ISCE NEWSLETTER

Vol. 3, No. 1, Spring 1986

International Society of Chemical Ecology

From the Editor

Once again we are preparing for the Third Annual ISCE Meeting to be held in Berkeley, California, June 21-24, 1986. Dr. David Wood has organized a meeting covering a wide range of interesting topics in Chemical Ecology. The program and registration form were sent in an earlier mailing to all members. However, information is provided in the Newsletter for those who did not receive it.

The meeting promises to be unique. Our banquet speaker is Dr. John Garcia, a National Academy of Sciences member and Professor of Psychology and Psychiatry and Biobehavioral Sciences at UCLA. Dr. Garcia will be talking about "Coyote Predation: A Fishy and Gamy Business". The meeting will be dedicated to Dr. Robert Milton Silverstein, the first recipient of the ISCE Honor Medal. The Medal recognizes Dr. Silverstein's contribution to the field of Chemical Ecology, and will set a precedent for future awardees.

We sincerely thank the efforts of our past president, Dr. Gunnar Bergström, and welcome in Dr. Jean Langenheim as the ISCE new president for 1986-87.

Our Student Affairs Committee has been quiet and we hope that it will soon generate enough interest to become an effective part of ISCE. There will be funds available for student travel to the meeting if students are presenting a poster or oral presentation. Please contact me for further information.

Our membership roster is doing well, but could be better. As of April 25, 1986 ISCE has 66 life members, and 406 subscribed members from throughout 30 countries. We are still investigating ways of raising funds for ISCE expenses such as student scholarships, grants, travel, and research. If you have any suggestions, please contact Dr. Jerrold Meinwald.

Being Treasurer, I've also had the difficult task of returning some international checks because they were not drawn on U.S. banks etc. We realize that it is very difficult and sometimes expensive for our International members to pay their dues in U.S. dollars and the Executive Committee is searching for alternatives to make it easier to pay dues.

Those of you who did not receive a copy of the bylaw amendments and wish to do so, please let me know.

Finally, we wish to thank all those members who continue to submit material for the ISCE Newsletter. The success of the Newsletter and the Society is due, in part, to the continued exchange of ideas in Chemical Ecology.

Eloy Rodriguez

President's Message

In the last issue of the ISCE Newsletter, I discussed some questions regarding finances, employment opportunities for Chemical Ecologists, membership, and future meetings. The Executive Committee also discussed these items in our business meeting at Oxnard. We hope to hear some good news from Jerrold Meinwald concerning fund raising activities. We are also in the process of writing up a presentation which emphasizes the field of Chemical Ecology to industry and will be made available to members upon completion. Milt Silverstein and John Simeone, editors of Journal of Chemical Ecology, have suggested changes in the bylaws which were ratified by the Executive Committee. These changes were mailed to members at an earlier date. Regarding subscriptions to the Journal of Chemical Ecology at a reduced rate, members should contact Eloy Rodriguez, treasurer.

The Executive Committee also discussed the importance of having regional business meetings to deal with local items and will begin with a weekend meeting in Europe this spring. Perhaps local business meetings might provide a forum where Advisory Council members can actively participate.

The Third Annual ISCE Meeting will be held in Berkeley, California on June 21-24 under the leadership of David Wood. Everyone is cordially invited to attend and contribute.

ISCE, together with the Journal of Chemical Ecology, has established itself as the long sought after international and interdisciplinary forum for everyone doing research in the field of Chemical Ecology. Looking at the titles of lectures/posters of the past meetings as well as the articles in the Journal, it is obvious that the scientific spectrum has been considerably broadened to include all kinds of organism such as microorganisms, plants, marine organisms, and mammals. True ecological aspects of chemical communication and interaction are more than before covered by talks at meetings and articles in the Journal. The geographical spread of lectures and authors is truly pan global.

Lastly, I would like to thank the Society for having had the honor of serving as President this year, and extend a very warm welcome to Jean Langenheim, forthcoming ISCE President

So, now that we have the Journal and the Society, let's surf further together on the wave of Chemical Ecology. Next landing: Berkeley.

