P R O G R A M

THE FIRST ANNUAL MEETING OF THE ASSOCIATION FOR CHEMORECEPTION SCIENCES

SESSIONS

1. Biological Origins of Odors
   Chairperson and/or Organizer: R.H. Cagan (Monell Ctr.)/F. Margolis (Roche Inst.)

   R. Bonsall (Emory Univ.) Production of copulin in the Rhesus monkey.
   J. Kostelc (Monell Ctr.)/G. Preti (Monell Ctr.) Oral volatiles diagnostic of reproductive and disease states.
   F. Regnier (Purdue Univ.) A sex pheromone in the dog.
   J. Jorgenson (Indiana Univ.) Primer pheromones of laboratory mice.

2. Insect Chemoreception
   Chairperson and/or Organizer: J. Frazier (Mississippi State Univ.)

   J.S. Vande Berg (Old Dominion Univ.) Functional morphology of contact chemoreceptors.
   R.J. O'Connell (Worcester Foundation) Coding in insect pheromone receptors.
   F. Hanson (Univ. Maryland) Coding of plant chemicals by Lepidopterous larvae.
   M. Birch (Univ. California, Davis) Some new aspects of pheromone receptors and behavior in bark beetles.

3. Chemical Senses in the Selection of Foods and Regulation of Intake
   Chairperson and/or Organizer: G. Beauchamp (Monell Inst.)/D.V. Smith (Univ. Wyoming)

   G. Nowlis (Rockefeller Univ.) Ingestive reflexes and food selection.
   R.M. Pangborn (Univ. California, Davis) Human sensory responses to food stimuli.
   P. Zeigler (Amer. Museum Natural History) Sensory control over food intake.
   P. Rozin (Univ. Pennsylvania) Flavor and food choice in humans.

4. Clinical Disorders - Taste
   Chairperson and/or Organizer: C. Mistretta (Univ. Michigan)

   L. Bartoshuk (Yale Univ.) Critical Review: Altered taste perception in cancer patients.
   R. Bernard (Univ. Michigan) Taste sensitivity in hypertensive animals.
   F. Catalannoto (Univ. Connecticut Sch. Dent. Med.) Taste changes associated with zinc deficiency.
   M. Graham (Univ. Michigan Sch. Med.) Light and electron microscopic changes in chorda tympani nerve associated with chronic ear disease.
   R. Rivlin (Columbia Univ., Col. P & S) Changes in taste sensitivity associated with thyroid dysfunction.

5. Central Nervous System Processes in Gustation and Olfaction
   Chairperson and/or Organizer: F. Macrides (Worcester Foundation)/ R. Gesteland (Northwestern Univ.)

G. Shepherd/K. Mori (Yale Univ.) Olfactory bulb organization.
C. Ribak (Univ. California, Irvine) GABAergic neurons in the olfactory system.
R. Norgren (Rockefeller Univ.) Gustatory neuroanatomy and its relationships to feeding and drinking behavior.
D.V. Smith (Univ. Wyoming) Electrophysiological analysis of central taste systems.

6. Impact of Immunological-Genetic Techniques on Chemoreception
Chairperson and/or Organizer: R. O'Connell (Worcester Foundation)

Entire Panel - Brief tutorial on basic jargon and techniques.
H. Cantor (Harvard Univ.) How current views of cell-antigen recognition (and the techniques used to establish same) might impact on the problem of receptor cell-odorant molecule interactions.
H. Cantor (Harvard Univ.) The general problem of the relationship of receptor cell turnover and specification to the known immunological and genetic mechanisms for lymphocyte specification.
E. Boyse (Sloan-Kettering Inst.) The relationship between genetic controls of olfactory perception and the genetic mechanisms which regulate the histocompatibility complex.
S. Price (Med. Col. Virginia) Techniques for obtaining purified receptor site proteins or producing specific receptor site blocking agents.

7. Aquatic Chemoreception
Chairperson and/or Organizer: B. Ache (Whitney Marine Lab., Univ. Florida)

J. Kittredge (Marine Biomed. Inst., Galveston) Chemical nature of aquatic signals.
J. Atema (Marine Biol. Lab., Woods Hole) Olfaction vs. taste in aquatic organisms.
J. Case (Univ. California, Santa Barbara) Receptor specializations for aquatic chemoreception - anatomy and physiology.
J. Caprio (Louisiana State Univ.) Low receptor thresholds: their implication for aquatic chemosensitivity.

