 2% hydroquinone cream applied to the forearm and forehead respectively. Interestingly, the forearm of man produced the lowest recovery of hydroquinone in the urine, namely 8%. Theoretically, some of the loss might be attributed to daily activity which could have resulted in actives loss due to transfer onto clothing, bedding, etc. *In-vitro* analyses of human cadaver skin demonstrated a high flux rate with an intermediate level of bioavailability. The *in-vitro* study shows a flux rate of 2.8 $\mu\text{g}/\text{h}\cdot\text{cm}^2$ and 34% of hydroquinone permeated the skin after 24 hours of application.

These studies demonstrate a slow to moderate rate of penetration with a rapid urinary excretion rate.

ALTERNATIVE METHODS TO ANIMAL TESTING

Michael Balls ECVAM (European Centre for the Validation of Alternative Methods), JRC Environment Institute, 21020 Ispra (VA), Italy

Directive 86/609/EEC stipulates that "an experiment shall not be performed [on a laboratory animal], if another satisfactorily method of obtaining the result sought, not entailing the use of an animal, is reasonably and practicably available". ECVAM was established in 1991, with the principal task of coordinating the validation of alternative methods at the European level. Validation is the process whereby the *relevance* and *reliability* of methods are established for particular purposes. Meanwhile, *Directive 95/35/EEC*, a Sixth Amendment to *Directive 76/768/EEC*, has been passed, which seeks to ban the manufacturer or marketing in the European Union of cosmetic products containing ingredients or combinations of ingredients tested on animals specifically for cosmetic purposes. Progress in the development and validation of non-animal test procedures will be reviewed, with particular emphasis on skin irritation, skin penetration, phototoxicity and skin sensitisation, and on the role being played by collaboration between the cosmetic industry, the animal welfare movement, academic research institutions and the European Commission.

Cell Cultures in Cosmetology: A Morphological Glance.

G.Biagini- University of Ancona. Italy

That our skin is the mirror of our organism is a recognised concept that is proved consistently by the difference between our chronological and biological age. In this sense cosmesis must be recognised as much more than the simple attempt at improving the aesthetic quality of our image.

The interest increasingly attracted by cosmetics in recent years has led to considerable development in the related technologies. In vitro techniques can play an important role in the fast acquisition of information that will allow the selection of ingredients characterised by low toxicity and high biological activity, at least in the field of cosmetic products. Cell cultures are probably the most promising biological models, in that they are simpler than the organism in toto, but are constituted by organised living units. Their characteristic features and intrinsic limitations must however be taken into consideration when programming experiments or interpreting their results.

CELL CULTURES IN THE PRESENCE OF CHITOSANS AND GAGs.

Riccardo Muzzarelli

Faculty of Medicine, University, V. Ranieri 67,
IT-60100 Ancona, Italia, fax +39 71 2204683

Chitosan, the copolymer of N-acetylglucosamine and glucosamine, exhibits documented favorable actions when used as a wound dressing and a cosmetic functional ingredient. In a skin substitute made of collagen, chitosan and chondroitin sulfates, human fibroblasts were included in the "dermal" side and keratinocytes in the "epidermal" side. A skin similar to the natural one was generated, where the epidermal layers and the basal lamina were present. Chitosan increased the collagen and factor production by fibroblasts. Fibroblasts synthesized the macromolecules of the extracellular matrix in an organized manner and limited hypertrophic scars.

Chitosan is also suitable as a matrix for anchorage-dependent cell encapsulation. The release of nerve growth factor from fibroblasts was assessed according to the induction of neuritic outgrowth.

The in vitro biocompatibility of chitosans, as assessed in terms of toxicity for fibroblasts by the formazan test based on the determination of the mitochondrial succinate dehydrogenase, was found superior in comparison with commercial wound dressings made of collagen or alginate or gelatin.

Chitosans are resorbed over a convenient period of time under the action of lysozyme and N-acetylglucosaminidase; other enzymes are also thought to play important roles in the resorption, namely lipase and chitotriosidase.

The in vivo generated oligomers and monomers exert important biological functions in cell activation, ordered tissue regeneration and immunoadjuvant activity.

POLICIES OF QUALITY AND MANAGEMENT IN COSMETIC DERMATOLOGY

N.J. Stark (Clinical Design Group, Chicago, IL 60622 USA)

The quality and management of biological safety tests includes two important aspects: 1) selecting a qualified testing laboratory, and 2) managing the test data. A personal site visit to the laboratory should confirm that personnel have the education and training necessary to conduct the tests of interests; there is modern equipment and staff to carry out such tests; a quality system and standard operating procedures for animal care, test conduct, equipment operation, and sample handling is in effect; a quality assurance unit monitors testing operations; standard or custom protocols are prepared for each test conducted; and final reports, signed by the study director and audited by quality assurance, are issued for each test. Test results are best managed through a computerized database application. A manual and electronic system will be described which allows the sponsor to document formulations, tests, and test results. The application can be designed with searchable fields allowing the formulations specialist to review past test results and selectively identify components that have been proven safe in other preparations.

A NEW COSMETIC DEVICE: THE TRANSDERMAL COSMETIC DELIVERY SYSTEM

P. Morganti* L. Tiberi**

*Dept. of Dermatology - University of Naples - President/director Res. & Develop. MAVI Sud Italy

** Research & Development MAVI Sud Italy

The concept of transdermal delivery generally include some topical formulations designed for the delivery of biologic active compounds locally applied to the skin. The transdermal cosmetic delivery may be considered a rate -controlled system to provide a continuous transdermal infusion of cosmetic active agents for prolonged periods of time. However the term "transdermal cosmetic delivery system (TCDS) is referred to a multicomponent system of specific shape and size including solid layers or membranes and means of maintaining close contact with the surface of the skin . Active cosmetic agents delivered from TCDS exert its action locally at level of the skin: epidermis, derm and ipoderm.

ACTIVE COSMETIC COMPOUND SELECTION

The primary factor in the selection of an active cosmetic agent for TDCS should be a scientific rationale for considering that this new system would be more advantageous if referred to a topical applied cosmetic emulsion. For example, if the active agent has a short half-life, sustained delivery through the skin can improve its efficacy by permitting more efficacious nocturnal activity. Furthermore, the use of this new system should be more advantageous for obtaining more fast and evident positive results in small cutaneous area as in cellulitis area and where are present fine wrinkles. Even a system that has also to be changed once a day represents a significant advantage over the emulsion or gel form that has to be applied at least two times a day; systems applied one or twice weekly may represent , of course, a correspondagly greater advantage. As also is known for the drugs and about our own experience the selected active compounds to be transported in the best way through the stratum corneum, should have a molecular weight possibly below 1000 DA, a meeting point below 200 °C and a significant solubility in both water and mineral oil. If these criteria are met some combination of pH donor and enhancer vehicle can be found from which the cosmetic active compound will show significant transcutaneous flux values also in "in vivo" resting. Of course, the rate of permeation will depend on the kind of vehicle, on the dosage of active agents, on the enhancers added and on the size of the system used. Clearly the active agents and the vehicles used must be stable under normal condition of use, and should not provoke skin reactions such as irritation or contact sensitization. In the first TCDS studied from our research team the active agents used are dispersed in a special adhesive polyacrilate polymer. This active agent-containing adhesive is spread by solvent casting onto a flat sheet of an active agent-impermeable backing to form a reservoir. To obtain an high and constant active agent-release it has been of fundamental importance (si è dimostrato di fondamentale importanza) the adhesive dispersion system and the cosmetic enhancers used. From these first obtained results we think that the TCDS can be considered a new device for special cosmetic purposes.

Cleaning effect of soaps

**Ronni Wolf & Marcel Friedman, Neca Chemicals
(1952) Petach-Tiqua, and the Sackler School of
Medicine, Tel Aviv University, ISRAEL.**

In the past 30 years, many tests for assessing the irritancy of soaps have been introduced, but only very few tests for evaluating their cleaning properties. The urgent need for such a method is obvious.

The method currently used for evaluating the cleansing power of soaps is that of Schrader. We will represent a new method for measuring the cleansing capacity of soaps, that is based on the same principles, however, instead of using the complex, clumsy and expensive washing machine of Schrader we use spinning water. Results indicate that the method is reliable, reproducible and also practical and easy to perform in every laboratory.

Although it is difficult to draw conclusions from our sample, comparing only two products, it is possible, to appreciate the trend. It appears, that the cleansing capacity of soap is directly related to its ability to remove fat from the skin, i.e., to dry the skin. Soap is simply not clever enough to separate the two actions; removal of oils and removal of dirt from the skin.

ESTROGEN COMPOUNDS IN SKIN AGEING

J.B. Schmidt

estrogen compounds in skin aging

in skin-an estrogen target organ - various functions that decline during aging, are modulated by estrogens. Therefore we performed treatment of the aging skin of perimenopausal females with estrogen compounds and investigated various aging parameters during therapy. 60 perimenopausal females used 1g of a 0,3% estriol (E_3) or a 0,01% estradiol (E_2) compound once daily for a period of 6 months on face and neck.

Clinically, the effects became evident after mean 7-16 weeks of treatment. All patients of the E_2 -and 96% of the E_3 -group showed improvements of blood flow, skin elasticity and moisture. The latter was controlled by corneometry. Wrinkle depth-controls were performed by profilometry and showed significant decreases in 87% of the E_2 group and 89% of the E_3 group after mean 16 and 17 weeks respectively. Skin biopsies were performed in 10 females for immunohistochemic determination of Collagen I and III. All specimen showed significant increases of Collagen III at the end of treatment. The monthly determined hormone levels showed no changes for E_2 and FSH, but significant increases for prolactin. Systemic hormonal side effects were excluded by the lack of changes of the vaginal KPI-Index between the onset and the end of treatment. Estrogen compounds have shown to be active in hormonally induced skin aging. Future studies will have to elucidate further effects and optimum concentrations of estrogenic compounds.

GLYCOLIC ACID THERAPY: EVALUATION OF EFFICACY AND
TECHNIQUES IN TREATMENT OF PHOTOAGED SKIN

Eva-Maria Kokoschka, Department of Dermatology, Div.
of General Dermatology, Univ.Vienna, Austria.

Alpha hydroxy acids and alpha keto acids applied topically in lower concentrations reduce the thickness of hyperkeratotic stratum corneum by reducing corneocyte cohesion at lower levels of the stratum corneum. This property permits efficient clinical control of dry skin, ichthyosis, follicular hyperkeratosis, and other conditions characterized by retention of stratum corneum.

Applied topically in higher concentrations, these acids cause epidermolysis. This property provides a new alternative for treating seborrheic keratoses, commonly known as "age spots", actinic keratoses, and verrucae vulgares; all of which lesions involve distinct epidermal hyperplasia as well as retention of stratum corneum.

Facial wrinkles can be modified with topical alpha hydroxy acids, applied in higher concentrations as office procedures, and concomitant daily home application of lower concentrations.

The experience with 80 skin aged patients will be presented.

TRANSPLANTATION FOR REPIGMENTING VITILIGO
M.R. Thissen & W.Westerhof (Institute for
Pigmentary disorders, Amsterdam, Netherland) .

Objectives: Our purpose was to review different transplantation procedures for their practicality and effectivity in treating vitiligo.

Methods: More than a hundred patients with stable vitiligo were treated by minigrafting, Thin Thiersch grafts, epidermal grafting, in vitro cultured epidermis bearing melanocytes and in vitro cultured melanocytes.

Results: Use of each method results in repigmentation. Minigrafting is the simplest, least aggressive but time-consuming method; cobble-stone effect is seen over bony structures. Epidermal grafting leaves no scarring but is also time-consuming. Thin Thiersch grafts are usefull for relatively larger areas, good esthetic results depend upon the use of very thin grafts. Culture-methods can lead to repigmentation of large areas; using proper culture-media is important, the method is relatively expensive.

Conclusions: Repigmentation by transplantation can be achieved if patient selection and transplantation procedure are carried out carefully.

NATURAL PROTECTION FOR NATURAL COSMETICS

D. W. Ashworth (Knoll MicroCheck, Nottingham, England)

There is an increasing, consumer driven, demand for Natural Cosmetics and this has prompted a need for methods of protecting these products from microbiological spoilage, without the use of synthetically derived chemical preservatives. The paper describes the use of an oxido-reductase enzyme, a peroxidase enzyme and their associated substrates combined to form a system. The results show that, when using these components in an optimally balanced ratio, cosmetic products can be protected from a broad spectrum of microorganisms over extended periods of time. Information is also presented on the compatibility of the system with pH and temperature in a range of standard formulation types.

PHYSIOLOGICAL BENEFITS OF LAMELLAR EMULSIONS USING NATURAL PHOSPHOLIPIDS IN COSMETIC EMULSIONS

J.-P. Arnaud

Lucas Meyer France, Chelles (France)

ABSTRACT

Many cosmetic products are formulated in the form of oil/water emulsions. It is widely recognised that high HLB (hydrophilic/lipophilic balance) surfactants used for such preparations have irritant properties. Moreover, most of them modify the skin structure leading to lower skin barrier properties and dehydrated skin.

To overcome these problems, natural phospholipids in association with other plant lipids have been applied to produce stable cosmetic O/W creams. Electron micrographs show that phospholipid bilayers form a highly viscous network stabilising oil droplets and providing full bodied cream without the use of thickeners.

Both *in vitro* and *in vivo* (human volunteers) experiments showed the non irritancy and the perfect tolerance of such preparations.

In addition, skin investigation studies demonstrated very interesting physiological properties of these natural emulsions.

In vitro experiments using gelatin cell demonstrated that film forming properties of lamellar emulsions greatly reduced water loss. This was confirmed on human volunteers where transepidermal water loss was significantly reduced when using our formulations. It was concluded that both phospholipids (and their associated linoleic acid) restored barrier properties of dry skin and improved *stratum corneum* cohesion.

Consequently, phospholipid lamellar emulsions combine safety, perfect tolerance, natural image, skin treating properties and high emulsifying properties. Their excellent skin feel also contributes for their use in cosmetics.

A NEW CLASS OF COSMETIC ACTIVE COMPOUNDS: THE SKIN-IDENTICAL CERAMIDES

H. Lambers

Ceramides, a special class of sphingolipids, make up about 40% of the total lipids in the stratum corneum and consist of a family of 6 heterogeneous types (Ceramide 1 through 6). They play an essential role in maintaining and structuring the lipid lamellar system, i.e. the water-impermeability barrier, of the skin.

Cosmoferm, a group company of Gist-brocades has succeeded to develop a technology based on fermentation which allows the production of a total range of pure human skin-identical ceramides.

The complete production process consists of two distinct phases and can be summarized in the following scheme:

YEAST	+	NUTRIENTS	->	(PHYTO)SPHINGOSINE
(PHYTO)SPHINGOSINE	+	FATTY ACID	->	CERAMIDE

The big advantages of this process are: (a) Human Skin-identical Ceramides; (b) high purity (>90%); (c) constant quality; (d) high safety; (e) natural non-animal derived source; (f) production of individual Ceramides

Production has been focused on N-stearoyl-phytosphingosine (commercial name Ceramide III) and N-oleoyl-phytosphingosine (commercial name Ceramide IIIB), typical representatives of the Ceramide 3 class present in human skin.

By topical application, both Ceramide III and IIIB have been tested and shown to be efficacious on the human skin (female volunteers, 19-45 years of age). Results of three studies will be presented showing: (1) Improvement of the structure of the healthy human skin as assessed by increased water retention and decreased roughness; (2) Restoration of detergent (SDS)-damaged human skin as demonstrated by increased normalisation of skin water retention and transepidermal water loss; (3) Protection of healthy human skin against detergent-induced dermatitis as shown by a much lower (SDS-induced) increase of transepidermal water loss and redness of the skin after pretreatment of the skin with ceramides.

In the efficacy studies Ceramide III/IIIB showed to be efficacious at low concentrations (0.05%). Clear dose response effects were noticed in the range of 0.05 - 0.5%. Already six hours after the start of topical application the beneficial effects of Ceramide 3 could be noticed. The formulation itself seems to be of crucial importance; it must be designed to target the ceramides to the stratum corneum.

Recently different types of Human Skin-identical Ceramide 6 have been developed. These molecules, which characteristically consists of AHA's attached to the phytosphingosine backbone, could be functional in the natural desquamation process. Results of the first efficacy tests will be presented.

Corinne STOLTZ (Development of cosmetics, SEPPIC, PARIS - FRANCE)

The Interest of Lipoaminoacid Biovectors

Aminoacids play an essential role in many biological mechanisms. However, to carry out this role, they must be transported right up to their specific site of action. Drawing inspiration from nature and its diversity, SEPPIC has synthetically reproduced a complete range of lipoaminoacid type biovectors called "lipacide".

Lipacide are obtained by N-acylation of an aminoacid (alone or resulting from hydrolysis of vegetable protein) by a fatty acid of varying length. Thanks to their amphiphilic structure, lipacide products help to restore the skin's hydrolipid film, to preserve cutaneous acid level, to reinforce cellular cohesion and to provide a bioavailable source of aminoacids. If all these properties are common to all lipacides, however, the nature of the fatty acid as well as the nature of the aminoacid transported confer a specific activity to each type of lipacide (restructurer, calming, radical scavenger, antimicrobial...). The efficiency of lipacide appears at concentrations of 0,5 to 2%. This specificity is demonstrated by *in vitro* and *in vivo* tests. As examples, two main lipacides play an important role in the skin : lipacide PVB and lipacide C8G.

Lipacide PVB is a wheat protein biovector showing a stimulating and restructuring effect on skin. It also offers an excellent soothing effect, allowing its use in all type of skin care products especially in anti ageing and calming products.

Lipacide C8G is a capriloyl glycine derivative. This active shows powerful antimicrobial activity : it covers both gram + and gram - bacteria as well as yeast. So it is possible to obtain "preservative free" cosmetic formulae without risking contamination through time. This reduces allergic disorders often related to the use of preservatives.

The Treatment of Acne Vulgaris and the normalisation of grease skin by Phosphatidylcholine-bound Linoleic Acid in a Liposomal Formulation.

M. Ghyczy¹, H.-P. Nissen²

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The pathogenesis of acne has not been elucidated in detail. Recent scientific findings indicate that the decisive pathobiochemical defect underlying acne is a disturbance of lipid metabolism in the follicular epithelium as a result of linoleic acid deficiency. Phosphatidylcholine (PC) isolated from soybean lecithin, contains 70% linoleic acid, which is bound on the glycerol backbone.

Liposomes containing 10 and 20% soybean PC (Phospholipon® 80 or 90) were used in 7 open, single center study in the treatment of acne vulgaris grade 1 and 2. The dosage was calculated as 0,23 mg linoleic acid per cm² skin. The duration of the treatment was 3 to 8 weeks and the number of patient was 5 to 15 at the age of 13 to 18 years. The control was the untreated contralateral side of the face and the efficacy variables were the number of comedones and efflorescences. The evaluation method used projection foil on the face to mark the comedones and the efflorescences.

The combined data from the 7 studies showed a 40% reduction in the number of comedones after 14 days and 64,3% reduction after 28 days. The number of efflorescences was reduced 50% after 14 days and 75% after 28 Days. Concomitantly in the skin surface lipids the concentration of linoleic acid was risen and the concentration of squalene, as a indicator for skin surface lipid, was reduced.

Phosphatidylcholine, containing chemically bound linoleic acid, may constitute a new therapeutic principle in the direction of a casual therapy for the treatment of acne and disturbances of the lipid metabolism in the skin. In cosmetic application the principle may offer a new way for the treatment of greasy skin, by downregulation of the elevated lipid synthesis.