Gunnar Bergström

ISCE Honor Medal Fund

The Executive Committee of the International Society of Chemical Ecology has decided to recognize Professor Robert Milton Silverstein for his important and diverse scientific contributions to our understanding of chemical ecology and for his commitment to the excellence and growth of our society and the JOURNAL OF CHEMICAL ECOLOGY.

Dr. David Wood will present a medal from the Society to Professor Silverstein at the ISCE Third Annual Meeting in Berkeley. The Society wants to take advantage of this occasion to establish a fund which will provide an honorarium for future awardees of the Society's medal. Any amount that you care to contribute will be greatly appreciated by the Society and is, of course, tax-deductible. Please forward your contributions to ISCE Secretary/Treasurer Dr. Eloy Rodriguez.

If an ISCE member wishes to express his/her sentiments to Professor Silverstein on this important occasion, Dr. Wood will begin collating letters and placing them in an appropriate binder which will be presented to Professor Silverstein. Please use 8-1/2″ x 11″ high quality bond paper (one page only) and leave a 1.5″ margin on the left side of the letter.

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INTERNATIONAL SOCIETY OF CHEMICAL ECOLOGY, INC.
THIRD ANNUAL MEETING

June 21-24, 1986
University of California, Berkeley
at Cheney Hall - Unit 1, Residence Hall

Afternoons and evenings will be reserved for oral papers and poster presentations. If you wish to make such a presentation, or have any questions concerning the meeting, contact: DAVID WOOD, ENTOMOLOGY AND PARASITOLOGY, UNIVERSITY OF CALIFORNIA, BERKELEY, CALIFORNIA, 94720 (415) 642-1603. Registration fee: $100 for Full Member, $30 for Student Member. An additional amount of $127 is required for accommodations if you want a single room, $91 for a double room. The amount includes meals and banquet ticket.

SYMPOSIA PROGRAM

Sunday June 22
"ECOLOGICAL CHEMISTRY: FROM SPONGES TO MAMMALS"
Murray S. Blum - Moderator
University of Georgia

David A. Jones University of Hull, UK	Genetics of herbivory
Franklin H. Bronson University of Texas	Chemical ecology of rodents.
Shozo Takahashi Kyoto University	Chemical ecology of host location by parasitoids
Henry M. Fales Laboratory of Chemistry National Institutes of Health	Chemical ecology of social insects.
Remy Brossut Universite of Dijon France	Chemical ecology of cockroaches.
Daloze Desire Universite Libre de Bruxelles, Belgium	Chemical ecology of sponges.

Monday, June 23 (Morning Session)
"CHEMICAL ECOLOGY - FRONTIERS AND THE FUTURE"
David L. Wood - Moderator
University of California, Berkeley

James H. Cane Auburn University	Evolution of host and conspecific discrimination in bark beetles.
Kenneth E. Glander Duke University	The impact of plant produced chemicals on mantled howling monkey feeding behavior.
Ana Louisa Anaya Universidad Nacional Autonoma de Mexico	Future studies of allelopathy in Mexican traditional agroecosystems.
W. Boland Institute fur Biochemie, Koln Federal Republic of Germany	Chemical communication in marine brown algae: Pheromones and their biogenetic interrelations.
Patricia Berger University of Utah	Avian reproductive responses to environmental cues.
Svata Louda University of Nebraska	Contribution and limitation of chemical variation as a mediating mechanism for impact on native plant populations.

Monday, June 23 (Afternoon Session)
"CURRENT TOPICS IN SEMIOCHEMISTRY"
Isao Kubo - Moderator
University of California

Gerrit de Boer University of California	Role of phytoecdysteroids in insect-plant interactions
Yoko Naya Suntori Institute Osaka, Japan	Sea anemone and anemone-fish interactions.
D.P. Richardson Cornell University	Defense agents from asian trees.
David Lynn University of Chicago	Plant-Plant Interactions.

Monday Evening
John Garcia
University of California, Los Angeles
"COYOTE PREDATION: A FISHY AND GAMY BUSINESS"

Tuesday, June 24
"DEFENSIVE STRATEGIES AGAINST TANNINS"
Larry Butler - Moderator
Purdue University

Michael M. Martin University of Michigan	Tannins are just another toxin for insects.
Richard Lindroth University of Wisconsin	The roles of plant tannins in nutritional ecology of small mammals.
Don M. Carson University of California, Davis	Salivary proline-rich tannin-binding proteins.
Charles T. Robbins Washington State University	The interaction of ruminants with plant tannins.
Ralph Nicholson Purdue University	Protection of fungi from toxic phenols in the environment: A role for glycoprotein mucilages.

Professor Jean H. Langenheim is in the Department of Biology at The University of California, Santa Cruz. Dr. Langenheim's research centers around the influence of environmental factors (abiotic and biotic) on the synthesis of plant secondary chemicals, and the ecological and evolutionary roles that these chemicals play in the life of plants. The evolutionary backdrop for much of her current tropical work began with some of the first chemical studies of the botanical origin of amber (fossil resin) through geologic time, which showed that the greatest diversity of trees producing copious amounts of terpenoid resins occurred in the tropics or subtropics. This led to questions regarding the possible significance of this correlation, and the selection of the amphi-Atlantic legume genera *Hymenaea* and *Copaifera* as model tropical angiosperms for detailed study. Information is so lacking about most tropical trees (despite *Hymenaea* and *Copaifera* being utilized for their resins and timber) that a multifaceted approach has been necessary. It has included systematic revisions of the genera, identification and structural determination of the chemicals and anatomical studies of the secretory systems, which have proceeded in parallel with the ecological research. She and her students have done extensive field work, and collaborated with numerous institutions and individuals, in all major lowland tropical ecosystems throughout Latin America and portions of Africa. She has also served on the Executive Committee of The Organization for Tropical Studies, on the National Academy of Sciences/Brazilian Research Council (CNPq) Advisory Committee on the Humid Tropics and the NSF Committee on Projeto Flora Amazonica.

She has been interested in comparing the chemicals among different organs of *Hymenaea* and *Copaifera,* but particularly in documenting intraplant, interplant, interpopulational and interspecies variation in leaf terpenes (also phenolics and non-protein amino acids). She further has done experiments under controlled conditions with the effects of physical environmental factors (light, moisture, temperature, etc.) and biotic factors (fungi and lepidopteran insects) on these patterns of variation in the process of assessing their possible defensive roles. A unique feature of this long-term, detailed investigation is the biogeographic perspective in comparing chemical variation and its relation to some of the predominant insect and fungal populations of the trees in various tropical ecosystems extending from rain forests to the dry forests and savannas.

She also has analyzed variation of terpenes, and abiotic and biotic environmental influences on them, in Pacific coast trees as the redwood (*Sequoia sempervirens)* and California bay (*Umbellularia californica),* as well as in the perennial mint (*Satureja douglasii).* These analyses give some basis for understanding the plant's capacity to vary these secondary chemicals through space and time under different environmental pressures. They thus contribute to both ecologic and chemosystemic perspectives as well as to information regarding possible utilization of these chemicals as forest products. She has published over seventy articles on these subjects, and is currently working on a synthesis paper on the evolution of resin-secreting plants.

Dr. Langenheim's work in the tropics has led to her being recognized by election last year to presidency of The Association for Tropical Biology. She also is currently President-elect of The Ecological Society of America, and The International Society of Chemical Ecology.

Dr. Martine Rowell-Rahier, is presently a lecturer and research scientist in Herbivore Biology at the Zoologisches Institut der Universität at Basel, Switzerland, and Managing Editor of *Experientia,* Birkhauser Verlag, Basel. Dr. Rowell-Rahier received her doctoral degree from Universitat Basel in 1983, Summa Cum Laude. She has published numberous articles and her most recent one entitled "Economics of Chemical Defense in the Chrysomelinae" which is co-authored with Dr. J. Pasteels, will appear in the JOURNAL OF CHEMICAL ECOLOGY.

Her research interest are centered on the interaction between the herbivorous chrysomelid beetles and their host plants. This group includes many species which have evolved unusually intricate relationship with the plant secondary chemicals found in their food. In the past, Dr. Rowell-Rahier has concentrated on the *Salix* feeding species and compared those insects which elaborate their defensive secretion from plant precurors and those which synthesize them *(de novo).* This dichotomy has many energetic and ecological consequences.