Dermatologic laser therapy: state-of-the-art
Timothy Corcoran Flynn, M.D.

A basic review of laser principles will precede a brief, but thorough, discussion on state-of-the-art lasers for use in dermatologic surgery. Lasers appropriate for the destruction of lesions, pigmented lesions, as well as treatment of vascular lesions with the Flashlamp Pumped Pulsed Dye laser, as well as treatment of pigmented lesions with the Neodymium:YAG and Ruby lasers will be discussed. Technique will be emphasized and examples will be shown. The newest lasers, very fast acting CO₂ lasers, which efficiently remove superficial layers of the skin will be discussed with an emphasis on their role and cosmetic dermatologic surgery.

FACIAL REJUVENATION: A DERMATOLOGIC SURGERY APPROACH

A.V. Benedetto: MCP and Hahnemann University,
Philadelphia, PA, USA

The chronic changes of facial skin caused by aging and sun exposure are various and difficult to counteract. Different individuals view these changes in different ways. Therefore, an attempt at facial rejuvenation should be approached on an individual basis, and each patient treated accordingly. The cosmetic dermatologic surgical approach can be executed in stages according to each patient's expectations and willingness to undergo a particular procedure. Various levels of facial rejuvenation can be categorized in the following manner. Level I is for superficial elimination of benign lesions using electrodesiccation as the main treatment source. Level II is for superficial modification, in which weak a-hydroxy acids, liquid nitrogen and facials are used to treat epidermal and upper dermal changes. Level III is for moderate modification, which utilizes stronger a-hydroxy acids, trichloroacetic acid and ultrapulse CO₂ laser to create mid-dermal changes. Finally, Level IV, the deep treatment stage incorporates dermabrasion to treat the more serious changes of photoaging. Autologous fat transplantation, or collagen injections also can be used for improvement of deep and depressed scars. Each level of facial rejuvenation requires equipment usually found in a dermatologists office and can be performed with minimal effort in an outpatient setting.

ELECTROSURGERY IN MY OFFICE

H. W. Rothenborg

An increasing number of electrosurgical appliances have become available for the treatment of dermatological disorders in recent years. In spite of all advances, the electrocautery and electro-coagulator remain valuable tools in the control of bleeding and the treatment of Warts, Condylomas, Skin Tags, small Sebaceous Cysts, Thrichoepitheliomas, Basal Cell Carcinomas, Spider Nevi and other Telangiectasias.

The use of electrosurgery is an "art" as no exact dose measurement is possible. Adequate precautions must be taken to protect the patients, e.g. sufficient tissue must be taken for examination before starting treatment, scar formation must be considered etc. A number of do's and don'ts will be mentioned - all as seen from the office of a private practitioner.

INDICATIONS FOR DERMABRASION

N. Scuderi

Università di Roma " La Sapienza " Cattedra di Chirurgia Plastica Dir. : Prof. N. Scuderi

The dermoabrasion is a surgical procedure which consists in a mechanical removal of the most superficial layers of the skin, using rotation and abrasion instruments, leaving a smooth surface in which is evident a new epithelization started from the cells of the basal layer and the dermal appendages.

The dermoabrasion was born as a surgical procedure used for the treatment of small face scars, especially in the acne issues in youth. The most important indications for dermoabrasion have been increased to the treatment of other scar situations, some cosmetic problems and to different dermatological pathologies. The dermoabrasion is used, particularly, to reform the step scars, depressed scars or lightly hypertrophic scars as in traumatic, acneic or varicella scars. The cosmetic indications for dermoabrasion are the treatment of small wrinkles of the face, especially at perioral region, decorative tattoos and intrinsic aging of the skin.

The dermoabrasion is used as a complementary technique in some particular pathologies Xeroderma pigmentosum, Gorlin-Goltz Syndrome, Actinic Keratoses, Rhinophyma, Seborrheic keratoses, and Porokeratosis, neurofibromatosis, multiple Lichen amyloidosis, Syndrome Leopard and Chloasma. The dermoabrasion is also widely used in the treatment of traumatic tattoos and early excision of necrotic tissues (escaectomy) in the treatment of deep burns, especially of the face.

At the end, the dermoabrasion is a treatment which has a wide possibilities of indications, but it requires a meticulous modulation based on the pathologies and clinical characteristics of the patient. It would not be used, if not in particular cases of skin areas where the dermal appendages are reduced or absent, as for example in dermal aplasia, in deep burns, in split thickness skin grafts and in the areas which were treated by repeated radiotherapy treatments.

Furthermore, a high phototype, the attitude to keloids or the presence of skin infections, can complicate the result of the procedure. The dermoabrasion, therefore, requires a lot of experience to be performed in a safe and correct way, as it is a surgical technique efficient for a lot of skin pathologies or small aesthetic defects.

DERMOABRASION: WHY NOT

Dr. António Picoto

Director, Centro de Dermatologia Médico-Cirúrgica, A.R.S. de Lisboa e Vale
do Tejo - Lisboa, Portugal

Dermoabrasion is a dermato-surgery technique that already has a long story. Created by a German dermatologist it has been favoured and criticized, used, frequently abused and almost forgotten along those 50 years.

But, with the last 20 years of glory for dermatosurgery, the procedure is coming again under close observation.

Dermatologists are very creative and the procedure has changed very much in the last 10 years. Both the technique and the instruments.

Freezing of the tissues that will be abraded is now imperative, new portable light machines provide cheap and excellent tools for the brush or frazer. Local anesthesia became the standard way and is done in several different ways.

Personally we use EMLA (R) cream in occlusion followed by nerve blocks.

Some people are using the tumescent technique.

The post-op care changed dramatically and we use now the semi-permeable membrane or colloid gels with much comfort, no pain, better and speedier for the patient.

The postop for a full face dermoabrasion is now about one week..

The indications have to be carefully considered and one has to have in mind combination with other techniques.

For deep large acne scars and hypertrophic scars, we think that dermoabrasion is the best surgical treatment available.

We will show clinical examples.

Basic Techniques in Cosmetic Sclerotherapy
Mary P. Lupo, M.D. (New Orleans, LA, USA)

Sclerotherapy techniques will be discussed to help the novice and encourage the experienced. Comparison of sclerosants, necessary materials and optimal techniques will be outlined. Numerous pre and post treatment cases will be presented. Finally, how sclerotherapy adds another dimension to a dermatology practice will be mentioned.

ARE WE READY FOR A GRANT APPLICATION TO THE NATIONAL INSTITUTES
OF HEALTH ALTERNATIVE MEDICINE DIVISION?

Larry E. Millikan, M.D.

The possibilities for grant preparation and data gathering for spa and balneo-therapy have never been greater. The new section on Alternative Medicine, at the National Institutes of Health, will provide such opportunities and our initial beginnings should allow us, over the next six months to get the appropriate materials together for such. The initial steps should be consolidation of data from the multiple international participants, in regards to therapy, present, historical and otherwise. The results of such therapy, especially with the Dead Sea data, which while accepted in Europe, needs further review for U.S. interpretation. The other area in spa therapy, that needs careful work by members of the group, would include the nutritional and lifestyle modifications in spa therapy that are the focus for medical planners in the U.S. at the present time.

The orderly steps to be taken include:

1. Consolidation of presently available data,
2. Identification of key investigators,
3. Identification of key parameters to measure effects - successive therapy, etc.,
4. Overview of the planned approaches to evaluation of spa therapy, and parameters to measure the health benefits of same.
5. Financial review of co-investigators needs.

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HARMFUL EFFECT OF ULTRAVIOLET RADIATION.

Benvenuto Giannotti, MD - University of Florence, Italy.

When considering the effects of ultraviolet radiation (UVR), several factors have to be taken into account: 1. the individual phototype (genetically determined); 2. the type of exposure (occasional, intermittent, chronic); 3. the sources of UVR (natural and/or artificial) and their wavelengths; and 4. the environmental features of natural UVR (latitude, longitude, season, weather). All the above factors concur to determine the response of the skin to UVR.

The harmful effect of UVR can be classified in ACUTE, both direct (solar urticaria, polymorphic light eruption, exacerbation/precipitation of photosensitive dermatoses) and indirect (phototoxic and photoallergic reactions); and CHRONIC (photoaging, chronic actinic dermatitis, skin cancer).

The role of UVR in the pathogenesis of skin cancer has been a matter of debate and investigation for years. The results of epidemiologic and experimental studies worldwide reasonably indicate that UVB radiations are deeply involved in this process, mainly due to their local and systemic immunosuppressant effect; the possible role of UVA, supported by some experimental evidences and possibly dose-related, remains to be elucidated. Concerning specific types of skin cancer, it has been clearly demonstrated that the development of squamous cell carcinoma is related to chronic sun exposure; the risk of basal cell carcinoma and melanoma, conversely, seems to be related to intermittent sun exposure, at least in certain populations. Different from skin cancer, UVA radiations play a major role in the pathogenesis of photodermatitides and photo-exacerbated dermatoses. The above findings and the known effect of UVA in dermal photoaging support the necessity of extreme caution in the uncontrolled exposure to artificial UVA sources.

MELANINS MELANOGENESIS AND SKIN PHOTOPROTECTION

Giuseppe Prota. Department of Organic and Biological Chemistry, University of Naples, Naples, Italy

Current concepts on the origin of skin color differences and skin-reactive types center mainly arounds variations in the amounts, size and distribution of melanosomes in the epidermis. New evidence which is presented indicates that what is commonly referred to as melanin or eumelanin is not a definite chemical entity, but a collection of molecules at different degrees of polymerization and oxidation. This implies that various forms of pigment can be found at different sites within the skin, which may interact differently with UV radiation. Thus, it is the quality rather than, or in addition to, the quantity of the pigment in the epidermis which is critical for skin photoprotection. In addition, two other chemically distinct types of melanins may be present in human skin: the sulfur-containing pheomelanins, and the oxymelanins of similar color, but devoid of sulfur. These and other advances in the chemistry of melanin pigmentation open new avenues to the understanding at molecular level of the relationship between skin color and UV susceptibility..

Are Cosmetic Liposomes Able to Improve the Skin Barrier Properties?
H.E. Junginger

Leiden/Amsterdam Center for Drug Research, Division of Pharmaceutical Technology, Leiden University, The Netherlands

A lot of cosmetic preparation containing liposomes are currently on the market worldwide. Different types of liposomes (liquid state and gel state liposomes) are incorporated in various types of vehicles as emulsions and hydrogels. In some cases it has been claimed that liposomes are able to penetrate the stratum corneum intactly and to carry substances with them which may nourish the basal cell layer of the epidermis. Other claims are that cosmetic liposomes are able to improve the skin barrier properties of the skin and hence act preferentially as skin moisturizers. We have investigated the interactions of three different liposome preparations with human stratum corneum by means of Freeze Fracture Electron Microscopy and Small Angle-X-Ray Diffraction studies in vitro. Transepidermal Water Loss has been monitored in vivo after standardized application of the liposome dispersions to human volunteers. The following results have been obtained:

- Liposomes do not pass intactly human stratum corneum
- Liposome constituents as phospholipid interact with the skin lipids
- The strength of interaction depends on the state of the liposomes (liquid state or gel state)
- Liposome constituents penetrate molecularly dispersed into the stratum corneum and may act as penetration enhancers
- Skin lipid interactions with liposome constituents result rather in reduction of the skin barrier function than in repair
- Observed skin hydration by topical application of liposomal preparations may be mainly caused by the occlusion effect of the vesicles.

FRESH SEAWEED FROM THE LAGOON OF VENICE AS RAW MATERIAL FOR NATURE-SAVING PACKAGING

P. Morganti* - C. Nicolucci** - S. Nasi***

* *Dept. of Dermatology - University of Naples / President - Director Res. & Develop. Mavi Sud Italy*

** *Sales Manager - Cartiera Favini - Italy*

*** *Member of the Board - Cartiera Favini - Italy*

Unfortunately, everybody knows about the "greenhouse effect" resulting in increased temperature on the earth. Trees, which release oxygen and absorb carbon dioxide, are being cut all over the world to give room to more profitable crops. Trees are cut partly in order to obtain wood pulp, a primary raw material for producing paper and cardboard, the consumption of which is on the rise worldwide. Naturally, cardboard is used also in the cosmetic field to make the so-called "secondary containers", that is packaging.

However, wood pulp as a primary raw material for both packaging and leaflets can be replaced with the seaweed overproliferating in the lagoon of Venice due to the environmental pollutants we ourselves produce.

According to a recent estimate, 500,000 tons of fresh seaweed is the amount of standing algae biomass in the lagoon of Venice during their maximum proliferation.

Mechanical removal appears to be crucial for bringing the seaweed amount back to limits that are compatible with a balanced ecosystem.

Thus, using seaweed for cardboard production is useful to keep the ecological balance in the wonderful lagoon of Venice, as well as to reduce wood pulp consumption and, consequently, the amount of trees being cut.

The manufacturing technique for this special seaweed paper is described mainly in order to make those present sensitive to a problem, the "greenhouse effect", the solution of which depends on the way we live our daily life.

The preliminary programme of this Congress was printed on seaweed paper as a small contribution to safeguarding Venice and trees.

ADVANCES IN COSMETIC GYNAECOLOGY

S. Mancuso

Surface lipids are derived from two principal sources: the sebaceous glands and the epidermis. Their contribution is different. epidermis mainly produces cholesterol, sterol esters, glycerids and phospholipids, while sebaceous glands squalene, fatty acids, wax esters, triglycerides. It has long been realized that the sebaceous glands are hormone dependent, and the dramatic increase in their activity, which occurs at puberty, can be stimulated by the administration of the appropriate hormone. Most of the hormones (TSH, ACTH, FSH, LH) act indirectly by stimulating their respective endocrine tissues. In other cases the hormones (for instance GH) acts synergistically with another hormone which the sebaceous gland is sensitive. The glands activity is mainly under control of androgenic hormones of either gonadal or adrenal origin. More than 20 years ago Wotiz et al. showed that human skin could metabolize testosterone. Sebum secretion rate depends on various endogenous and exogenous factors as diet, temperature. Diet seems to decrease significantly the secretion of sebum in obese women. Conflicting reports exist about the effect of external or internal temperature. An age-related decline in wax esters secretion is observed beginning in young adulthood and continuing throughout life, thus suggesting an impact of hormones also on the qualitative composition.

ROLE OF THE SKIN IMMUNE SYSTEM IN THE TRANSFORMATION OF XENOBIOTICS.

Silvia Moretti

Clinica Dermatologica II, Università di Firenze, Italy

Skin is an organ capable of performing a variety of metabolic functions, including those involved in the metabolism of hormones, carcinogens, drugs and environmental chemicals. Since skin contains enzymes capable of metabolizing xenobiotics, any chemicals applied to the surface of the skin will be exposed to available biotransformation systems that are present in the skin. The exact anatomical distribution and localization of this metabolic activity remains uncertain. In the human skin chemical-metabolizing activities seem localized primarily within the epidermis; however also the dermis possesses the capacity to metabolize chemicals. Very little is known about cutaneous transformation of xenobiotics mediated by the skin immune system (SIS). SIS is a peculiar, organ-related immune compartment, made up of cellular components that selectively travel to the skin, i.e., antigen-presenting cells (epidermal Langerhans cells and dermal dendritic cells) and T lymphocyte subsets. Some chemicals are able to react with SIS undergoing biotransformation. Possible mechanisms of this phenomenon are discussed.

VITILIGO AND MELASMA : TWO "DIFFICULT TO TREAT" MELANIN PIGMENTARY DISORDER. Jean-Paul ORTONNE, University of Nice-Sophia Antipolis-FRANCE

Vitiligo and melasma are very common melanin pigmentary disorders. Both represent cosmetic problems that often lead to severe social and psychological consequences.

Vitiligo is the prototype of melanocytopenic hypomelanoses (reduction or absence of melanocytes). At present, there is no universally effective drug for the treatment of vitiligo. There are, however, various therapeutic modalities that may be beneficial. Psoralens and exposure to UV-light type A (PUVA) is the best medical treatment that offers a reasonable hope of achieving repigmentation of vitiligo skin. Three different psoralens 8-methoxypsoralen (8-MOP), 4,5',8-trimethylpsoralen and more recently 5-methoxypsoralen (5-MOP) are used to treat vitiligo. The availability of 5-MOP is undoubtedly the most interesting advance of the phototherapeutic approach of this disorder. Indeed, 5-MOP is less phototoxic than 8-MOP and has good pigmentation capacities. It can be used safely for outdoor treatments. 5-MOP is well-tolerated by most patients and rarely induces gastric discomfort. However, other compounds such as Khellin (KUVA) have also been tried. Because of the drug-induced hepatotoxicity, it is difficult to recommend this treatment. Studies of the effectiveness of topical KUVA gave conflicting results. Several reports suggest that L-phenylalanine, when taken orally followed by UVA-irradiation, is a promising agent for the treatment of vitiligo. The need for confirmation of these results by controlled studies should be emphasized. Several studies indicate that corticosteroid preparation can promote the repigmentation of vitiligo skin. This treatment has reasonable success rate. It is generally used in patients with limited involvement. Several drugs are claimed to be effective in the treatment of vitiligo, but sufficient data in published reports are not available to substantiate uncontrolled observations. These include melagenina (an hydroalcoholic extract of the human placenta), polypodium leucotomos (Anapsos or Difur) and

chinese herbal mixture. More recently, two quite new therapeutic strategies have been proposed: The first involves topical application of pseudocatalase, calcium and short-term UVB light exposure. Promising results (repigmentation, arrest of active depigmentation) have been recently reported. The second is based on the use of antioxidants (alternative cycles of tocopherol acetate + selenium d-l methionine + d-l methionine). Interesting results have been obtained in patients with early and active vitiligo. Several surgical procedures have been proposed to replace the epidermal compartment of melanocytes that is absent in vitiligo skin. These include: grafting of suction-blistered epidermis, minigrafts, transplantation of in vitro cultured epidermis bearing melanocytes, of in vitro cultured melanocytes or fresh epidermal cell suspensions. These techniques apply only to cases with limited and stable involvement. When the damage of the melanocyte system is so extensive that its replacement is not possible, amputation of the residual melanocytes can be achieved by application of chemicals such as monobenzyl ether of hydroquinone. Cosmetic cover-up, hair dyes, and micropigmentation can be used as camouflage procedure and may be adequate to satisfy the needs of some patients.

Melasma is probably the most common hypermelanotic disorder. Its pathogenesis remains uncertain, but the role of sunlight, estrogens, certain drugs, cosmetics and genetic predisposition are well established. Hydroquinone alone or in combination with tretinoin and topical corticosteroid remains the most popular treatment. However, the results are sometimes disappointing. Interesting results have been reported with 0.1% tretinoin. New phenolic compounds and azelaic acid are also used. The recently developed lasers have not yet demonstrated their usefulness for the treatment of melasma. Chemical peeling should be proposed with caution due to the risk of post-inflammatory hyper-pigmentation. These strategies should be accompanied by the elimination of the causative factors.

SEBUM SECRETION DURING MENSTRUAL CYCLE

A. Lanzoni

Uncertain data have been obtained until now about the quantitative and qualitative variations of sebum secretion during menstrual cycle. In this study sebum secretion was calculated at different period of the cycle (at early follicular phase EFP, at late follicular phase LFP; at periovulatory phase OP, at midluteal phase MLP). Skin surface lipids were obtained by wiping the folds with a small cigarette paper and the quantities of material in each subjects were determined by weighing dry paper. Cholesterol, oleic acid, triolein, palmitic acid, squalene were assayed. During menstrual cycle sebum secretion significantly declined from EFP until OP, then at MLP the rate of secretion came back to early follicular levels. Among the lipids analyzed only palmitic acid showed significant changes during menstrual cycle, showing the highest value at periovulatory phase. Palmitic acid/cholesterol ratio, used to evaluate the qualitative modifications of sebum secretion, sharply increased during human menstrual cycle at ovulatory period when the values resulted significantly higher than those found in EFP, LFP or MLP. These data suggest that sebum secretion presents quantitative and qualitative changes which appear to be related to the change of hormonal status. Follicular activity (estrogens, androgens) could increase the secretion of some sebum components, while luteal activity (progesterone) could play an antisebotrophic role. Further studies on relationship between the endocrine status and metabolic events of the skin could confirm sebum as a new index for detection of ovulatory period and then for natural regulation of fertility.

THE SEBUM PRODUCTION IN PREGNANCY AND PUERPERIUM

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We have studied the sebum production, water content and PH in three groups of patients: 1) group a normal ovulatory women in three different phases of the menstrual cycle who served as control; 2) pregnant women were checked three times in the three trimesters of the pregnancy; 3) in the puerperium two times, early and near the end. The results show an increased production of sebum in pregnancy between 32 and 40 weeks; moreover in the same period we observed a significant increase of the PH. Water content did not change.

In the puerperium sebum production and PH decreased in the second control, one month after the delivery. No variations were observed in the water content. In conclusion these data represent a pilot study in the skin modification in pregnancy and in puerperium.

THE SKIN IN MENOPAUSE

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Skin during menopause undergoes several changes, leading to the clinical manifestations typical of the senescent skin. The skin atrophic changes are the result of three major components: solar irradiation (photoaging), intrinsic age (aging) and postmenopausal hypoestrogenism, although it is difficult to dissociate the effects of the single factors.

Both estrogen and androgen receptors have been identified in the fibroblast of the skin, suggesting that skin is a sex steroid target tissue. Although present also at epidermis and skin appendages level, the effects of postmenopausal hypoestrogenism are particularly important in the dermis, involving its two major components, the collagen bundles and glycosaminoglycans (GAGs). These are amorphous ground substances that are present in between collagen bundles. The GAG chains allow rapid diffusion of water-soluble molecules and are responsible for the turgor in the extracellular matrix that resists compressive forces (on the contrary, collagen fibrils resist stretching forces). Hypoestrogenism results in a decrease of the the synthesis of dermal GAG and of the dermal water content.

The collagen present in the skin is mainly of type I, together with an additional amount of collagen type III. It has been shown that skin collagen and skin thickness decreased proportionally with time after menopause. Moreover, the relative amount of the two type of skin collagen changes with the menopause, showing a decrease of collagen III/collagen I ratio. Finally, during the menopausal years also qualitative modifications of collagen fibrils occur. Several studies have shown that the decrease in total collagen and the reduction of collagen III/I ratio may be prevented or reversed with hormone replacement therapy, confirming the important role of estrogen deficiency in the skin senescence process.

Hormonal replacement therapy improves the woman's quality of life and plays an important role in the prevention of cardiovascular disease and osteoporosis. Its effects on skin and connective tissue are of remarkable interest, but its clinical and therapeutical correlates are still to be defined.

THE ASSESSMENT OF CUTANEOUS AGEING

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Many factors, genetic, hormonal, environmental and others are involved in cutaneous ageing. The ageing process is characterized by thinning of the skin, loss of elasticity and deepening of normal expression lines. The skin is dry, rough, telangiectatic, and spottily hyperpigmented or hypopigmented. Certain modifications appear fairly suddenly at more or less advanced ages; others are slower and more progressive and extend over the entire range of ages.

Qualitative and quantitative methods have been developed to evaluate the clinical and histological changes in cutaneous ageing. The application of physical methods (measurements of the cutaneous torsional elasticity, image analysis of the microrelief of the skin, TEWL, the characterization of desquamation, etc.) to studies of the skin is very interesting because they are, in general, noninvasive and permit a relatively precise interpretation of the phenomena associated with the ageing process.

What's new in true aging?

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True aging process differs basically from photoaging on macroscopic, histologic and molecular levels. The overall picture of intrinsic aging is atrophy of the epidermis (in contrast to photoaging), a profound atrophy of dermis with destruction of both collagenous and elastic components. In contrast to photoaging, intrinsically aged tissue shows a decrease in the amount and density of elastic fibers. The elastin mRNA expression in fibroblasts decreases, whereas the expression of fibronectin does not change. There is a decreased expression of collagen type I and type III genes and collagen synthesis is reduced. The changes in collagen are related to imbalance between matrix synthesis and increase in proteolytic enzyme activity, however the inhibitors of metalloproteinases (TIMPs) remain to be established. The changes of fibroblast activity with widespread destruction of extracellular matrix architecture may be due to fibroblast terminal replicative capacity that is gradually manifested during aging. This process can be explained by the telomere hypothesis, i.e. by the loss of telomeric repeats from the end of chromosomes leading to the arrest of cell division.

MODERN ENDOCRINE ASPECTS OF COSMETIC DERMATOLOGY

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Recent physiopathological and molecular facets of the interrelationship between the endocrine system and the skin will be discussed:

. Retinoic Acid (RA) receptors are members of a superfamily of nuclear receptors, including those for steroids, thyroid hormones and Vitamin D, which exert their fundamental action by governing embryonic and postnatal differentiation of several tissues. A partial end-organ insensitivity of the skin to RA has been hypothesized in aging, the later stage of the developmental genetic program. This acquired tissue resistance to RA may be partly overcome by pharmacological doses of RA, as demonstrated by recent *in vitro* and *in vivo* studies, supporting the efficacy of all trans RA in the repair of photodamaged and aging skin, which have led to the diffusion of RA-based cosmetics;

- extreme insulin-resistance syndromes (IRS) are characterized by dermatologic alterations such as hirsutism and acanthosis nigricans. Recent molecular studies have revealed several mutations in the gene coding for the insulin receptor which result in various types of derangement of the insulin signal transduction pathway, allowing a new molecular classification of the IRS;

- a common molecular pathogenesis links four different syndromes. Papillary thyroid carcinoma, Hirschsprung's disease, Multiple Endocrine Neoplasia (MEN) type IIA and IIB, the latter two associated with dermatologic lesions such as cutaneous lichen amyloidosis and multiple mucosal neuromas, are caused by different alterations of the same gene;

- the latest treatment of androgen-dependent hirsutism using finasteride, a potent 5 α -reductase inhibitor, employed in the management of benign prostatic hypertrophy, will also be outlined;

- skin should not be regarded merely as the target of normal or anomalous hormone action but also a useful vehicle for the delivery of hormone therapy. Transdermal administration of estrogens and the recent exciting reports on the possibility of ultrasound-mediated transdermal delivery of polypeptidic hormones, such as insulin and erythropoietin, will be reviewed.

Correlation between metabolic pattern and sebum production

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Hairs and sebaceous glands exist together as the pilosebaceous unit (PSU). Before puberty the PSU consists of a virtually invisible hair and a tiny sebaceous gland. At puberty, the PSUs differentiate into sub-types, depending on their location: in sexual hair areas the hair develops completely to terminal sexual hair, while the sebaceous gland maintains small dimensions. In acne-prone areas the hair remains vellus, while the gland enlarges enormously. The most important factors involved in the development of the PSU are the androgens, both of ovarian and adrenal source. However, while the sensitivity of the hair follicle to circulating androgens changes in different areas (decreasing from pubis to head), such a variability does not exist in the sebaceous gland, which seems to be uniformly and more sensitive to androgens. Its maturation starts during adrenarche, when androgen levels are still too low to exert any effect on the hair follicles. In addition to this lower threshold to androgens action, other factors seem to be involved in the stimulation of the sebaceous gland and control of sebum production. In vitro studies have shown that sebocytes grow best when hydrocortisone and insulin are added to the medium. In vivo, sebum overproduction is observed in some clinical conditions such as hyperprolactinemia, Cushing syndrome, disturbed thyroid function, and as a consequence of stress. Conversely, estrogens seem to directly inhibit the activity of sebaceous glands. Growth hormone (GH) also is likely to play a role in PSU growth and function. In hypophisectomized rats, T is not able to restore sebaceous gland function, unless exogenous GH is administered. GH may act directly through specific receptors, identified in sebocytes, or indirectly, via IGF-I. The age of maximal sebaceous gland activity (corresponding with the highest incidence of acne) coincides with the peak in GH and IGF-I levels occurring at midpuberty. In addition, in animal models, GH stimulatory effect is antagonized by antibodies to IGF-I. It seems likely that insulin in large amounts could interact with IGF-I receptors and stimulate sebocytes. Finally, the activity of androgens and IGF-I could be interrelated given the stimulatory effect of androgens on IGF-I. The above observations give a pathophysiologic explanation for the increased sebum production observed in clinical conditions such as hyperandrogenism, peripheral insulin resistance and hyperinsulinism, and obesity.

SEBUM PRODUCTION IN POSTMENOPAUSAL WOMEN: EFFECTS OF HORMONE REPLACEMENT THERAPY.

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Introduction: Sexual steroids induce marked variation of the skin during the menstrual cycle. In postmenopause epidermis, hairs and derma became thinner and sebaceous glands hypotrophic. Clinically, postmenopausal women (p.w.) complaint of skin and hair dryness, skin desquamation, nail fragility. This effects have been mainly related to the estrogen deprivation and notwithstanding the relative hyperandrogenism occurring at menopause the production of sebum results significantly reduced. Positive effects of estrogen replacement may be limited by the action of synthetic progestins that possesses also androgenic properties causing seborrhoea and abnormal hair growth.

Objective: the aims of the study were to evaluate: 1) the modification in skin hydration, seborrhoea and pH in fertile women during their follicular and secretory phase of menstrual cycle; b) the variation of these parameters in p.w., before and during hormonal replacement therapy (HRT).

Methods: Fifteen women in fertile age and ten women in menopausal age were enrolled in the study. Exclusion criteria were w.o. from E/P from at least 6 months, good general conditions, normal weight; all fertile women were normally menstruating and all p.w. had no contraindication to HRT. All of the women underwent a non invasive skin evaluation by means of an appropriate equipment (3C System Dermotech, Micronova) providing data concerning skin hydration, sebum production and pH. In the fertile group measurements were done in the follicular (7th-10th day of the cycle) and in the secretory phase (20th-24th day). P.w. were evaluated in basal conditions, after 3 weeks of treatment with transdermal estradiol (E2) (Estraderm TTS 50, Ciba-Geigy) and after 10 days of combined therapy E2 + nomegestrol acetate (n.a.), a new synthetic progestin (Luteinyl, Schering).

Results: Data from p.w. without HRT showed a very low skin hydration and sebum production; HRT was able to reproduce in a short time values comparable to that of normal follicular phase and secretory phase depending on the administration of only E2 or E2+ n.a., respectively.

Conclusions: A part from the well known metabolic advantages of HRT in menopause, the data of the present study demonstrate a beneficial effect also from a cosmetic point of view; n.a. showed not to induce an abnormal increase of sebum production.

ANDROLOGIC COSMETOLOGY

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Gynecomastia is a common request for consultation in Andrology practice. We define Gynecomastia as the presence of developed mammary gland in man.

Gynecomastia is a very common condition during male puberty, but it is necessary to differentiate true gynecomastia from wrong gynecomastia, also defined adipomastia. Adipomastia is the presence of fat near the mammary gland.

Clinical and instrumental examinations are required to differentiate each from an other and to start a correct medical and/ or surgical approach.

**THE AESTHETIC DAMAGE AFTER GYNAECOLOGICAL OPERATIONS
FROM THE MEDICO-LEGAL POINT OF VIEW.**

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The judicial cases in a medical field have increased enormously over the last few years as a result of the consciousness of the patient in regard to his health and also for his awareness of his being a bearer of a right sanctioned by Constitution, that is of his being able to refuse any medical cure that is not preceded by a large, informed consent of the person concerned.

In case an aesthetic damage is caused by a surgical operation made for therapeutic purposes from a medico-legal point of view it would be considered in a different way from a damage consequent on an operation made only for aesthetic purposes, as in this case the work of the Surgeon is directed towards the achievement of an aim unlike the one of recovering physical health, as viceversa it happens in case of a traditional surgical operation.

So in this note there are examined the various aspects of these problems in the light of the latest jurisprudential directions.

P. ACNES: A NEW TARGET FOR HUMAN ANDROGENS

Authors: F. Landi, R. Capizzi, G. Guerriero, L. Celleno, M.G. Borgia, E. Nenini, I. Liberale, F. Leone e P. Mazzella

When the *Propionibacterium Acnes* in the pilosebaceous follicle is stimulated by androgenous hormones, it can produce factors that induce acneic disorders.

Up to now it was thought that the pilosebaceous follicle was the only androgen target.

Our aim in this study was to ascertain whether *P. Acnes* is itself an androgen target.

We used a *P. Acnes* strain extracted from a comedo of a patient affected by acne.

This was cultivated on Schaedler Agar with vitamin K and 5% sheep blood (BBL), incubated for 48 hours in an anaerobe atmosphere at 35-37°C.

The germ was identified by means of Sceptor-Anaerobi MIC - ID (Becton Dickinson) and further biochemical tests indicated in the Anaerobe Manual.

GLC was used to reveal production of acetic and propionic acid.

In order to identify any eventual changes in other active metabolites (DHT, Androstendione, brought about by *P. Acnes* in Testosterone (T), we added T stained with Tritium to the culture medium.

The germs were then incubated for 0h, 3h, and 24 h.

The ether extracts of the respective growths were analysed chromatographically in TLC on silica gel (Merk 60 GF 254) in 1:1 benzene ether. Observation of slides using UV rays and counter determination failed to find evidence of testosterone metabolites corresponding to DHT and A.

To ascertain the possible effects of androgens (T and DHT) on *P. Acnes* morphology we added T and DHT in final concentrations up to 10.9 ng/ml (T) and 3.9 ng/ml (DHT) to the culture medium.

The pellets containing *P. Acnes* were examined by electron microscope.

When compared with controls incubated without hormones, the samples treated with DHT showed clear signs of vacuolar degeneration and alteration in the cell membranes.

Similar, though less apparent signs were also present in the samples incubated with testosterone.

These results, that need to be backed up by further investigations, are strong evidence of the action exerted on *P. Acnes* metabolism by DHT and, to a lesser extent, by testosterone.

If this finding is confirmed, we shall have to reconsider our ideas on the origin and development of acne.

USE OF VITAMIN-A GEL FOR THE PROPHILAXIS OF POST-PARTUM VULVO-VAGINITIS

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This is our prelliminary experience of the use of a vitamin gel (vit.A and vit.E) for the prophylaxis of the post-partum vulvo-vaginal pathology.

50 patients were treated and compared to a similar control group.

All of them had undergone episiorrhaphy.

Data show a considerable reduction of the disease in treated cases, and authorize further study on the subject

BIOTRANSFORMATION ROUTES TO LIPID-BASED SKIN CARE INGREDIENTS

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Biotransformation, using either isolated enzymes or whole cells, offers many advantages for the synthesis of speciality chemicals. The mild reaction conditions and high specificity often result in improved colour and odour, reduced refining, lower energy input and reduced waste. Biotransformation can also lead to novel materials, not easily accessed through conventional chemistry. The importance of lipids in epidermis structure and function makes the numerous possibilities obtainable from the biotransformation of lipids of particular interest for the preparation of functional skin care ingredients. Medium chain, saturated dicarboxylic acids, such as azelaic acid (nonanedioic acid) have shown utility as anti-acne and skin lightening agents but their relatively poor antimicrobial activity, coupled with formulation difficulties due to their high melting points, makes them less than ideal actives. Unsaturated dicarboxylic acids are difficult to synthesise chemically. However, a range of new unsaturated dicarboxylic acids have been produced by biotransformation of fatty acids using a lipophilic yeast fermentation and their potential use as anti-acne and skin lightening actives has been investigated by *in vitro* studies. These unsaturated molecules have lower melting points than their saturated counterparts and, compared to azelaic acid, they possess vastly superior antimicrobial activity against Gram +ve bacteria and are active over a much wider pH range. In addition, when tested specifically against *Propionibacterium acnes*, the causative agent of acne, they were equally active against antibiotic sensitive and antibiotic resistant isolates. The new unsaturated dicarboxylic acids may also be effective skin lightening agents as they inhibit tyrosinase activity and when added to melanocyte cultures melanin synthesis is decreased.

THE SCOPE OF MINERAL OIL IN PERSONAL CARE PRODUCTS AND ITS ROLE IN COSMETIC FORMULATION

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White mineral oil is a commonly used ingredient in nearly all types of personal care products, from emulsions to anhydrous cosmetics. It provides many benefits to personal care formulations, including moisturization and emolliency, and is safe and effective for topical use. Interestingly, the purification process of mineral oil permits it to be considered "natural" when compared with the purification of other natural ingredients.

NATURAL COLORS FOR NATURALLY COLORED HAIR.

Keith C. Brown and Edward Marlowe (Clairol Research Laboratories, 2 Blachley Road, Stamford, CT 06922, United States of America)

Dyes derived from natural sources were the only materials available to change the color of hair for many centuries. However, the synthetic dyes, initially discovered in the latter part of the Nineteenth Century, rapidly displaced natural dyes as the preferred materials for hair dyeing. Even with the slight resurgence in their popularity recently, limited performance and range of colors means that most natural dye products do not appeal to the typical hair color user. We have evaluated an alternative means of dyeing hair which involves chemically simulating the natural biological pigmentation pathways. Natural hair is colored by *eumelanins* which are biosynthesized from tyrosine through 3,4-dihydroxyphenylalanine (DOPA), and *pheomelanins* which incorporate, in addition, cysteine. Shade is varied by chemical composition of the pigment and also by the size and shape of the pigment particle and its concentration in the hair fiber. Many of these variations are reproduced by the chemical processes that we have developed which exploit the oxidative chemistry of DOPA. However, in our case, shade changes are largely controlled chemically but do include the formation of red shades from combinations of DOPA and cysteine. Such chemistry gives much more versatility and control in hair coloring than is available from use of the naturally occurring dyes and, in most cases, much more natural-looking color results.

**“SAFE and EFFECTIVE UV PROTECTION using
INORGANIC SUNSCREEN INGREDIENTS”**

S.R.Spruce (Tioxide Specialties Limited, Billingham, UK)

Research within the medical community is generating more and more evidence as to the danger of human exposure to Ultra Violet light. The global incidence of skin cancer has risen alarmingly over the past few years with, for example, as many as 1 in three people in Australia expected to exhibit one form or another of the disease.

Recently the effect of UVA radiation, as well as the expected UVB radiation, has been demonstrated to be significant in cancer formation and consumers are becoming more aware of the need to protect against both UVA and UVB.

After a brief explanation about the nature of UV light and its incidence on the earth, the use of inorganic sunscreen materials based on fine particle titanium dioxide (20-100nm) and zinc oxide (60-80nm) is explained. The use of both in-vitro and in-vivo test methods is shown to compare the theoretical protection predicted by the measured attenuation of UV light with the empirical SPF data. Formulations combining different inorganics are given and the advantage of using both TiO_2 and ZnO in one formula is demonstrated, showing high SPF values with very broad spectrum protection.

The inherent safety of inorganic materials can be used to best advantage in those formulae targeted at all day every day wear and for use in hypoallergenic formulae for those with sensitive skin.