Dr. Rowell-Rahier is also interested in geographic variation in food plant specialization within taxa and the resulting microadaptations to different phytochemical constituents. In this context, she has been studying an alpine beetle which includes isolated species of both Umbelliferae and Compositae in its generic good plant spectrum. A recurrent theme in her research is the interplay between short term adaptation and long term evolutionary trends.

Dr. Rowell-Rahier works closely with Dr. J.M. Pasteels' group in Brussels Free University where she first derived her interest in the chemical ecology of leaf beetles.

Letters

Recently, Dr. Clive G. Jones proposed that the Journal of Chemical Ecology institute a forum for informal discussion. We fully agree with Dr. Jones that a vehicle for opinion, discussion, and rebuttal is useful and, in fact, the Journal has always published letters to the editors; however, we have never formally stated that such letters are welcomed. We now make such a statement on the inside front and back covers.

R.M. Silverstein
J.B. Simeone, Editors
Journal of Chemical Ecology

New Life Members

ISCE would like to extend a very special thanks to new members of the Life Membership Program as of May 1, 1986: Heinrich Arn, Switzerland; K.S. Boo, Rep. Korea; Michael Dix, Guatemala; K.B. Døving, Norway; J.A. McLean, Canada; Kenji Mori, Japan; Yoko Naya, Japan; L.B. Brattsten, U.S.A.

Fourth Annual ISCE Meeting

The Fourth Annual Meeting of the International Society of Chemical Ecology will be held at the University of Hull, England from July 14-17, 1987. We will have self contained conference facilities at the Lawns Centre, using student accommodation in Lawns Hall. The fee, including all meals, will be approximately £140. Members requesting further information should contact Professor David A. Jones, Department of Plant Biology and Genetics, University of Hull, Hull HU6 7RX, England.

The area around Hull—Holderness, the Wolds, the Yorkshire Moors and the River Humber—contains several sights of unique interest. The Spurn Peninsula has a 250 year cycle of development and destruction and, although the sequence was checked during the last century, every year now we expect the northern isthmus to be breeched.

Garton Slack is a 30 minute drive from Hull and is the site of the recently discovered Celtic chariot burials. A little further is Wharram Quarry, an area leased from the Lord Middleton by the Yorkshire Wildlife Trust and used for experiments on plant/animal ecology, and field studies of chemical aspects of plant/animal interactions.

North Sea Ferries is based at the King George Dock in Hull and provides transportation to and from mainland Europe. There are nightly car ferry services to and from Europort (Rotterdam) and Zeebrugge. Most of the U.K. commercial airports handle international flights. Those renting a car should consider flying into Manchester, Leeds-Bradsford, Birmingham or Newcastle airports, then driving to Hull. The main road into Hull from the A1 or the M1 is excellent.

For those not renting a car, you will find that the train service from London to to Hull is fast and convenient. From Heathrow you can take and Underground train directly to Kirtgs Cross Station. From Gatwick you take a train to Victoria and change to the Underground for Kings Cross.

The small Humberside airport has a twice daily service to Heathrow and a better one to Amsterdam(!) but travellers are advised the public transportation (i.e. buses, trains) from the Airport to Hull is non existant. Taxis cost is £16.00. Both Hertz (0652-688414) and Godfrey Davis (0652-680338) offices are located at Humberside Airport if you wish to reserve a car in advance.

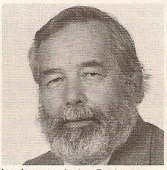
We look forward to seeing you in Hull in 1987.

David A. Jones

Dr. Robert Milton Silverstein is considered a leading authority on the chemistry of insect pheromones. His research has dealt with the identification of the pheromones of many destructive pest species both in Agriculture and Forestry. In 1966, his pioneering study of the aggregation pheromone of a bark beetle (*Ips paraconfusus)* led to the first identification of a beetle pheromone, the discovery of the first multi-component pheromone (which has proven to be the rule rather than the exception), the discovery of synergism among inactive components, and the identification of the first male-produced pheromone. The subsequent identification of the boll-weevil pheromone was predicted in this study and comprised all of the above elements. It was Dr. Silverstein's elegant chemical identification procedures that finally produced the pink bollworm pheromones after many years of controversy. The first operational use of pheromones in insect control was recently approved by the Environmental Protection Agency for the pink bollworm. Further, he and his students and collaborators have indentified pheromones from several species of dermestids that are destructive to stored foodstuffs. These compounds are in use today throughout the world as a survey method to detect infestations in ships and storage facilities. The pheromone of one of the granary moths was also indentified in his laboratory. He identified the first trail pheromone from a species of leaf-cutting ant, the most destructive pests of agriculture in South America. His research has also led to the identification of the pheromones of several very destructive bark beetle species, i.e. the smaller European elm bark beetle (Dutch elm disease vector), the western pine beetle, three species of engraver beetles, and two species of ambrosia beetles.