TOXICITY EVALUATION OF A NEW POLYMERIC ADDITIVE FOR SUNSCREENS

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A toxicity profile of a new polymeric additive for sunscreens, Formulation Aid Polymer (FAP), was prepared by using a structure-activity-relationship (SAR) approach and a study in humans. An initial evaluation of acute toxicity (oral and dermal LD₅₀ and skin and eye irritation) was performed using SAR and toxicity data available for analogous polymers that had already undergone testing in the appropriate mammalian species. A similar evaluation of aquatic toxicity was also performed in this manner for bacteria, algae, Daphnia, and fish. These SAR evaluations were followed by evaluation of skin irritation and photosensitization in humans using a modification of the photomaximization test. Based upon the SAR evaluation, it was concluded that the FAP would be non-hazardous by oral and dermal exposure, and non-irritating to the skin and eyes. SAR evaluation of aquatic toxicity showed FAP would be non-hazardous to aquatic organisms. The human photoallergenicity study showed that the FAP was non-irritating and non-photoallergenic in humans.

FULL SUN PROTECTION BY NO CHEMICAL SCREENS

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It is well known that sunlight and ultraviolet radiations (UVR) from artificial sources can be tonic or toxic to human skin. Moreover sunlight is life supporting, yet we cannot efface or ignore its cumulative effects that are manifested as skin aging, solar elastosis and skin cancer. To prevent these light-induced reactions, effective sunscreens and photoprotective measures are essential. This work aims to demonstrate the effectiveness of sun-protective coloured creams containing an high quality of a natural mud together with different concentration of micronized zincum oxide and titanium bioxide. These emulsions were inized as A, B, and C. The filtering properties have been tested by studing the erythema and melanine intensity alterations through a non-invasive method, the spectrometry. The spectrometer analysis has been realized through the Derma-spectrometer, able of mesuring the percent light transmetted by the hemoglobin between 520-580 n.m.. The study has been executed on 30 volunteers (between age 35 and 45) divided in 3 groups (A, B and C) and all belonging to the same phototype. These subjects have been only once irradiated with UVA-UVB OSRAM ultravitalux 300 W lamps on 3 preterdetermined (cm. 1x1) areas, at a distance of 20 cm. and for 5". The first has been treated with A cream, the second with the B cream the third with C cream. The lesions' evolution was observed every 4 hours for the first 12 hours and afterwards daily till the 14th day from the irradiation. The observed skin value before irradiation was 12.0. At 2 hour from the exposure the erythema index medium value was on A 13.1, on B 16.4 and on C 17.0. At 7 days of distance the observed medium value was 12.2 (A), 16.0 (B) and 16.6 (C). At 14 days 12.2 (A), 14.0 (B) and 14.2 (C). Besides the filtering power of these coloured creams, we also wanted to evaluate its eventual hydrating and sebum-regulating properties, with the aid of the 3C COMPUTERIZED DERMOTECH SYSTEM. It permits a quick determination of pH, surface lipids and skin hydratation while enviromental conditions are automatically standadized (RH= 50% t= 22° C). All volunteers divided into the 3 groups (A, B and C) of 10 individuals received randomly cream A, B or C to be applied twice a day for 60 days. From the obtained data we are able to conclude that the A cream has an excellent protection factor while the B and C creams have a protection factor similar to each other and undoubtedly lower than the A cream. Moreover all these natural creams increase skin hydration from 30 to 35% while the amount of sebum ad pH have not displayed significant modifications.

FORMULATION AND INVESTIGATION OF STABILITY OF SUNSCREEN EMULSION WITH MICRONIZED TITANIUM DIOXIDE

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Titanium dioxide (TiO₂) is used in sunscreen preparations because it offers high protection against UVA, UVB, VIS and IR-radiation, it is physiologically inactive, chemically- and photo-stable, and compatible with the ingredients of sunscreens and chemical and/or physical filters. Additionally, it is found that, with well formulated vehicle, titanium dioxide (TiO₂) can provide sun protection factor 15, only in 5% concentration.

Disadvantage of this sunscreen filter, appearance of white trace on the skin after application of the product, can be eliminated by using micronized titanium dioxide (TiO₂) average grain size less than 60 nm (10⁻³ mm). These fine particles have expressed tendency for forming aggregates that could be the reason for instability of the formulation and separation of the phases as well as changes in its protecting activities.

Purpose of this investigation is to formulate cosmetically acceptable and stable emulsion for sun protection, with different concentrations of micronized titanium dioxide (TiO₂), previously dispersed in oily medium. We have presented the method for producing a basic emulsion, W/O type, prepared with organosilicone W/O emulsifier (ABIL WE 09. Th. Goldschmidt, Essen, Germany) in hydrophile-lipophile phases ratio 75:25%. Micronized titanium dioxide (TiO₂) is incorporated in this emulsion on count of light paraffin oil, in concentrations between 0.75 - 6%. In addition to monitoring of organoleptic properties, pH, particle size, viscosities, stabilities and types of these emulsion were investigated in function of time and temperature.

The results of this investigation shows that micronized titanium dioxide (TiO₂) can be incorporated in the emulsion W/O type, in monitored concentration, without significant influence on its appearance, applicability and stability.

THE EFFECT OF TRETINOIN ON THE MOLECULAR
BIOLOGY OF SKIN AGEING.

BY

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For years, Various creams have been offered to the public with unsubstantiated promises that they can reverse the effect of ageing on the skin. Tretinoin is the first therapy to undergo controlled testing and proved to reverse some of the cutaneous changes caused by ageing and photodamage. (Goldfarb, et al., 1989).

The exact mechanism of action of tretinoin is unknown, but it may work by binding to specific nuclear receptor. Retinoic acid receptor (RAR). RAR activated by retinoic acid binds to DNA, affecting differential gene expression. A number of invitro and invivo studies with human and animal skin have provided a wealth of information on the effects and mechanisms of retinoic acid, but the exact manner in which RAR cause differential messenger RNA transcription still remains unknown . With topical application of retinoic acid, terminal differentiation of keratinocytes is altered, epidermal cell proliferation and keratohyaline granule formation are stimulated, and mucin glycosaminoglycan-like material is secreted into the intercellular space. The cohesion of the epidermal cell and activity of the melanocytes are reduced. Functional changes in the epidermis include an increase in transepidermal water loss and permeability. In the dermis collagen synthesis is stimulated. The superficial vasculature undergoes vasodilatation and angiogenesis.

ATOPIC DERMATITIS IN CHILDHOOD : SAFETY AND EFFICACY OF A NEW AMMONIUM LACTATE 6% EMULSION AGAINST ITCHING AND CUTANEOUS XEROSIS.

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Ammonium lactate (AL) is the salt of lactic acid neutralized with ammonium hydroxide. Lactic acid, an α -hydroxyacid, is reported to be one of the most effective naturally occurring humectants in the skin and to reduce excessive epidermal keratinization. AL is as effective but better tolerated than lactic acid. Its safety was well documented by our previous double-blind study on 20 newborn infants treated during the first three days of life. Taking into account atopic dermatitis most recurrent symptoms, itching and xerosis, and the peculiar cutaneous iperreactivity of the disease, a 4 week, double-blind randomized study on efficacy and safety concerning daily use of a new AL 6% emulsion was conducted. 20 little patients (age range: 6 months- 6 years), of both sexes, affected by atopic dermatitis were treated, three times a day, with a W/O emulsion containing 6% AL on eczematous non-exudant lesions and with the same vehicle without AL (placebo) on controlateral eczematous plaques. Clinical and instrumental non invasive evaluations (epicutaneous hydration, lipid content, pH) were performed in baseline conditions on perilesional healthy skin and at 0, 15, 30 days of treatment on lesional treated skin (AL and placebo). Both treatments were well tolerated by all patients. Baseline values of hydration, lipid content and pH were found to be significantly lower (Paired t test) for eczematous skin than healthy perilesional skin. After 15 and 30 days all these values increased significantly for both treatments (ANOVA, Bonferroni) especially AL. Clinical findings confirmed that 6% AL emulsion was more effective than placebo on xerosis and itching. Increased epicutaneous pH values following 6% AL treatment seem to correspond to the reduction in pruritus referred by the patients. This hypothesis, discussed by the Authors, has to be confirmed by new, more detailed studies.

KOJIC ACID: A NEW PRODUCT FOR AN OLD PROBLEM

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Cutaneous depigmentation is an old problem which has been approached using several topical agents. Among these, Hydroquinone is presently considered an excellent depigmenting agent for clinical treatment of various pigmentations.

Nevertheless, monobenzyl ether of hydroquinone has been known as a cause of both occupational vitiligo since the 1930s by destroying melanocytes, and mottled pattern of leucoderma (confetti - like depigmentation). Ochronosis following local application of high concentrations of hydroquinone (e.g. 3.5 - 7.5 %) has been also described.

Different effective depigmenting agents, i.e. kojic acid, have been introduced in the treatment of hyperpigmented cutaneous lesions. These agents, which have hypopigmentating effect without destroying melanocytes, should be presently evaluated by the dermato-cosmetologist as an alternative to the use of the possibly "dangerous" hydroquinone.

Advances in Tumescent Liposuction

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Augusto Montalvo, M.D. Clinical Assistant Prof.
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Recent additions to the liposuction armamentarium allow for improved outcomes in out-patient tumescent liposculpture. The addition of peristaltic pumps have allowed for a more uniform and comfortable administration of regional tumescent anesthesia. An additional benefit of the peristaltic pump is a reduction in total procedure time.

The addition of narrower gauge liposuction cannulas together with the continued refinement of technique allow for improved outcomes for patients who desire treatment of their lipodystrophy for functional or aesthetic reasons. The advance of narrow gauge cannulas allow for more subtle shaping and tunneling in the area of lipodystrophy. They also reduce fatigue on the surgeon and are more comfortable for the patient.

The narrowing of the cannulas requires a modification in liposuction technique. The number of tunnels is increased and the tunnelling matrix is increased.

Advances in tumescent liposuction will allow liposuction to play a central role in the armamentarium of the Cosmetic Dermatologist in the 21st Century.

Why Take Interest In Cosmetic Dermatology
Mary P. Lupo, M.D. (New Orleans, LA, USA)

The practice of Dermatology is gratifying for many reasons, not the least of which is the satisfaction of helping patients. The addition of cosmetic procedures adds a further dimension to the dermatology practice.

Besides financial advantages, a cosmetic practice allows for further diversity and stimulation for the dermatologist.

Understanding cosmetic skin care products allows us to maintain our position in the forefront of all skin care professionals, and performing cosmetic procedures allows dermatologists to claim their proper place among surgical physicians who pioneer, perfect and perform cosmetic procedures.

These points will be discussed.

COSMETOLOGY OF SULPHUROUS WATERS

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Mineral waters are natural solutions which, for the specific geological conditions, are characterized by a "chemico-physical dinamism", which is as a greater extent responsible of their action. Mineral waters may be classified in many ways according to the different chemical and physical distinctive elements (capacity, temperature, fixed balance, molecular concentration, chemical composition, presence of distinctive oligo-elements) and to the supposed or demonstrated mechanisms of their therapeutic action (1). In Sulphur water at least 1 sulphur grade is present.

Thermal sulphur waters exert beneficial anti-inflammatory, cheratoplastic and pruriginous effects.

Sulphur activity in the skin seems to be related to the interaction between this substance with cysteine and with its catabolites. Sulphur, reacting with cysteine, interacts with hydrogen sulphate (H_2S), promoting the keratinization at low concentration and explicating at higher concentrations a well known keratolytic effect, determining the keratines-proteolysis (2).

Sulphur may also interact with the ossidrilic radicals in the deepest layers of the epidermis, producing sulphur and di-sulphur hydrogen, which may in turn be transformed into H_2SO_6 , i.e. the main responsible of the anti-bacterial and antifungal effects of sulphur. Moreover striking data have been obtained by in vitro studies, which have shown that sulphur water is able to inhibit the proliferation of both normal T lymphocytes and T cells obtained from patients with chronic immuno-mediated diseases.(3) This sulphur water may inhibit the production and/or release of cytokines, particularly interleukin-2 and Interferon gamma. These data, which should be confirmed by in vivo studies, suggest that the benefit of balneology with sulphur water could be related to a modification of local immunologic mechanisms.

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PEELINGS FOR MELASMA

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Chemical peeling can be used alone or in combination with other bleaching agents for the treatment of epidermal and mixed types of melasma.

For the epidermal melasma, (checked with Wood's lamp) even superficial chemical peeling gives excellent results. For the mixed types of melasma, a medium depth chemical peeling is needed. However, chemical peeling sometimes stimulates melanogenesis resulting to a worsening of the hyperpigmented patches, especially in dark skin individuals. The combination of medium depth chemical peeling, followed by a treatment concised of Hydroquinone 3-5% topical Solution, Hydrocortisone Acetate 1% cream and tretinoin 0,05% Cream has been tried with encouraging results for the treatment of epidermal and mixed types of melasma.

Clinica Dermatologica Università degli Studi de L'Aquila

PEELINGS IN THE TREATMENT OF ACNE

S. Chimenti

Acne is a multifactorial, chronic disease that involves the pilosebaceous unit and the perifollicular area. In addition to traditional therapies, recently chemical peelings have been particularly used in the treatment of acne. Chemical peelings consist of the applications of acids on specific cutaneous areas in order to cause a controlled damage and a consequent improvement of aesthetic aspects. Peelings can be divided in superficial, medium and deep. Among the substances used for chemical peeling, particularly used are alphahydroxyacids (AHA's). They are a group of organic acids found in natural foods, such as sugarcane (glycolic acid), milk (lactic acid), apples, (malic acid), citric fruits (citric and ascorbic acid), grapes (tartaric acid). Glycolic acid is the smallest molecule among this family and this structure makes it particularly easy to handle for dermatological applications since it can seep through the skin layers. Glycolic acid has been shown to diminish corneocyte adhesion at the lower levels of the stratum corneum and to cause epidermolysis, further supporting its therapeutic use in some dermatological conditions such as acne, actinic keratosis, age spot, warts, aging and photoaging. The aim of this presentation is to show our experience about the efficacy of glycolic acid in the treatment of acne vulgaris, used alone or in association with other therapies.

THE USE OF GLYCOLIC ACID AS A
PEELING AGENT

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P.Premo (Director of Corporate
Communications/Education & Tech.
Services for Murad Inc, Los Angeles,
CA. USA)

Glycolic acid, a member of the alpha hydroxy acid group found in natural foods, is a new, extremely versatile chemical peeling agent. Many defects of the epidermis and papillary dermis can be treated with glycolic acid, applied in a variety of concentrations ranging from 20% to 70% and left on for a variable period of time dependent on the condition being treated. People of almost any skin color or type are candidates for this peel and many complications seen with other peels are minimized. Results from a histological study comparing epidermal and dermal effects of trichloroacetic acid and glycolic acid peels are presented as well as photographic examples of cutaneous results from glycolic acid peels.

HOW TO MANAGE PAIN IN COLLAGEN IMPLANTS: COMPARISON OF MOST USED ANESTHESIA TECHNIQUES

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**Department of Dermatology, University of Siena,
Italy***

**The frequent use of collagen implants to correct
scars or wrinkles or to improve lips volume
always presents a problem: pain and fear of pain
in the patient.**

**Many techniques are suggested to control pain and
induce local anesthesia, i.e. use of:**

- 1. ethyl ether (or ice spray)**
- 2. topical lidocaine solution**
- 3. infiltration of local anesthetics**
- 4. superficial local anesthetic cream (EMLA)**

**The benefits, adverse reactions, compliance of
patients are discussed.**

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- 2. Goodacre TEE, et al .Split grafting using topical local
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THE Inthes MUD THERAPY. AN OBJECTIVE AND INTEGRATED RESPONSE TO AGING CRITICAL LEVEL.

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Centro di Cosmetologia Chimica dell'Università di Padova

*Centro Studi Termali P. D'Abano

The integrated therapeutic scheme (*Inthes*) is the first objective thermal protocol introduced in mud therapy (1).

Inthes combines the biomimetic and therapeutic effects of bioadhesive dispersed systems (*bads*) with mature thermal mud. *Bads* are thermal adjuvants able to induce a biomodulating-effect on the epidermal barrier function without side effects.

Mature thermal mud is a heterogeneous matrix which undergo maximum microstructural modifications (*RTM index*) during the bioregeneration process.

After few applications, *Inthes* allows to obtain the epidermal barrier function normalization followed by a reproducible response to the thermal elements released from thermal mud.

By effect of *Inthes* the quali and quantitative bioinorganic sweat composition and the rheological memory of thermal mud applied on the skin are well correlated to the aging critical level.

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ARE WE READY FOR A GRANT APPLICATION TO THE NATIONAL INSTITUTES OF HEALTH ALTERNATIVE MEDICINE DIVISION?

Larry E. Millikan, M.D.

The possibilities for grant preparation and data gathering for spa and balneo-therapy have never been greater. The new section on Alternative Medicine, at the National Institutes of Health, will provide such opportunities and our initial beginnings should allow us, over the next six months to get the appropriate materials together for such. The initial steps should be consolidation of data from the multiple international participants, in regards to therapy, present, historical and otherwise. The results of such therapy, especially with the Dead Sea data, which while accepted in Europe, needs further review for U.S. interpretation. The other area in spa therapy, that needs careful work by members of the group, would include the nutritional and lifestyle modifications in spa therapy that are the focus for medical planners in the U.S. at the present time.

The orderly steps to be taken include:

1. Consolidation of presently available data,
2. Identification of key investigators,
3. Identification of key parameters to measure effects - successive therapy, etc.,
4. Overview of the planned approaches to evaluation of spa therapy, and parameters to measure the health benefits of same.
5. Financial review of co-investigators needs.

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<i>Controversies in dermatology</i>	<i>p.119 - p.122</i>
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HUMAN MODELS FOR TESTING DERMATOLOGICAL PRODUCTS AND COSMETICS

W. Schalla (Cutaneous Studies International, CSI, Freiburg, Germany)

The overlap between dermatology and cosmetology becomes more and more important within the last years underlined by expressions such as 'cosmeceuticals' and models used for testing dermatological as well as cosmetic products. A number of models and test procedures can be applied in either domain, but their sensitivity has to be adapted to the aim.

The skin conditions for testing can be classified into 4 categories: 1) Normal, 2) predermatotic ('sensitive', xerosis, preaged by chronic UV exposure, preventive therapy in dermatoses) 3) artificially diseased, and 4) involved skin of various dermatoses. Common test models and techniques used on normal and predermatotic skin are acute and repetitive irritation testings (open or occlusively), daily use tests at the flexures of the arms or in the face, assessed by clinical scoring, transepidermal water loss, horny layer hydration, skin replicas, etc.

Models on artificially diseased skin will be reviewed in more detail: The UV erythema test, allergic test reactions and tests on stripped skin are well established. Less well known are particular techniques and models related to the skin flora although they are of high interest for cosmetics and cosmeceuticals. The occlusion test, the expanded flora test, the persistence test and the ecological shift test are done on normal skin. The skin barrier has to be disturbed for testing of barrier creams and for induction of experimental bacterial and fungal infections. Such standardized infections take into account the in vivo conditions. Human models for testing comedogenicity, prevention of aging and skin cancer extrapolate from acute effects.

Cosmetics as Complementary Prescriptions to Dermatologicals

Lawrence Charles Parish, M. D.,
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Director, Jefferson Center for
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Jefferson Medical College,
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Cutaneous maladies are often associated with embarrassing, even disfiguring lesions. Although the dermatologic process may be self-limiting, the patient can believe that there will be permanent hyperpigmentation on the chest or never-ending facial eruptions. The clinician must address these perceptions by complementing the therapeutic regimen with appropriate cosmetic advice. Sometimes, reassurance that the dermatitis will last only a few weeks or that acne need not scar is sufficient. Other times, a recommendation for cosmetics will allay the patient's anxiety and even facilitate compliance with the dermatologic program.

Cosmetic treatment of nail dystrophies

R. P. R. DAWBER

The human nail, chemically similar to horn and hoof, is not essential for the survival of *Homo sapiens*, but it has many important functions that are crucial for the efficient use of the hands and feet. The nail is a prime source for the transmission of organisms, both macro and microscopic, toxins, irritants and allergens. Maintaining nail cleanliness is essential to many aspects of health. The nail is also a focus of great importance; for many, cleanliness alone does not achieve aesthetic satisfaction. A multitude of products, implements and procedures are now on sale to enhance the appearance of nails (and, therefore, fingertips). While the cosmetic industry encourages and caters for the trappings of nail care and adornment, the motivation is probably innate; nail beautification was an established practice in societies last past; the long fingernail, often accentuated by gold and jewelled fingertip extenders, was indicative of high rank and station in society. Thus for social, cosmetic and cultural reasons and to aid normal function of digits with abnormal nails it is important to consider cosmetic and podiatric or chiropody treatment for dystrophies in which cure is not possible.

There are a great many nail conditions which need camouflage. Several factors should be taken into account:

- age of patient
- sex
- type and origin of the dystrophy
- affected part of the nail apparatus: nail plate of distal phalanx

Available cosmetic means used for disguising the nail dystrophies include:

- nail varnish; stick-on nail dressing
- preformed artificial nail
- sculptured artificial nail
- nail wrapping
- adaptable nail prosthesis
- abrader

Biological functions and therapeutic use of urea

W. Raab, Vienna, Austria

Urea (carbamide), the diamid of carbonic acid, is a naturally occurring degradation product of proteins in humans. On the skin surface, urea acts as moisturizer and makes up to about 7% of the NMF. The dry skin of atopic individuals lacks urea. - On healthy skin, urea is well tolerated in concentrations up to 20% and exerts moisturizing, desquamating and antimicrobial properties. Urea which, upon topical use, lacks any systemic toxicity binds water by including it in its crystal structure. In dry environment, this water is slowly released again. - Urea ranges therefore among the most important moisturizers in dermatology and cosmetology and is widely used in dry skin states such as senile skin, photo-damaged skin or atopic skin. The desquamating action of urea accounts for its application in hyperkeratotic skin conditions such as psoriasis or ichthyosis. By its antimicrobial efficacy, urea inhibits the deterioration of dermatological and cosmetic products and acts somehow as a preservative. - By its hydrating and desquamating actions, urea increases the activity of other simultaneously applied drugs such as glucocorticoids, anthralin or tretinoin.

THE COSMETIC TREATMENT OF THE AGING SKIN
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Historically the cosmetic art developed as a means of adornment.

In the past 50 years the cosmetic art evolved into cosmetic science and the emphasis has been on developing products to combat the consequences of continuous environmental insult to the skin. While chemical, physical and mechanical insult play a role in this process by far the most damaging agent to the skin has been the effects of ultraviolet. Aside from the pathological changes of skin cancer the skin changes vary from dryness, wrinkling, discoloration, coarseness and in elasticity.

Cosmetic science has addressed these phenomena in developing a series of products to combat these changes: sunscreens, moisturizer, tretinoin, alpha hydroxy acid and antioxidants.

This paper will discuss the scientific aspects of these agents, the studies which have been done to substantiate the claims made for them, and the future for development of new products to slow and reverse the aging process.

Dermabrasion versus chemical peelings

Patrizia Teofoli, Dept. of Dermatology,
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Chemical peeling, is the application of one or more exfoliating agents to the skin resulting in destruction of portions of the epidermis and/or dermis with subsequent regeneration of new epidermal and dermal tissues. The level of expertise in chemical peeling has greatly improved. This technique is able to produce a controlled wound and it is one the responses of dermatology surgery for reduction or disappearance of actinic keratoses and changes, pigmentary dyschromias, rhythides and selected superficial depressed scars. Chemical peels have probably become the most used agent for treating aging skin at all ages but there is also dermoabrasion, which have been in existence equally as long as chemical peel and both have contraindications, benefits and, problems. The author reports the basic principles, the application and, the advantages of the chemical peels procedure.

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BASIC ASPECTS OF PEDIATRIC COSMETOLOGY

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The constantly increasing sales volume of cosmetic toiletries for infants, children and teenagers indicates their relative importance to the consumer, manufacturer, retailer and pediatricians. These products which include cleansing and hydrating agents, protective creams for diaper dermatitis, powders, oils and sunscreens, are surely useful and effective for hygiene and for skin protection from environmental factors. Despite the declining number of births the sales increase especially, for oils lotions and shampoos, can be attributed to teenager and adult usage.

DETERSION PRODUCTS

a) Shampoos The critical requisites governing the formulation of a safe baby shampoo are pH, skin and eye irritation and eye sting.

b) Soaps Soaps that are used for routine bathing include fatty or non-fatty bars of alkaline soap or syndet, as liquids or gels to which can be added different additives, such as sugars for a transparent soap, antimicrobials for a deodorant soap or lipids for a superfatted soap.

c) Oils and lotions The most convenient method of cleansing the diaper area is by use of mineral oil and/or emollient lotions, followed by dusting with talcum powder. Mineral oil or hydrophobic lotion applied to the diaper soiled area and removed with absorbent cotton, is the most efficient solvent for all the oil-soluble material.

SKIN PROTECTION

For these purposes are generally used protective preparations such as creams or ointments containing emollients, to which might be added or zinc oxide necessary to obtain a thick layer of protective skin barrier.

SUNSCREENS

It has been estimated that the regular use of a sunscreen with a SPF of 15 during the first 18 years of life will decrease the risk of basal and squamous/cell carcinoma by 78%, also preventing immediate photoaging. For these reasons the message is that children should be protected from over exposure to the sun from the day they are brought home from the hospital.

CONCLUSION

Proper care of these products will help to maintain the integrity of the skin, preventing also some skin disorders linked to the excessive UVR exposure.

HOW TO MAKE SUNLIGHT RISKLESS FOR CHILDREN

Dr. Marco Bonci

Adverse reactions to the sun's rays have become commonplace due not only to excessive sunbathing habits, but also due to the increasing number of photosensitizers in our environment. The sun is responsible for a significant amount of human morbidity ranging from acute sunburn reactions to skin cancer formation. Endogenous and exogenous photosensitizing molecules in our personal and general environments supply further pathways for damage.

Presentation against sunburn and the development of keratoses and carcinoma in skin with solar degeneration can be effectively achieved with the topical application of water-resistant sunscreens on regular basis. In fair-skinned individuals, the prevention of skin photoaging is difficult, but the degree of actinic elastosis can be minimized by the daily use of water-resistant sunscreens to habitually exposed areas of the body. Children should be prescribed water-resistant, no-PABA sunscreen lotions or opaque sunscreens that are not irritant to skin and eyes. Moreover, prevention can play a much more important role. This should include avoidance of the midday sun between 10 a.m. and 3 p.m. because of the concentration of the UVB rays during that time; the wearing of protective clothing such as hats and tightly woven garments; and the use of the excellent sunscreens and blocks.

THE DERMATOLOGICAL ASPECTS OF PEDIATRIC COSMETOLOGY

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Pediatric age, and particularly that of the breast-fed infant, with the characteristic physiological skin and a special dermatological pathology, particularly represents an important problem of the cosmetology in the pediatric age.

The baby's skin, compared to that of the adult, is thin, slightly keratinized, has few hairs and is much more permeable to the various substances applied.

It is "naturally" defended by:

- 1) Secretion (sebaceous and sudoral) and scaling processes.
- 2) The barrier of the horny layer.
- 3) Physiological acidity (pH 4 to 6).

In new-borns, the sudoriparous and sebaceous glands are already present and in the latter, the secretion is not only different quantitatively but also qualitatively with respect to puberty and to the adult.

The horny layer, then, is structurally thinner, more fragile and more easily attacked and damaged by external agents.

Finally, knowing the pH value is particularly important in pediatric cosmetology: the former is not uniform on all the skin surfaces, it is less on the smooth surface and more in the folds of the skin (inguinal and axillary). Moreover, in the folds and in the unaired regions, in general, the lack of skin evaporation tends to increase more the pH value due to salification and neutralisation of the fatty acids. Remembering the physiological antimicrobial and antifungal actions of the acidic skin, it is obvious how these corporal zones, mainly in the breast-fed infants are particularly prone to microbial and/or microbial dermatitis, increasing even more the skin fragility of the child.

Thus, it is evident from the results, how at the end, the unchanging of an already balanced delicate skin, is important when a cosmetic product is produced for the pediatric age, that it respects totally all the physical-chemical-structural characteristics that guarantee the eutrophy of the child's skin.

MICROABRASION VERSUS GLYCOLIC ACID IN POSTACNE ATROPHIC SCARS

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Postacne atrophic scars of the face are an "ancient" aesthetic burden which involves the dermatologist, the cosmetologist and the plastic surgeon, and continuously spurs them towards new techniques aimed to obtain the best aesthetic results. Dermoabrasion, a physical modality of therapy, as well as chemical peeling are widely used and referred in literature, as dermatologic surgical procedures in the treatment of acne scarring.

Our clinical experience has been carried out on 20 patients affected by postacne atrophic scars of the face. The study has evaluated controlled comparative parameters between effects of microabrasion with vacuum-operated skin abraders and those of chemical peeling with glycolic acid 70% aqueous solution. Microabrasion removes uniform surface layers of the skin by a jet of microcrystals, while glycolic acid, when applied topically in higher concentrations, causes rapid subcomeal epidermolysis.

The results achieved by microabrasion have been compared with those obtained using 70% glycolic acid to give the treatment of acne scarring the right indication. The results were furthermore evaluated according to the relationship between human phototype and the onset of complications, time required for reepithelialization after each treatment, duration of the therapy course, precautionary measures, postoperative cure and improvements related to the extension and depth of scars.

In our experience, the two techniques are both effective (albeit not resolatory), have the same cost/benefit ratio, can be easily carried out and are not burdened by serious adverse side effects.

NON INVASIVE EVALUATION OF CUTANEOUS REACTIONS INDUCED BY GLYCOLIC ACID

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Glycolic acid peels represent a current procedure to correct various cosmetic and dermatological conditions. The mechanism of action of glycolic acid, however, has not been adequately investigated. We assessed the skin alterations induced by a 70% solution of glycolic acid (Neostrata®) on volar forearm skin by means of non invasive measuring techniques. In 13 patients, 40 µl of glycolic acid were applied 6 and 12 cm below the antecubital fossa, respectively for 1 and 3 min on the right and 2 and 4 min on the left. Visual scoring, measurement of TEWL, colorimetry, capacitance and echographic evaluation by a 20 MHz B scanner were performed at different times: baseline, removal, 30 min, 24-, 48- and 72 h , and at 7 and 14 days. The echographic recordings were processed by a dedicated software (Dermavision 2D Cortex Technology) based on segmentation procedures; an 0 -30 and a 201 - 255 band were selected for the evaluation of the images. Compared with baseline values, an increase of TEWL was observed which peaked at the removal and was still significant at 30 minutes. An increase of capacitance was also observed after removal. No variations in respect to baseline were detected by colorimetry nor by the analysis of the echographic images for the selected bands. To conclude, glycolic acid seems to induce only a transient skin damage, not associated by alterations of barrier function and inflammatory reactions.

CHARACTERIZATION AND USE OF RECONSTITUTED HUMAN SKIN IN TOXICITY TEST

M.T. Conconi, F. Valenti, V. Bassani, A. Bonali, F. Montesi* & P.P. Parnigotto (Department of Pharmaceutical Sciences, University of Padua & * Istituto Zooprofilattico Sperimentale delle Venezie, Italy)

Submerged human keratinocyte cultures are used to test chemicals. The lack of percutaneous absorption which modulates toxic effects makes this model unable to mimic the "in vivo" situation. The corneum stratum is formed first when epidermal cells are grown at the air-liquid interface, originating a reconstituted human skin that resembles the in vivo one. In first step we characterized human epidermis reconstructed in vitro on de-epidermized derma after an one-two-three-four-week air-exposure. Immunohistochemical staining showed that differentiation markers as involucrin, anti-filaggrin, anti-cytokeratin K1 and K11, were present since the first week after air-exposure; lipid composition resembled the "in vivo" one. Nevertheless, the morphology of reconstituted skin changed among the culture periods: by increasing growth period the basal layer became thinner, the corneum stratum, on the contrary, thickened and exfoliation appeared in it after a four week exposure. From our data, when using these cultural conditions, the reconstructed skin in vitro can be used for toxicological studies after a two-week air exposure. In a second step we performed MTT (3-(4,5-dimethylthiazol-2-yl)-2,5-diphenil tetrazolium bromide) assay on this reconstructed epidermis to evaluate the toxicity of the following surfactants: benzalconium chloride, SDS (sodium dodecylsulfate), Tween 20 and Triton x100. We obtained a good correlation between the in vitro data and those reported in vivo with Draize test. Moreover, human keratinocytes cultured in submerged conditions appeared to be more sensitive to surfactants than those grown on de-epidermized derma at the air-liquid interface.

THE MECHANISMS OF ACTION OF RETINOIDS IN THE TREATMENT OF PHOTOAGED SKIN

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Topical tretinoin was proved to be effective in the treatment of photoaged skin, decrease wrinkling and laxity of the skin. Histologically it reverses epidermal atrophy due to the granular layer thinning, increased number of mitoses in keratinocytes, abolishes epidermal dysplasia and atypia. In the dermis there is observed a collagen type I and III deposition and new capillary vessel formation. On the other hand it is also known that retinoids in some situations may decrease epidermal proliferation and exert catabolic affect on mesenchymal cells. The aim of the study was to examine in vitro effects of various retinoids [all transRA, 9cisRA, 13cisRA, arotinoid] on proliferation of transformed keratinocytes lines, normal dermal fibroblasts and vascular endothelial cells, as well as on the expression of collagen type I, III and elastin genes in fibroblast culture. We also studied the effect of the mediators contained in the conditioned media derived from retinoid treated keratinocytes on fibroblasts function and the influence of retinoids on several cytokine expression in keratinocytes (TGF β , IL 1 TNF α). All retinoids at concentrations: 10^{-5} M inhibited proliferation of fibroblasts, endothelial cells and A431 but had no effect on proliferation of HaCaT cells. Retinoids at concentration: 10^{-8} M significantly stimulated proliferation of endothelial cells and had no effect on proliferation of fibroblasts and transformed keratinocytes. All trans RA and arotinoid did no influence the levels of specific mRNA for collagen I and III, contrary to 13-cis RA which strongly decreased the mRNA levels. All retinoids stimulated the expression of elastin mRNA. Conditioned media from retinoid treated keratinocyte cultures stimulated both fibroblasts proliferation and expression of collagen type I and III mRNAs. TGF β protein, but not TNF α and IL1 were detected in condition media from retinoid-treated keratinocytes. The results suggest that beneficial therapeutic effect of topical retinoids on photoaged skin may be due not only to their direct action on expression of genes of extracellular matrix compounds but also to their indirect action through the stimulation of epidermal cytokines expression (TGF beta), which may affect connective tissue cells proliferation and matrix production.

**TOPICAL TREATMENT FOR ANDROGENETIC ALOPECIA (AGA) WITH
HORMONAL PHENIATRICS**

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Androgenetic Alopecia is the most frequent type of effluvium in men and in women. Topical testosterone was first proofed to be trichogenic. This was disproved and interest in hair research waned. Local applied estrogens alone or in combination with local corticosteroids showed an overall reaction of 66,6% (Orfanos et al.1979) using estradiolbenzoate, estradiol or Dienostroldiacetate as an inhibitor of 5- α -reductase. Cyproteronacetate, a gestagen component works in a two fold way. On one hand by blocking androgen-receptors on the matrix cells in the hair follicle, on the other hand by blocking 5- α -reductase. As a consequence testosterone is not transduced into hydrotestosterone. Finasteride, a systemic pure 5- α -reductase-inhibitor currently is under investigation for male pattern baldness. Finasteride in combination with topical minoxidil seems to increase hair regrowth. Studies have focused on combining minoxidil with other trichogenic drugs, like tretinoine, spironolactone and cimetidine. There has also been interesting results in cyclosporine topically, also the mechanisms of action on the induction of hair regrowth is unknown.

THE CARBONIC ANHYDRASES AND THEIR ROLE IN IONIC AND GASEOUS EXCHANGES AND IN FLUID HOMEOSTASIS: IMPLICATIONS IN COSMETIC DERMATOLOGY

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Carbonic Anhydrase (CA) is the common name of a family of isoenzymes, whose role is the catalysis of the reversible hydration reaction of carbon dioxide. The first experimental evidence of CA dates back to 1932, when high levels of enzyme activity were localized inside the red blood cells, suggesting a primary role in carbon dioxide transport and in the respiration processes. More than sixty years later, many isoforms of CA have been localized in virtually all the living organisms, in a growing number both of organs and tissues and of cellular and subcellular sites. Only in man the CA family is constituted by at least nine isoenzymes, specifically localized and with precise physiologic functions, these including 1) transport and removal of metabolic CO₂; 2) most of ionic and gaseous exchange processes; 3) fluid, acid and bicarbonate secretion; 3) tissue hydration; 4) a generic buffering action; 5) regulation of osmotic pressure; 6) mediation of volume changes of cellular and subcellular bodies; 7) regulation of chemical sensitivity to CO₂.

This contribution presents the most recent and significative acquisition in the fields of CA biochemistry, physiology and pharmacology. More specifically, a general theory on the role of the CAs in fluid exchanges and tissue hydration is proposed, in view of the possible effects on the catalytic activity of the different CA isoforms of cosmetic products, either active ingredients or stabilizers and additives.

PROBLEMS OF DIAGNOSE COSMETIC CONTACT DERMATITIS (CD):
PATCH TEST AND PRODUCT USE TEST AT THE SITE OF ORIGINAL
ERUPTION

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Because of the lack of informations about the composition of cosmetic products, dermatologist is often in situation to diagnose cosmetic allergic contact dermatitis (ACD) on the basis of patch test with original product. Since the product contents only a small concentrations of allergens, this test shows false negative results in 2/3 cases.

With product use test (PUT) we try to evaluate diagnosis of allergic process provoked with cosmetic product, expecting that its use on the original site of previous dermatitis will elicit allergic process.

Our study intended to estimate validity PUT at the site of original eruption in evaluation of diagnosis cosmetic ACD.

Patch test of cosmetic products was applied on 152 patients with suspected cosmetic contact dermatitis. In patients with negative results of patch test with cosmetic products, we used PUT at the site of original eruption, with the same products.

Validity of positive allergic reactions were evaluated using patch test with Cosmetic tests serie in both groups with diagnosed cosmetic ACD (patch test and PUT), as well as in control group.

Results of our study show that PUT at the original site of eruption with cosmetic products reproduced adverse reactions -cosmetic CD in 97% of our patients. Unfortunately, this test wasn't valid for differentiate allergic from irritate process.

We assume that the only valid test for diagnose cosmetic ACD remains patch test with the ingredients of cosmetic products.