Dr. Silverstein has worked successfully with entomologists, chemists and ecologists to unlock the chemical communication code of many destructive insect species and has contributed his chemical expertise to the development of these chemicals for use in pest management systems. In addition, with Dr. John Simeone, Dr. Silverstein established the JOURNAL OF CHEMICAL ECOLOGY.

Dr. Silverstein is a senior statesman in the field of chemical ecology and has earned the deep respect and admiration of the important contributors to this rapidly developing area of science.



Dr. John Garcia, invited keynote speaker for the upcoming International Society of Chemical Ecology Meeting to be held in Berkeley, is Professor of Pyschology and Psychiatry and Biobehavorial Sciences at the University of California, Los Angeles. Dr. Garcia, a leading member of the National Academy of Sciences, has made various outstanding contributions in adaptive behavior and intelligence; evolution of learning mechanisms; aversions induced by drugs; X-rays and toxins and chemoreception. Over his illustrious career, Dr. Garcia has published over 100 scientific articles and book chapters.

ISCE is indeed honored to have Dr. Garcia lecture on "Coyote Predation: A Fishy and Gamy Business" on Monday evening, June 23rd.

Upcoming Meetings

June 8-12, 1986, 8th Rocky Mountain Regional Meeting, American Chemical Society, Denver, Co. Inquiry: William E. Beard USDA-ARS, P.O. Box E., Fort Collins, Co. 80522 (303) 482-5733.

June 24-26,.1986 Annual Meeting of the Pacific Branch of the Entomological Society of America—Chemical Basis of Plant/Insect Interactions, San Diego, California. Inquiry: J. Daniel Hare, Dept. of Entomology, University of California, Riverside, CA. 92521 (714) 787-3858.

July 13-17, 1986, The Phytochemical Society of North America Annual Meeting, Beltsville Agricultural Research Center, Beltsville, Maryland. Inquiry: Dr. James A. Saunders or Dr. Lynn Kosak-Channing, Co-Chairpersons, USDA ARS, Bldg. 001, Rm 116, Beltsville, MD. 20705 (301) 344-3477.

July 27-30, 1986, The 27th Annual American Society of Pharmacognosy Meeting-Antibiotics: Biosynthesis, Molecular Biology and Genetics, Univ. of Michigan, Ann Arbor. Inquiry: Ronald Woodard or George Hatfield, College of Pharmacy, Univ. of Michigan, Ann Arbor, MI. 48109 (313) 764-7366.

August 10-14, 1986, Botanical Society of America Annual Meeting, University of Massachusetts. If you need registration, title submissions, and abstract forms, write to Professor Thomas N. Taylor, Department of Botany, the Ohio State University, Columbus, Ohio 43210.

August 17-22, 1986, 15th IUPAC International Symposium On The Chemistry of Natural Products, Netherlands Congress Centre, The Hague, The Netherlands. Contact: Scientific Secretariat: Laboratory of Organic Chemistry, University of Amsterdam, Nieuwe Achtergracht 129, 1018 WS Amsterdam, The Netherlands.

September 7-12, 1986, Light-Activated Pesticides, Agrochemical Division-American Chemical Society, Anaheim, CA. Inquiry: Dr. James Heitz, Dept. of Biochemistry, Mississippi State Univ., Mississippi State, MS. 39762 or Dr. Kelsey Downum, Dept. of Biology, Florida International Univ., Miami, FL. 33199 (305) 554-2201.

September 25-26, 1986, Brain, Mind and Learning, Society for the Advancement of Chicanos and Native Americans in Science, (SACNAS), Pasadena, California. Inquiry: Dr. Diana Marinez, 100 N. Kedzie, Michigan State University, East Lansing, Michigan 48824 (517) 355-4600.

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