**LIPOSCULPTURE OF THE LOWER LIMB UNDER
PNEUMATIC TOURNIQUET. REVIEW OF 50 CASES.**
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The extension of the liposuction to the entire lower limb was slowed down considerably by the bad results obtained on certain areas as the anterior and exterior sides of the knees, the calves and the ankles.

From 1993 on, we started circumferential liposuctions on the knees, calves and ankles under pneumatic tourniquet, without infiltration or drainage. The preliminary results were very satisfactory and encouraged us to continue.

The innovation of our technique is essentially the absence of infiltration of the areas to be aspirated wich, coupled with the inexistence of bleeding due to the pneumatic tourniquet, allows a real "sculpture" of the limb. Thus, we can obtain per operative the desired aesthetic results.

This study of 50 patients operated by our technique, validates its innocuity, its better plastic results as well as simple post operative after-effects.

IN VITRO RECONSTRUCTED CORNEA: A THREE-DIMENSIONAL MODEL FOR TOXICOLOGICAL TESTS

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According to some Authors the in vitro reconstructed cornea is useful to study the fisiopatological mechanisms and interactions between keratocytes (stromal fibroblasts) and epithelial cells because of its capability to mimic the in vivo situation. Moreover, this model could be proposed in toxicology as an alternative to animal tests since they show high costs, variability and subjectivity. In this study the model is made by collagen, extracted from Wistar rat tails (1), mixed together with a suspension of keratocytes. This procedure gave a three-dimensional gel on which surface epithelial cells were seeded. By characterizing this model histological and immunohistochemical analysis at different days of culture (7-10-15) were performed. Particularly, the monoclonal antibody AE5 revealed the expression of keratin markers of corneal epithelium differentiation (2), showing a good growth of the in vitro reconstructed epithelium. Once this method was standardized, we tested by means of the MTT cell viability test (3) the effect of 4 surfactants (benzalconium chloride, SDS, Tween 20 and Triton x100), whose toxicity is well known. The correlation of in vitro data with the in vivo one by means of Draize test is satisfying and let us to better understand and improve the technique and the use of this model.

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Hair bulbar dystrophies: a new tool in the microscopic study

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The authors report a modified microscopic technique to investigate hair bulbar and shaft alterations through a microscopic colour analysis correlated to the metabolic activity and keratinization process of the hair. This technique seems of interest since it increases the sensitivity and specificity of the microscopic study giving more details of the protein synthesis to evaluate hair pathologic conditions.

THE ROLE OF IRON IN FREE RADICAL-INDUCED SKIN
INFLAMMATION

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PA, USA)

Iron in the ferrous state (Fe^{2+}) has been implicated in production of the hydroxyl radical in free radical reaction. The catalytic action of Fe^{2+} on hydrogen peroxide, known as the Fenton reaction, is a well known producer of hydroxyl radicals. In this study we show that iron chelation is an effective means of inhibiting lipid peroxidation as determined by oxygen consumption using a platinum electrode system. The method employs linoleic acid as the fatty acid substrate, a free radical generator 2,2 azobisamidinopropane hydrochloride (AAPH), lactoferrin and phytic acid as iron chelators. The reaction is initiated with AAPH, iron salts are added and the increase in oxygen uptake is measured. The chelators are added at various intervals and at various concentrations. The results show that both lactoferrin and phytic acid are effective iron chelators, and therefore effective preventors of lipid peroxidation when used at certain concentrations and prepared in specific type products. The application of iron chelators in cosmetic products will be discussed.

Cosmetic Preparations: Actual Toxicological Aspects

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There is a general expectation on the part of the consumer that cosmetic and toiletry formulations will not cause undesirable reactions (i.e. will be "safe") in use. In reality the major risks associated with these types of formulations principally centre on skin and eye irritation and skin sensitisation. Thus the quantitative evaluation of the risk of contact allergic dermatitis from allergens represents an important prerequisite to the appropriate management of that risk in the general human population. In this paper we seek to describe an approach for evaluating cutaneous risk based on preclinical human and animal data that correlates well with eventual clinical experience.

The model uses an approach for low-dose extrapolation and comparison of relative risk (i.e. safety factor) using data from human and animal testing. A scheme is developed in which, without enough human data to establish a direct dose-response function, information from guinea pig tests can be used to devise a working model to estimate human dose-response.

Where as modelling of clinical prevalence rates in different allergen exposure situations in human populations shows a potential set of problems to be dealt with, the predictions of risk (1/safety factor) for various allergens compared with their clinical prevalence rates show a significant correlation.

We feel that the use of preclinical human and animal data to produce safety factor estimates of eventual clinical prevalence rates seems to be reliable and is worthy of further investigation.

STATUS COSMETICUS VERSUS SKIN HYPERSENSITIVITY

M. J. Rapaport

What is "status cosmeticus" and what part does chemical contact and contact dermatitis play in this entity?

Contact dermatitis to allergens in cosmetics occurs only rarely now. Demonstrations of present day culprit chemicals will be presented.

The burning, stinging, sensations of "status cosmeticus" are different complaints compared to the pruritus of contact dermatitis. Are there specific chemicals in cosmetics that cause burning? The proposed answer to "status cosmeticus" lies elsewhere and the cure is readily available, as will be demonstrated.

A NEW SPRAY SYSTEM ENVIRONMENTALLY FRIEND

N. Allegri

SUMMARY

EP SPRAY SYSTEM S.A. , an industrial Swiss company, owned by EMESCO Group developed and introduced on international market during 1992 a new spray system powered by compressed air and suitable for standard aluminium and tinplate cans with a 1 inch neck.

The system is composed by a female valve and a multilayer laminated pouch assembled to a normal mounting completed by a large range of high technology special actuators.

EP SPRAY SYSTEM valve and pouch are crimped by normal 8 sectors crimping head on the neck of an empty aluminium or tinplate can .

By a special pressurization head, cans are pre-pressurized by compressed air to 3.8 bar.

Two different mounting cups are available :

-AIR CUP with a pressurization valve with a repel rubber gasket in the channel of mounting cup

-UNDER CUP GASSING suitable for this technology of pressurization.

Both mounting cup are available in aluminium and tinplate.

The pouch is filled by active product using a special head with a conical needle (100ml /s max speed).

EP SPRAY SYSTEM can be filled on existing aerosol filling machines with modification of pressurization and filling heads.

The active product filled into the pouch is always enveloped by compressed air and under the pressure on the walls of the pouch, active product is compelled to come out, through the micro-channels of the actuators, forming a fine mist due to high technology special nozzles.

No dangerous gas are used and in empties cans wasted.

This spray is environment friendly and safe: no risk of explosion.

A perfect spray is obtained keeping the cans at any angles , even if they are used top down.

EP SPRAY SYSTEM is a new possibility to dispense also gels,creams, foams using special actuators, using only a finger pressure and avoiding contamination of the product.

COSMETOLOGY AND SPORTS

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There are numerous cosmetic consequences in the practice of sports, to the skin and it's appendages, which are mostly unfavourable. The various aspects of cleansing, sweating and chronic damage from photo-exposition in relation to various sports are considered. The understanding of physio-pathogenetic mechanisms that underlie these alterations has made possible the prevention or attenuation of these effects, hence to formulate cosmetic remedies that can be employed for the safety of the skin and it's appendages in the practice of all kinds of sports.

A CASE OF DIET-RELATED PEMPHIGUS

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An experimental investigation has lately shown that certain allyl compounds of garlic are able to provoke acantholysis on normal human skin cultured in vitro. The acantholytic effect has been more prominent on the samples from a DR4+ donor.

We here report a case of superficial pemphigus which appeared spontaneously in a DR4,14+, 49-year-old man and which ran a course that proved to be affected by dietary factors, in particular by the consumption of garlic. In the absence of a conventional treatment and on a garlic-free diet only, the disease ceased for several months and the pemphigus antibody titre decreased by one dilution. Soon after an unintentional dietary test with a strongly and presumably garlic-spiced fish meal, the pemphigus recurred and the antibody titre rose again.

Nutritional factors should be added to the ever-growing list of exogenous factors capable of inducing or perpetuating pemphigus in genetically predisposed individuals.

Suitability of Emulsifiers in Normal and in Sensitive Skin: Evaluation by Single 24 hrs. as well as by Repeated and Prolonged Patch Testing

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Sensitivity of the skin is a property or condition which is widely indicated and assumed by consumers of cosmetic products. From the dermatologic viewpoint definite skin conditions like atopic skin, irritant contact dermatitis or similar states of the skin may be accepted as being „sensitive“ conditions, mainly correlated with elevated trans-epidermal water loss due to impairment of the barrier's function and composition.

We describe a series of tests with volunteers and the set of parameters according to which they were selected that should describe a certain sensitivity, but exclude obvious signs of a flourishing dermatitis, and their cluster of reaction against a series of different emulsifiers. Nonionic as well as ionic emulsifiers were evaluated in this test system.

The reactions were assessed by clinical parameters as well as by objective measuring methods.

Materials and methods:

Volunteers with healthy normal skin, normal versus sensitive skin according selection criteria. (Parameter of selection as anamnestic strong reactions against surfactants in patch-tests and atopy stigmata were used.)
20 volunteers in each test

Products:

Several ionic and nonionic emulsifiers in concentrations up to 20%.

Test method:

Patch testing with Finn-Chambers/ 1x 24 hours.

Patch testing with Finn-Chambers/ 1x 48 hours and 1x 72 hours

Results:

Differences in the irritation response between „normal“ and „sensitive“ volunteers could be seen.

The repeated and prolonged patch test showed a better differentiation between the tested emulsifiers.

Conclusion:

The described repeated and prolonged patch test carries less inconvenience for the volunteer than the classical soap chamber assay after Frosch, but gives more information than the often used single 24hr application patch test.

Even very well compatible substances and products like skin care emulsions should be distinguishable by this procedure.

Results of a New Therapeutic Protocol in Vitiligo Using Phototherapy and A Topic Compound -- P. Righi (Cremona, Italy)

Vitiligo is an alteration of the pigmentation system characterized by the disappearance of melanocytes in cutaneous areas. At present treatment consists of phototherapy with UVA rays. However, the rays affect not only the vitiligious spots, but also the adjacent cutaneous zones that are normal, and therefore reactive, for their melanin content. The work is two-fold: that of constructing equipment furnished with a diaphragm-like device which emits UVA rays of varying diameters depending on the extension of the vitiligious spots, to concentrate the energetic charge only on the affected areas; and, to determine the wave length best suited to provoke the quickest functional reawakening of the melanocytic structure which is quiescent: in other words, a concentrated phototherapy. An instrument has been devised which emits UVA radiation with a wave length of 365nm (revealed to be most efficient) and containing a device focusing only on the vitiligious spots. The effect of concentrated phototherapy, provoked an intense erythema, but insufficient to produce the pigmentation desired, thus it was necessary to prepare a topic compound that favored the pigmentation of the skin. Using MED data as a guide, the treatment consists of initial sessions for 2-3 weeks, until there are signs of a slight erythematic reaction. Every phototherapy session becomes effective upon the application of the topic compound, which consists of a cream base rich in Vitamins A, E, and F, and the copper oligo-element in opportune concentrations, on the vitiligo spots, which assists in the elimination of the corneum layer under which the pigmentation begins to surface. A total of 928 patients have been treated using this therapeutic protocol:

- 595 conclusive treatments with results:

354 excellent - 59%; 164 satisfactory - 28%; 77 not satisfactory - 13%

- 333 non-conclusive treatments due to the interruption of therapy

Today concentrated phototherapy in the treatment of vitiligo is "long-term". To confirm the therapy, one can refer not only to the Wood light exam, and photographic documentation, but also to biopsies containing sections of both the treated vitiligo spots and normally pigmented skin. The histology has confirmed the presence of perfectly normal structured and functioning melanocytes which were perfectly positioned numerically between the keratinocytes of the basal layer of the epidermis in the vitiligo area treated with concentrated phototherapy and the application of the topical compound.

**BIOMECHANICAL PROPERTIES OF HUMAN SKIN AND PLASMA
LEVELS OF OXIDANTS AND ANTIOXIDANTS: VARIATIONS
BETWEEN AGE AND SEX AND POSSIBLE CORRELATIONS.**

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Litterature data (1) suggest that human skin elasticity decreases with age on both face and forearm. Because it is well known that free radicals are involved in cutaneous aging and skin cancers, we investigate:

- a) correlations between biomechanical properties of human skin and blood levels of an oxidant product malondialdehyde (MDA) and antioxidants: E vitamin, superoxide dismutase (SOD) and selenium glutathione peroxidase (GPx-SE);
- b) blood levels variations of SOD, E vitamin, GPx-SE and MDA during aging.

Sixty-seven healthy subjects (44 women aged from 21 to 86 years and 23 men from 21 to 74 years) entered the study after giving written, informed consent. All the volunteers had no vitamins or antioxidants supplementation in the diet before six months. The measurements of the biomechanical properties were performed with a Cutometer Sem 474 on three different anatomic locations: forehead, cheek and volar forearms, then 7cc of blood were drawn for High-Performance Liquid Chromatography measurement of vitamin E ($\mu\text{g/ml}$), Standard Spectrophotometric Methods evaluation of SOD (U/ml) and MDA (nmol/ml) and EIA investigation of GPx-SE ($\mu\text{g/ml}$).

RESULTS. We found no correlations between biomechanical properties of the skin and aging, sex, skin phototypes and plasma levels of MDA and antioxidants. About biochemical data, we found that E vitamin and SOD levels increase progressively during aging in women population while in men population the increase is not statistically significant. GPx-SE levels also increase during aging but only in men population. MDA levels showed no correlations with any of the previous parameters.

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BIOCHEMICAL STUDIES ON A NOVEL ANTIOXIDANT FROM LEMON OIL.

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Free radical-mediated lipid peroxidation has been proposed to be critically involved in several disease states as well as in the degenerative processes associated with aging. Higher organisms place a considerable emphasis on defense against oxidative damage. The defense mechanisms involve both enzymes (SOD, catalase and glutathione peroxidase) and small molecules (i.e. vitamin E and beta-carotene).

Skin is an highly differentiated and complex organized structure and with age or in particular conditions becomes more vulnerable to free radical induced damage (i.e. hypersensitivity, degenerative alterations, photocarcinogenesis). In view of the hypothesis that antioxidants may be particularly indicated to protect skin from oxidative stress, we investigated lipoperoxidation in skin lipids after topical treatment with different fraction isolated from lemon oil extract. Our results clearly indicate that the lipid soluble L.O.-23 fraction obtained from lemon oil is endowed with the highest elevated antioxidant activity, since was capable to inhibits free radical generation in vitro as well as in vivo.

PRACTICAL TREATMENT OF AGED SKIN

L. Celleno, A. Vasselli

Practical care of aged skin can be divided into systemic and topical treatment. The prevention of skin aging includes general considerations such as life styl, diet, avoidance of excessive exposure to sun, etc.

Furthermore the systemic prevention and treatment of skin aging includes a strategy against free radical production. Free radicals which are generated in exogenous processes may be the main cause of alterations observed during so-called photoageing. Compared to other organs, the skin has fewer enzyme defence mechanisms to protect it against free radicals . It also has fewer "scavanger" molecules so to prevent damage due to early skin ageing, initial intervention must aim at enhancing the system that combats free radicals. Some experimental tests seem to demonstrate the validity of this approach. Topical treatment includes cosmetological and pharmacological "systems". Cosmetic treatment, sunscreens above all, exert an effective role in preventing photoaging damage. Alpha hydroxyacids, keratolytic agents and many other functional cosmetic ingredients, are effective in enhancing the appearance of the epidermis and in treating some signs of photoageing .

Retinoic acid can reverse some of the damage produced by photoageing. Depigmenting agents are needed to remove age-spots and peeling treatments, chosen to meet different requirements, can be helpful in treating aged skin. The practical treatment of aged skin can also be effected using other methodologies.

CAMOUFLAGE: ALLERGOLOGIC CONCERNS

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Cosmetic camouflage products include make-up, hair dyes and nail preparations. Adverse reactions to these products are numerous, but of major concern is the contact dermatitis spectrum. Primary irritation is the most common reaction to cosmetics, and can be avoided or even controlled by neutralizing anti-irritants. It is the allergic contact dermatitis that is of primary medical importance, since its consequences may be as dismaying as the primary indication for camouflage. It is estimated that fragrance and preservatives account for about two-thirds of the cases of cosmetic dermatitis, and are, unfortunately, still abundant in camouflage cosmetics. The application of tattooing techniques for medical camouflage may be considered relatively safe when iron pigments are used, as opposed to commercial pigments which are of major allergologic concern.

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**TREATMENT OF STABLE VITILIGO WITH
AUTOLOGOUS EPIDERMAL GRAFTING AND
PUVA(PSORALEN PLUS UVA)**

Y-K Park, SK Hann, S Im (Department of Dermatology,
Yonsei University College of Medicine, Seoul)

Previous reports have shown the benefits of epidermal grafting for vitiligo. Our purpose was to evaluate the effectiveness and complications of epidermal grafting in combination with PUVA on stable vitiligo refractory to conventional treatments. In 100 patients with stable refractory vitiligo we performed epidermal grafting with suction blisters followed by PUVA treatment. The grafted sites were examined for repigmentation for up to 5 years. Excellent repigmentation was observed at all grafted sites, especially on the face except for the lip and the alae nasae. PUVA treatment resulted in spreading of the pigmentation. Poor results were observed on the neck, axillae, and overlying bony prominences. Hyperpigmentation of the recipient and donor sites was frequently observed. Only six patients had recurrence and/or adjacent new lesions. Depigmentation developed at the donor site in only one patient with generalized vitiligo. Long-term observation in these patients indicates that repigmentation obtained by this method is permanent. Although epidermal grafting in combination with PUVA has some limitations, it is an easy, safe, inexpensive, and effective treatment for various types of stable refractory vitiligo.

PRODUCTION AND FUNCTION OF CYTOKINES AND THEIR SKIN RECEPTORS

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Skin was initially considered only a target for immune-mediated damage, not an active participant in immunologic reactions. The recent explosion of knowledge about cytokines with immune and inflammatory activities, as well as the identification of many of these cytokines as products of keratinocytes, Langerhans cells, fibroblasts and endothelial cells, has lent a novel and exciting perspective on skin pathophysiological processes. Keratinocytes are now thought not only to actively participate in immunologic events influencing behavior on resident and inflammatory cells, but also to play a role in systemic inflammatory and immunologic reactions. Therefore, regulation of cytokine production by effector cells and receptors for a given cytokine on target cells is important to maintain homeostasis in skin. Dysregulation of these could result in some skin diseases. The list of cytokines that keratinocytes are capable of secreting is impressive: from IL-1 to IL-12. Most of these factors are not constitutively produced *in vivo*, but can be induced by a variety of nonspecific stimuli, including chemicals that induce irritant and allergic dermatitis, ultraviolet irradiation, tumor promoting agents, epithelial trauma, and other types of injury. Cytokines produced by skin cells represent the effector function of the immune system in the skin: proinflammatory cytokines released by keratinocytes prepare the dermal stroma for specific immunological activity and increase the migratory activity of antigen-trapping cells, which induce expansion of specific lymphocytes in the skin-draining lymph nodes. The purpose of this lecture is to describe the state of the art on epidermal and dermal cell cytokine production, their receptors and their role in skin immune and inflammatory reactions.

PROTEOGLYCANS: WHAT'S NEW IN COSMETOLOGY

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Italy

Proteoglycans are extracellular, or membrane associated, macromolecules consisting of a core protein bearing one or more glycosaminoglycan GAG side chain.

Many studies have show that both keratinocytes and skin fibroblasts can respond to environmental cues of cosmetologic interest in modifying the synthesis of the GAGs. These modifications can involve the composition (as in so called "cellulite" and in photoaging), the extent of epimerization (as in the conversion of coridroitin sulfate to dermatan sulphate in "true" aging), the degree of sulfation (as in "dry skin"), and eventually the lengh of glycosaminoglycan chains that are synthesized.

A better understanding of Proteoglycans role and biological activities and eventually of proteoglycans transcriptional, translational and post-translational events in the skin may represent a key to treatment of several skin disorders of cosmetological interest such as aging, "cellulite" and dry skin.

CONTACT ALLERGY TO COMPOSITAE PLANTS - IN RELATION TO NATURAL COSMETICS.

K.E. Andersen & E.Paulsen. (Dept. of Dermatology, Odense University Hospital, Odense, Denmark)

Contact allergy to Compositae plants may cause a severe dermatitis typically starting in the summer with an acute eczema either on light and air exposed areas or on areas of plant contact; it disappears spontaneously during the fall. Repeated exposure over a number of years may cause severe intractable perennial dermatitis. The major allergens responsible are sesquiterpene lactones.

Since 1990 we included the sesquiterpene lactone mix (SL-mix) in the standard series. Patients suspected of having Compositae dermatitis were further tested with the Compositae extract mix (Hausen) and we found 100 of 2483 (4%) consecutively tested patients Compositae sensitive, mostly women. Both the SL-mix and Compositae plant extracts are necessary for routine screening when Compositae dermatitis is suspected. Many patients have multiple allergies and the relevance of the patch test reactions is obvious in most cases. Feverfew, chamomile and tansy are the important markers of Compositae allergy in Denmark. A source of indirect contact is the use of herbal medicines and natural cosmetics containing Compositae plant extracts. Many of the Compositae have been used since early times as medicinal herbs, and the increasing interest in recent years in herbal medicine has resulted in the marketing of quite a number of Compositae-containing preparations for both internal and external use. Two frequently employed plants in Danish herbal medicine preparations are chamomile (*Chamomilla recutita* (L.) Rauschert), and mountain tobacco (*Arnica montana* L.), both of which are ingredients in i.a. shampoos and ointment for skin irritation. Among our 100 compositae sensitive patients only 2 were tested on suspicion with plant extract containing cosmetics, and 1 was proven allergic. In conclusion, reaction to plant extract containing cosmetics seems to be rare among Compositae sensitive patients. This investigation may show an underestimation of the occurrence of this problem..

MARCELLA GUARRERA AND ALFREDO REBORA

METHODS OF QUANTIFICATION OF HAIR LOSS. A CRITICAL REVIEW.

SUMMARY

One of the most important problems dermatologists have to face in evaluating a balding patient is the quantitative assessment of hair loss. Too often trichogram does not offer a satisfactory answer. In addition, it is an invasive method which may not be accepted by the patient. Simpler and non-invasive methods are described and discussed by comparing their results: the pull test, the wash test and the daily count. Phototrichogram provides further useful information and it is described and discussed. Its complexity, however, prevents it to be employed in the office.

WATER INSTEAD OF SOAP

Ilaria Ghersetich

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Cleansers may be sometimes irritant in subjects with sensitive skin and in these subjects may be proposed to use alternative way of cleansing, as mineral waters.

Mineral waters are natural solutions, which are characterized by a "chemico-physical dinamism", which is as a greater extent responsible of their action. Mineral waters seem to have some effects on the immunologic system of the skin, particularly the benefit of balneology could be related to modifications of functional subsets of T lymphocytes and release of cytokines in the skin.

Moreover it has been phormulated the hypothesis that our skin after different stimuli, among which for example thermal waters or muds, could release opioid peptides, modifying pain's treshold, and cutaneous and plasma neuro-endocrin and immunologic system.

Mineral water can be used in alternative to soaps in patients with particular dermatologic conditions, such as sensitlve skin, contact dermatitis, seborrhoea, acne, seborrhoelic dermatitis, sebopsoriasis, psoriasis, because beyond the cleansing properties (without irritant effects) they may also exert beneficial, anti-inflammatory, cheratoplastic and anti-pruriginous effects.

**AESTHETIC MEDICINE AND PLASTIC SURGERY:
YESTERDAY WISHED FOR ,TODAY A NECESSARY
CO-OPERATION**

C.A.Bartoletti M.D., President of italian Society of Aesthetic
Medicine

Between Aesthetic Medicine and Plastic Surgery there are no clashing interests or interference. This has been maintained in Italy since the beginning of congress activities of the Italian Society of Aesthetic Medicine (1976), in the early stages on personal level by the representatives of this association and of the Italian Society of Plastic Surgery (C.A.Bartoletti and G.Micali, N.Scuderi, D.Dioguardi, G.Boggio Robutti) and later, as a co-operation necessity, at association level (1987-1994). Aesthetic Medicine takes care of people who live their lives uncomfortably because of an unaccepted aesthetic failure. It takes care of aesthetic problems of the examined subject in the context of a psychophysical global evaluation before suggesting a general and district preventive or corrective program. Obviously it directs to specialist advice any diagnostic doubt or competence correction. Aesthetic Medicine in comparison with Plastic Surgery is concerned with studying the patient in toto, to prepare him for surgery and to provide for the optimization of the aesthetic results. Furthermore some protocols of methodologies of Aesthetic Medicine complementary to Aesthetic Plastic Surgery are presented.

PSYCHE AND SKIN

E. Panconesi (Dept. of Dermatology, Univ. of Florence, Florence, Italy)

When I try to explain to a scientific audience "the world of psychosomatics" I ask that one listen without prejudice, even to the parts that are "less usual" or more "imaginative" or in some way "different" from what we are familiar with in the applied medical sciences.

The skin, the covering that envelops the body establishing the boundary\contact with the external world, has a privileged position in mental development and Body Image, and other peculiar characteristics in the boundary\contact relationships. Aesthetics are of paramount importance in psychosomatic dermatology: cosmetics, self-image, attractiveness, aging and photo-aging, skin changes experienced as (cutaneous) diseases are all related to appearance and aesthetics. Recent research in biological psychosomatics permit us to explore and begin to explain the paths followed by emotions and stress in their influence on the skin and those of somatopsychics which lead in the other direction, from the skin to the mind.

Sometimes a mere story, particularly meaningful, emotionally lived-narrated-written, will shock us and convince us deeply ... if one listens attentively. I will try to tell you a few.

Is there any risk of allergic reaction in creno-cosmetology?

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High content of salts, which prevents the growth of pathogen microorganisms, is the main hallmark of mineral waters. This feature gives mineral waters and muds useful, long-duration self-preservative properties which allow their utilization in both cosmetology and dermatology (as vehicles of pharmacological agents). As concerns cosmetology, broad possibilities of application of mineral waters have been recognized from long time, based on the eudermic properties of salts, on the radioactive power of solutions and on the bioactivating charge of suspended colloidal substances.

It is well known that the overall incidence of untoward effects from cosmetics is low and a thorough literature review did not detect any report of irritant/allergic reactions to mineral water-derived cosmetics. Considering the ever-increasing use of 'creno-cosmetics', these circumstances might be explained as follows:

- a) this issue has never been focused on so far; or
- b) cases have been overlooked or misdiagnosed; or
- c) creno-cosmetics bear no irritant/sensitizing potential.

BIOTECHNOLOGIES IN COSMETIC DERMATOLOGY: THE STATE OF THE ART.

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of Copenhagen, Bispebjerg Hospital, Denmark.

Recent imaging techniques allow precise characterization of aged skin. Skin surface contour evaluation by laser technique allow precise and quantitative study of skin surface contour including wrinkles. With high-frequency ultrasound the thickening og thinning of skin as a result of photoaging or intrinsic aging can be accurately measured, and a low echogenic subepidermal band can be seen and quantified by digital analysis. Moreover, changes of pigmentation and skin colour can be measured by colorimeters and dryness and scaling by additional techniques.

A main issue is, however, the relevance and applications of highly specific methods in studies of cosmetics effects which are essentially subjective and composite. The techniques can even be misused to emphasise differences of no practical importance. A limitation of the methods is still the relatively high cost and the need of training and education. Thus, bioinstrumentation is despite high degree of refinement and validation at present limited to centres of excellence.

Reference: Handbook of Non-Invasive Methods and the Skin (J. Serup, G. Jemec eds), CRC Press, 702 pp, 1995.

INSTRUMENTAL EVALUATION OF THE ACTIVITY OF COSMETIC INGREDIENTS ON THE SKIN

Stefania Seidenari

Department of Dermatology, University of Modena, Italy

Documentation of efficacy and substantiation of claims of cosmetic products have been recently introduced by the EEC cosmetics directive and must be put in force by the cosmetic manufacturers by 1997. Besides the need to improve clinical scoring schemes, considering consumer-relevant aspects of cosmetic effects and the users' perception and definition of efficacy, an objective documentation by means of bioengineering techniques will be increasingly required, especially in view of these new regulations.

Non-invasive measuring methods will also be more commonly used and critically evaluated in the future as objective means for documenting the absence of major irritant properties of topically applied products.

Ultrasound provides a suitable means for assessing the irritant properties of substances applied onto the skin and represents a method which is complementary to other bioengineering techniques.

The echographic method, providing an image corresponding to a tissue section, enables a real time observation of the dynamics of the phenomena taking place in the skin after application of topical substances. Moreover, numerical data, suitable for objective comparisons and statistical evaluations, are provided by image analysis programs enabling the numerical description of the ultrasound (digitalized) image. The results of the echographic assessments represent a valid integration to TEWL, capacitance and skin color measurements, employed for the evaluation of the efficacy and toxicity of cosmetics.

Data referring to the instrumental evaluation of topically applied products will be critically presented and discussed.

THE BIOLOGICAL COSMETIC ACTIVITY FOR EC DOSSIER

L. Celleno

The VI amendment to the "Cosmetics" Directive (Directive 76/768 EC) of 1976 states that cosmetic products can and must be able to keep our skin in good health. From a scientific point of view, this means that cosmetics must be able to interact with physiological processes to improve them if they are defective or at least that cosmetic ingredients must be able to interact with normal skin structure and functions. Only in this way can they carry out their task of maintaining our skin in good health or "bonus status". The concept of "bonus status" cannot be limited to appearance alone. Many ingredients have shown their ability to enhance specific processes and functions. Ceramides and EFA are probably the best example of this concept and their cosmetic use can produce beneficial effects on xerotic skin and are able to maintain a normal epidermal structure since they can interact with intercellular lipids. We must remember that when a finished cosmetic product makes certain specific claims, it must be able to prove them. This implies the need to identify and codify clinical and experimental tests that are able to demonstrate biological cosmetic activity.

Evaluation of Cosmetic Product Safety without Animal Testing acc. to 6th Amendment of EC-Directive

Wolfgang Matthies, Henkel KGaA, Düsseldorf

The EC-Directive foresees a complete ban of animal testing from 1. 1. 1998 on. As in Germany this was already the case for decorative cosmetic products since 1985, experience has grown up in industry with respect to building alternative test strategies.

A key role play substantivity and completeness of toxicological data for raw materials and new ingredients. Therefore, great emphasis has been laid on this item, but still a lot of work has to be done in collecting and characterising chemical substances of all kind.

Availability of relevant toxicological is a „must“ in all future safety assessment procedures and therefore a crucial argument also for raw materials producers.

Calculation of product safety based on data of all relevant toxicological endpoints must reach a level of confidence, which enables the dermatologist or other medical investigator to decide whether or not a formulation could be applied on man without any substantial health risk. This assessment has to bear in mind all possible exposition by intended use and even reasonably foreseeable mis- or overuse.

Based on such an assessment, dermatologic investigation of cosmetic products can replace former animal tests with respect to local compatibility.

To meet the requirements of the Declaration of Helsinki which is the internationally accepted guideline for biomedical investigation in man, risk and exposition of the volunteer has to be minimized and therefore, a step-wise test procedure is recommended in accordance with the knowledge about the formulation's biological characteristics.

Volunteer's participation follows informed consent, which means in particular information about all implications for him connected with the product application and physical measurements, his given written consent and review by an ethics committee.

Depending on the actual question of investigation, one or several of the following test conditions may be selected:

1. Single open application, mainly used for classification purposes characteristics.
2. Closed application (patch test), mainly used for direct comparison of product compatibility
3. Controlled application test, mainly used for new and unknown formulae, which have to be applied under complete control and/or versus a known reference
4. (Home) use test, mainly used as confirmation of consumers acceptance and general safety under intended use conditions.

In addition to clinical visual assessment of effects objective biophysical measurements should be used under standardized conditions.

An overall evaluation of the received information will enable the toxicologist to do his safety assessment for the release of the product into the market and to fulfill requirements of the recommended collection of safety data on file. This data collection will be completed continuously by experience from market studies and observation deriving from consumer complaints.

With respect to cost and time, the additionally necessary proof of efficacy claims will be generally incorporated in practice into the above mentioned procedure.

As human data have the highest degree in relevance and can be directly interpreted, as long as the test design resembles the intended use condition, this test procedure is more than a replacement of animal tests, but a substantial and fundamental part of future product evaluation.

The Clinical Protocol in Cosmetic Dermatology

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Schwalbach, Germany)

Key Words: Cosmetic Dermatology, Trial Protocol, Ethics
Review, Statistics, Data Protection

Providing the best possible protection of the test subjects is the essential prerequisite for the conduct of clinical research in cosmetic dermatology. Regardless whether cosmetical products or topical dermatological drugs are subject to clinical trials there is no difference in the key requirements to the trial protocol. Differences between the principles governing the conduct of clinical studies with drugs and cosmetics occasionally requires less rigorous executional detail for the latter ones. This is justified by and based on the fact that biomedical research conducted with cosmetics is typically much less risky to trial subjects. However, there is no excuse for clinical trials in cosmetic dermatology to be conducted with less good science than for drugs. The Responsible Clinical Investigator has to be satisfied with the risk assessment for the test products provided by the sponsor, demonstrating that trial subjects are not put at any undue health risk. Complete information about benefits and risks associated with the use of the test products, the agreement to which is to be documented by means of Written Informed Consent, is a critical aspect, but can not replace the obligation of the Responsible Clinical Investigator to safeguard the health and welfare of the trial subjects. In addition, assurance of proper protection of trial subjects by an independent Ethics Committee remains indispensable.

Requirements for proper statistical design, data collection and their analyses are not different, for a cosmetic dermatology study. Only the archiving requirements for data are more flexible in case of cosmetics.

The final report of a clinical trial in cosmetic dermatology has to carefully evaluate the results of the study, of any clinically relevant finding - positive or negative - for its consumer relevance. This has to be done under consideration of the legal requirement of absence of health risks from cosmetics under conditions of uncontrolled, recommended or reasonably foreseeable use.

Overall, and as to the ruling principles, there is no difference between a Clinical Protocol in General Dermatology and in Cosmetic Dermatology.

COSMETIC NEWS

Torello M. Lotti, MD

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So called "cellulite" (adiposis edematosa) is not considered a disease "sensu strictiori", but a skin condition related to the typical inner structure of the subcutis in women which shows arch-like structure of the connective tissue and excessive deposition of Glicosaminoglycans, well known for their water attracting properties.

A correct approach to the treatment of "cellulite" should consider these pathogenetic aspects. Local injections with L-tiroxin and theofillin seem of some help.

Recently new therapeutic methods have been introduced including special pants and electrolysis, a pulsed electromagnetic field vehiculed into the cellulite skin which would both increase adipocyte metabolism through the activation of the ATP pathway and remove the well documented excessive amounts of skin Glicosaminoglycans. Surgical treatments can be considered eventually.

NEW REGULATORY ISSUES AND FUTURE PERSPECTIVES IN COSMETIC RESEARCH

A.Ceccherini-Nelli (Depha Team SpA, Milan, Italy)

According to the 6th amendment and following updates of the EEC-Directive on cosmetic products (93/35/EEC), the manufacturers must keep information, readily accessible, regarding: 1) the assessment of the safety for human health of the finished product, carried-out in accordance with the principle of good laboratory practice; 2) existing data on undesirable effects on human health resulting from use of the cosmetic product; and 3) proof of the effect claimed for the cosmetic product. Furthermore, whereas the new Directive still relates only to cosmetic products and not to pharmaceutical specialities, it does not ban any more the use of substances with any known therapeutic activity. Raising the provocative question "Is there a need for a third group: cosmeceutics ?", Lavrijsen and Vermeer (1991) had clearly anticipated that the boundaries between cosmetics and drugs would have become much less defined in the next future. This perspective parallels the recent great scientific progress in the field of cosmetic research, in term of both safety and efficacy assurance. As it has also pointed out by Tronnier (1988), "nowadays, cosmetic preparations are developed and tested with the same care as pharmacons". Therefore it is not unlikely that future regulations on cosmetic products will look like or will be part of regulations for OTC drugs. This pathway will be prompted by the increasing concern about the safeguarding of public health, and will be allowed by technical progress. As a matter of that it is quite conceivable that future regulations will require that the proof of the safety and of the effect claimed be collected following the standards of pharmaceutical research, i.e.: Good Clinical Practice (GCP). Major Companies have already started to test their new cosmetic products in humans following the GCP guidelines. This presentation will also provide a comprehensive review of last decade medical literature, showing the several research contributions in which cosmetic preparations were studied by the same standards of therapeutically active pharmaceutical compounds.

Hypothesis for a new communication strategy of thermalism

ABSTRACT

An evaluation of the actual demand of natural medicines on the Italian market shows a remarkable increasing trend in the last years. Integrating this trend with some basic reflections about the main characteristics of spa treatments and about the communication in general, we have as result a communication strategy whose main headline can be expressed in the following way: "Thermalism should be promoted as the most natural medicine existing, but with all the guarantees (that not all the natural medicines can offer) that the consumer today requires and to which he is entitled".

Marco Zulberti

Capo Servizio TERME Europa

"Tourism and Fitness"

Osvaldo Bevilacqua - Rome, Italy.

Tourism is no longer one industry, but many. People travel for a variety of different reasons from business to art, from sport to study, from pilgrimage to health. In the context of tourism for health's sake, the oldest phenomena are thermal baths and the most recent are fitness centers. While there are precise figures for the thermal bath industry, tourism for fitness' sake in general does not yet have a precise measurement of its impact. These "centers for well being" in fact have multiplied so rapidly, both in Europe and America, that in the last few years it has not yet been possible to clearly define the sector and measure its economic potential. In the midst of this situation there is also lacking any legislative provision for regulation of this area. According to official figures provided by the office of the President of the Italian Council of Ministers, the influx of tourism in our country registered a notable increase in 1994 with respect to the previous two years in which tourism was heavily damaged by the crisis of the early '90s. From an adjusted negative trend of -1%, tourism registered a positive tendency evaluated at a near 9% increase. In any case the thermal bath sector currently, even if previously hurt by the general decrease in tourism, produces a volume of business of at least 3.367 trillion lira. These figures suggest that this sector is holding its own, even in the face of the ever growing health center phenomenon. One figure speaks clearly regarding this tendency in America: in 1987 approximately 1 million people took "healthy" vacations. Current indications place this figure closer to 30 million for the early '90s. This points to the necessity of developing such facilities within the thermal bath complexes in order to better respond to the demands of the marketplace. In France, the combination of thermal baths and fitness centers has already taken place and in 1993 showed the recovery of earlier losses in the sector. In Italy, on the contrary, the tourism of fitness has developed almost completely apart from the traditional thermal baths. The desire is therefore to see the development of a strong collaboration between the old and the new in order to have the words "thermal baths" be a guarantee for both quality and reliability.

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USE OF KOJIC ACID IN SKIN HYPERPIGMENTATION

Dott. Andrea CORBO. Dermatologo. Roma

Nowadays there are several techniques used for the treatment of skin disorders related to hyperpigmentation: laser-therapy, dermoabrasion, peeling, etc. But results are not always satisfactory.

Hydroquinone is the most popular skin bleaching agent. Hydroquinone inhibits the conversion of tyrosine into melanin by blocking the enzyme tyrosinase. It is rather effective but it is not always well tolerated by all patients.

Recently, some scientists are concentrating on the study of a new molecule which has skin bleaching effects: Kojic acid.

This is a chemical derived from mold (specifically *Aspergillus* and *Penicillium*); besides binding to tyrosinase, thus blocking the conversion of it into melanin (like Hydroquinone), it also binds to copper making it unavailable to melanocytes.

Kojic acid is very well tolerated and its bleaching action increases dramatically if it is mixed to AHA.

**"Hair knots" as a cause of pseudofolliculitis of the legs:
a video-microscope study**

Renata Strumia, Carla Roveggio

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Pseudofolliculitis is a common consequence of shaving both in the male beard area, especially in Negroes with curly hair, and in legs of young women. Inflammation results from penetration into the skin of sharp tips of shaved hairs. In the legs, some days after shaving, the hairs curve backwards after emerging from the follicle to penetrate the adjacent skin. We have employed video-microscopy to study the pattern of these hairs.

The apparatus was a Moritex Video Microscope System Scopeman, MS-504, Meisei Bldg., Japan that is composed of a processing unit and a color monitor (14" TTL CVS); light from the light source (a 100W mercury vapour lamp) of the processing unit is guided with the optic fiber to the probe end. Objectives are equipped with non contact lens (from 1x to up 400x) and with contact lens (from 50x to up 1000x). A still video recorder and a colour printer may be attached.

In 20 cases we observed true "hair knots" partially enclosed in the skin. The knots were rather entangled and their pattern was extremely variable. Small haemorrhages were present where the hair penetrated the skin and dilated capillaries were visible near by. Slight hyperkeratosis was also detectable. These ingrowing hairs initiate a foreign-body reaction, producing erythematous papules. There is evidence of genetic predisposition.

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EVALUATION OF PHYSICAL SUNSCREENS IN COSMETIC EMULSIONS

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Recently, physical blocking agents, such as ultrafine titanium dioxide and zinc oxide, have been used to great effect in sunscreen emulsions, since they provide broader wavelength range of protection than chemical sunscreens in particular in the UV-A region and they are biologically and chemically inert. However, there are problems to overcome when formulating with these micronized oxides extensively present in the market with different chemico-physical properties.

In this paper we report the results of a study carried out on oil in water and water in oil emulsions formulated with ultrafine titanium dioxide treated at the surface with stearic acid or dimethicone: the lipophile character of these organic chains modifies the TiO_2 properties, improving its dispersion particularly in the oily phase of the emulsion.

The rheological measurements performed on dynamic conditions were employed to study the homogeneity of the samples and their structural features; the dispersion of the powders in the emulsions was investigated by optical microscopy and SEM/EDX analysis; the functionality of the emulsions was tested by UV spectroscopy using an adhesive tape as substrate. The obtained results showed that the these physical sunscreens can be more easily dispersed in the emulsions and present good functionality, but depending on the chemistry of the surface treatment they can interact with the emulsifier system and affect the structural features of the emulsions.

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THE BODY COSMETIC PRODUCTS: ECONOMIC ANALYSIS OF THE
DISTRIBUTION AND CONSUMPTION.

R. Jirillo & A. Ghi (Institute of Commodity Science,
La Sapienza University of Rome, Italy).

Everybody knows the increasing market diffusion of the cosmetic products; they are largely used both in Italy and in Europe. According to the economic situation of Italy, the cosmetics' market has confirmed the general course of the consumer goods.

Whereas the cosmetic industry must be analyzed in relation to the different typologies and nature of the products, in the present work the market's variations through the single distributive channels are reported in detail.

The Authors of this note have particularly studied the body's products. The Italy market of these cosmetics is the third after hair and face products.

The aspects of the consumer's health on the basis of the recent law will be also examined with regard to the products' labelling.

INNOVATIVE PHYTCOSMETIC PRODUCTS

A. Cristoni, P. Morazzoni & E. Bombardelli (Indena S.p.A., Scientific Department, Milan, Italy)

In recent years, particular interest has been focused on the problem of "aging skin", which constitutes the heart of cosmetic research and involves a multi-disciplinary approach, based on the development of new molecules, new release systems, and new methods for the study of pharmacodynamical and toxicological aspects of the active principles.

The physiological processes accompanying the aging skin phenomenon are several and mainly concerned with chemical and metabolic changes, which result in functional and structural modifications of the skin. As a consequence it is possible to identify some specific functions (protectant and filmogen) required for cosmetic products in order to prevent the aging process. In this perspective the plant kingdom represents a huge source of products endowed with the following activities: antioxidant, microvasculokinetic, emollient, elasticising.

In this context some examples of particularly interesting botanical derivatives are represented by: **leucoanthocyanins (oligomeric polyphenols from grape seeds)**, ***Ginkgo biloba* dimeric flavonoids (GBDF, from *G. biloba* leaves)**, **esculoside (a coumarin from horse chestnut bark)**, **extensin (a glycoprotein from different botanical sources)**, which is currently under investigation for the industrial production scaling. Extensin will be for the future one possible substitute for animal collagen.

Leucoanthocyanins are among the most interesting anti-oxidants in the plant kingdom as demonstrated in several experimental investigations by using different techniques: Electron Spin Resonance spectroscopy, *in vitro* sonicated phosphatidylcholine liposomes and methyl-linoleate micelles. Based on these properties is the strong efficacy of leucoanthocyanins in preventing UV-induced erythema.

The microvasculokinetic activity of GBDF and esculoside has been assessed by techniques such as laser Doppler flowmetry and optic probe videocapillaroscopy.

AGE-RELATED REGIONAL VARIATIONS OF HUMAN SKIN BLOOD FLOW RESPONSE TO HISTAMINE

E. Tur & S. Brenner

(Department of Dermatology, Tel Aviv Medical Center, Israel)

The process of ageing involves many changes in the skin. These changes are not necessarily uniform, so the pattern of regional variations may vary with ageing. The aim of the present study was to assess age-related regional variations in skin function, by measuring the cutaneous microvascular response to histamine. Histamine was topically applied to the back and forearm of a young and an aged group of volunteers ($n=28$, 14 in each group), and the response was quantified utilizing laser Doppler flowmetry. The following parameters were calculated from the data and compared between the two groups: (i) peak response; (ii) the time required to reach the peak; (iii) the time required to decay to half the peak flow; and (iv) the area under the response-time curve. For the young group, the magnitude of the maximum response, as well as the extent of the response as measured by the area under the response curve were significantly greater on the back than on the forearm ($p<0.01$, and $p<0.05$, respectively). In contrast, for the aged group, the two sites did not significantly differ from each other. The time required to reach the peak was longer in the aged group over both sites, and so was the time required to decay to half the peak flow. These observations indicate regional anatomical or functional differences between old and young skin. These differences may provide insight into inherent differences influencing cutaneous manifestations of endogenous and exogenous diseases in various age groups.

CLINICAL AND LABORATORY INVESTIGATIONS ON TWO COMMERCIALY AVAILABLE BABY WIPES.

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To investigate the safety of a new moisturized wipe we performed a double blind study evaluating several clinical and laboratory parameters. 55 babies, wearing diapers, (56% males, 44% females) were divided in two groups, both randomly stratified for age and sex. Age ranged from 1 month to 2 years. First group has been cleaned with a new baby wipe during the test phases and the second group with a commercially available baby wipe. Three visits have been done. During the calibration phase (between visit 1 and 2) the babies were cleaned with water and a uniform neutral soap. During the test phase (between visit 2 and 3) the two baby wipes were exclusively used. At the beginning and at the end of the test phase a questionnaire for parents, a clinical evaluation of a dermatologist, skin pH measurement and skin microbiology were carried out. In conclusion both products were positively accepted by parents of the babies, and gave good results in cleaning with no alterations in physical characteristics of the epidermis.

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APPLICATIONS OF THERMODYNAMICS IN TREATMENTS OF UNAESTHETICISM

By G. Marineo (Center of Research for the study of Hi-Tech Electromedical Systems, based on modulation of biological entropy, Eta Beta elettronica Rome - Italy.)

Hereafter are illustrated the results of a study having the purpose of showing some application of entropy's variation in Biological Systems. This is artificially induced by an elettromedical system optimized for the treatment of unaestheticism resistant to the traditional methodology.

The study of thermodynamics in the field of Biofisics has permitted to verify the applicability of entropy's variation in living beings. Biological entropy is determined by the variation connected with the conversion of food into energy (+/-) summed up to the variation connected with the metabolism (+).

Therefore it has been deduced that the normal process of aging has a corresponding entropic function that grows in time until death. Supposing that some pathological events become chronic because of an anomalous growth of entropy at cellular level (dysfunctions of the bioenergetic structure), it has been studied an elettromedical (Delta-S ETV 4.0) capable of modify these parameters through a loop of question/answer done through appropriate electromagnetic fields, that are build moment by moment by a structure of microprocessor configurated in parallel architecture.

In practice have been chosen some cases of difficult (cellulitis wrinkles, osteoarticular alterations) or impossible solution (dystrophic cicatrix stabilized since 40 years) with traditional methodology, these were treated with 25 application of 30 minute each. Periodic examination have been done telematically with CCD sensor and put into computer for the control and digital data processing. The results are shown in the photographic testimonials.

Particularly interesting is the sequence that shows the connectival regeneration process in substitution of the stabilized cicatrix. The original wound goes back to an appendicitis developed in peritonitis, closed without stitches. The drainage with gauze of the wound contributed to amplify the unaestheticism and to the formation of numerous adhesions.

**"SAFETY ASSESSMENT OF IRRITATION ON HUMAN SKIN: AN ALTERNATIVE
METHOD FOR SAFETY TESTING AND VALIDATION STUDIES"**

Authors: A. Vasselli, M.V. Tolaini, G. Ferla, G. Serafini and L. Celleno

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When preliminary toxicological results make it feasible, clinical tests on man are a much more reliable direct method of assessing the irritant effect of raw materials and finished cosmetic products than tests on experimental animals. We have conducted numerous experimental tests (single and repeated insult patch test, soap chamber test, flex wash test, comedogenic activity test) and clinical usage tests over a 10-year period to compare in the cutaneous tollerability of ingredients and finished cosmetic products by contrasting the results obtained for the two types of tests performed on the same substances or cosmetic preparations. Here we report the comparison we made of raw materials and finished cosmetic products containing alpha-hydroxyacid esters as active principles. In this study, after assessing toxicological data relating to the active principles and the components of the finished product, we set up an evaluation protocol that consisted firstly in experimentally testing the active principles to assess both irritant and comedogenic effects, and secondly in performing clinical tests on finished cosmetic products containing the same active principles that gave a positive result in the previous experimental tests. These clinical studies enabled us to assess the irritant and comedogenic effect of the finished product under normal usage conditions and at the same time to determine specific effects of the product such as its keratolytic and moisturizing action and its coadiuvant effect in the treatment of acne and skin aging. In our opinion, this procedure provides a progressive way of evaluating skin tolerability to active principles used in cosmetics and to the finished products that contain them. In fact, starting from an assessment of existing toxicological data, we can progressively determine the irritant effect on the skin of new substances and thence, of new cosmetic preparations by correlating data obtained from experimental studies with those observed during clinical usage tests. We wish to emphasize that this method offers a valid substitute for experiments on animals, complies with ethical standards and provides more reliable data for the assessment of skin irritation. In 10 years of activity at our Test Centre we have never witnessed undesirable reactions that have gone beyond mild irritation of the skin. In conclusion, in the absence of "in vitro" tests that are equally effective, safe and transferable to human skin, at the present time this methodologies enable us on the one hand to confirm the potentially irritant effect of cosmetic ingredients, and on the other to set up a useful data bank of information on the safety and efficacy of substances and cosmetic preparations.

DEVELOPMENT AND APPLICATION OF BIOSENSORS TO THE ANALYSIS OF COSMETIC FORMULATIONS: BIOCHEMICAL AND ECONOMICAL ASPECTS

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The field of analytical controls in the cosmetic science and the cosmetic industry is rapidly growing, employing most of the analytical techniques that are commonly used mainly in pharmaceutical and food analysis. Most of those techniques are based on spectrometric and/or chromatographic methods which are indeed very powerful from the analytical point of view, while usually lacking in flexibility, requiring the presence of highly specialized personnel operating not on the "raw" samples, but instead assaying them after more or less complex pretreatment and extraction procedures.

The present contribution proposes the use of biosensors (especially enzymatic amperometric electrodes) as a flexible and inexpensive analytical tool for cosmetic analysis and controls. This presentation compares the physico-chemical features and the overall analytical performance of some electrochemical biosensors with those of the most commonly employed instrumental techniques in the field of cosmetic analysis and controls. The suitability of performing on line and in situ assays is also evaluated and discussed, also in view of possible combination of biosensors with data acquisition systems integrated with the production line.

The possible use of biosensors is discussed also in terms of their facility of use, of their good overall lifetime of operation and of their reduced costs of production, operation, and maintainance.

ANTI-CELLULITIS TRANSDERMAL DELIVERY SYSTEM: ANALYSIS OF THE ACTIVE INGREDIENTS

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The treatment of cellulitis has already been widely reported and numerous are the ways to treat it such as oral products, creams, or injections even if really spread on the market are more or less efficient. Indeed, oral administration, injections or creams application present a particular inconvenient for the patient because they need to be repeated in single dose due to the variation with time (as a gaussian curve) of the drug concentration.

Nowadays, the Transdermal Therapeutic System (TTS) which enables to remedy this major drawback of dependence is more and more often used. This medical product, consisting of a combination of an adhesive component and a drug, is applied on the skin. Afterwards, the drug migrates from the system through the skin and into the body, resulting in a constant drug concentration in the body for a prolonged time. The obvious benefit of the TTS is to maintain a constant, prolonged and therapeutically effective drug level in the body.

In this paper, a new Transdermal Delivery Cosmetic System (TDCS) to control the cellulitis is evaluated.

The fucosterol from the Quercia Marina seaweed, triterpene saponins and aglycone extracted from the Centella Asiatica L. plant, whose activity in the treatment of cellulitis is widely reported, are used as the active principles of the TDCS.

Important aspects such as the extraction of the drug from the patch, and the assessment of the efficiency of the procedure will be discussed.

Chemical analysis monitoring at 200nm is performed by an efficient reversed-phase High Performance liquid Chromatography (HPLC) procedure using a diode array detector.

Obviously, detection at such a low wave length shows a few difficulties, due to the absorbance of any transparent solvent at this wave length.

However, excellent results have been obtained in term of linearity, accuracy and specificity of the analytical method.

TOPICAL SKIN ACTIVITY OF NEW AHAs DERIVATIVES: AN IN VITRO STUDY
AS SAFETY TEST.

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The interest increasingly attracted by cosmetics in recent years has led to considerable development in the related technologies. The recent 93/95 Directive of the European Economic Community established that the safety of cosmetic products can no longer be tested on animal models, and that alternative methods must be employed.

For these reasons in vitro culture is now of outstanding interest in cosmetology.

An in vitro study for the cosmetological application of glycolic acid is elucidated.

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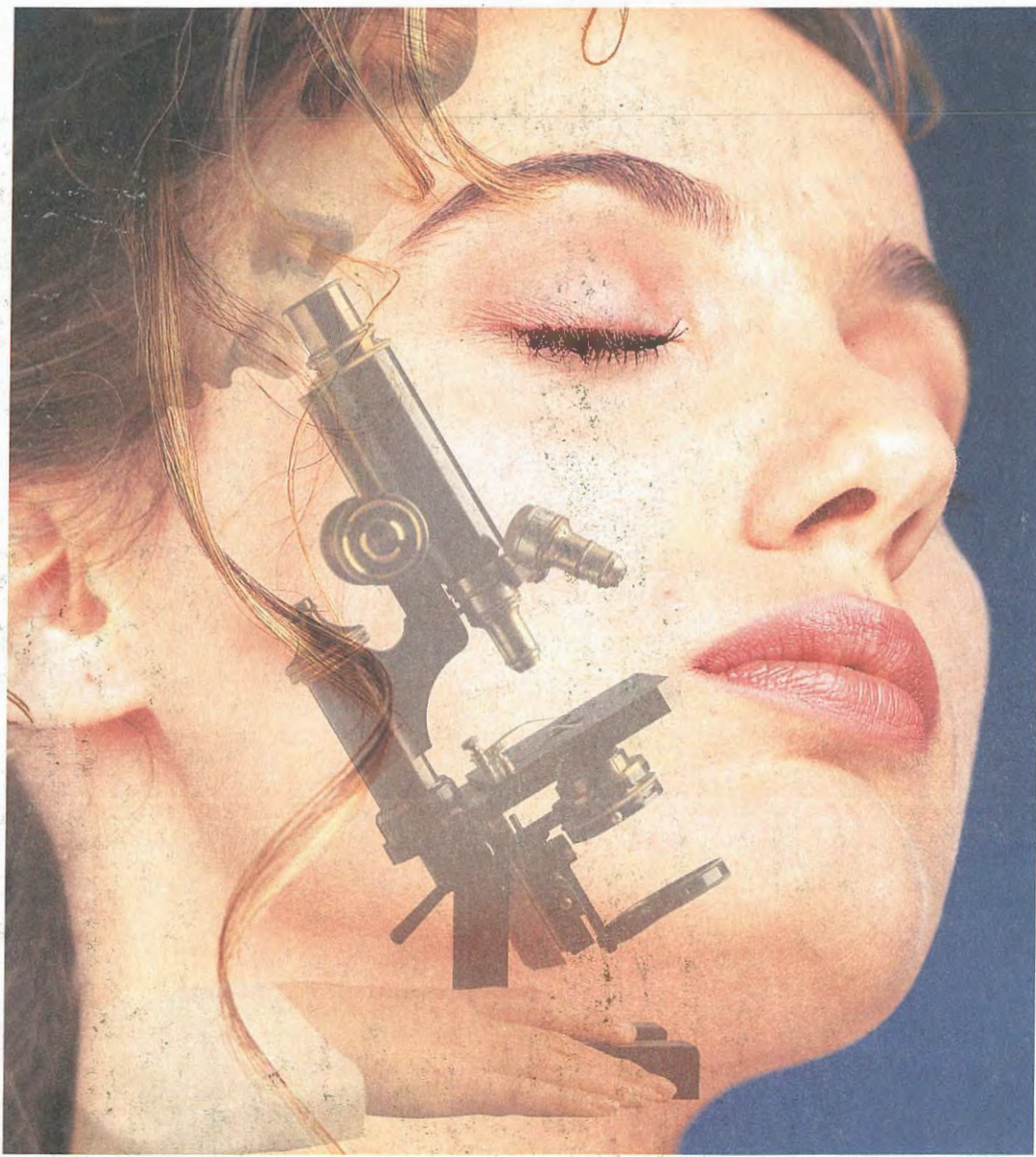


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