8. Research Basis for the Creation of New Chemosensory Products
Chairperson and/or Organizer: W.S. Cain (Yale Univ.)

M.G. Lindley (General Foods) Role of structure-activity relationships in the development of new sweeteners.
A.A. Schleppnik (Monsanto Flavor/Essence) Approaches to aroma chemical design.
W. Brugger (International Flavors & Fragrances) Aids for the design of new molecules.
R. Desimone (PFW) Nitrile aroma chemicals.
B. Mookherjee (International Flavors & Fragrances) Odor-structure relationships in patchouli compounds.

9. The Givaudan Lecture (Keynote Address)
V.G. Dethier (Univ. Mass.) The odor of sanctity and the taste of sin.

10. Poster Sessions
Organizer: M. Frank (Rockefeller Univ.)

11. Business Session

Thumbnail resumé of individual paper sessions

1. To focus on the production and chemistry of volatile, odorous compounds in mammals. This is in contrast to the more usual focus of chemoreception scientists which emphasizes the reception of such chemicals. These scientists will now be exposed to an antecedent question, viz., from whence do these volatiles come?

2. A review, for a mainly vertebrate oriented group of chemosensory investigators, of the most recent findings concerning insect chemoreception. The morphology, transduction, coding and behavior of those insect chemosensory systems studied in greatest detail will be presented. A knowledge of insect chemoreception has in the past greatly affected our conceptualization of chemosensory mechanisms in general; it is necessary that we continue to be informed of advances in this field.

3. It is to be expected that one of the most important roles of the chemical senses is in the selection of foods and the regulation of food intake. Yet many chemoreception scientists, working in their own research niches, may lose sight of some of the uses to which chemosensory systems may be put. In this session particular attention will be directed to the sensory components of complex food items, and although some animal model systems will be presented, the emphasis will be placed upon the role of the chemical senses in human food choices.

4. In other sensory systems the study of their clinical disorders has often given important insights into their basic mechanisms. Perhaps the same could be true of the chemical senses but communication between the pertinent clinicians and the basic scientists has not been as traditional as in the other senses. This session, with both clinical and basic science participants, will demonstrate that studies of clinical taste disorders can contribute to our understanding of basic taste mechanisms. On the other hand, exchanges between basic and clinical scientists might lead to alternative methods for clinically evaluating patients for altered taste functions.

5. There has been rapid progress in understanding the CNS processing of olfactory and gustatory information and in the synaptic events which provide the substrate for this processing. Indeed, some aspects of these synaptic events have become a model for CNS sensory processing in general. The speakers will emphasize the relations between neural structures and cellular activity in the central nervous system and some of the implications for chemosensory behavior.

6. There have been developments in modern immunology and genetics which, due to some similarities in the problems to be resolved, may have important consequences for the study of chemoreception. This session, presenting speakers eminent in immunology and genetics, will both educate the chemosensory audience in the key thought processes, investigative approaches, and techniques of their field and demonstrate how these could provide powerful tools and insights for the study of chemoreception.

7. The intent of this session is two-fold: a) to bring together, providing a forum for the first time, those chemosensory investigators interested in chemical communication in the animals that live in water; b) to educate the remainder of the chemosensory research community of the advances in this area. The session will not only deal with such present problems as stimulus control and stimulant identity but will also try to establish guidelines for determining future problems worthy of investigation. Both fish and invertebrate preparations will be included.

8. In the flavor, fragrance, and food industries, the creation of new products rests increasingly on a foundation of scientific exploration. At the most fundamental level in this process a chemist alters the structure of a molecule and then notes any changes in its chemosensory properties. Such an exploration of structure-activity relationships (industrially relevant insofar as it uncovers efficacious new fragrance materials, new sweetener, etc.) also possesses pivotal relevance to the understanding of human chemoreception. This session will acknowledge this pivotal role, introduce some particularly noteworthy industrial scientists to a largely non-industrial audience, and demonstrate five different approaches to new product creation thus highlighting the study of structure-activity relationships.

9. This keynote lecture, sponsored by the Givaudan Corporation, is to become an annual event. Its theme this year is to further emphasize the potential of multidisciplinary interactions for the chemosensory research effort. We are particularly fortunate to have Dr. Vincent Dethier inaugurate this series of addresses.

Schedule

April 23 -	8:30 A.M.	- 10:30 A.M.	-	Paper session
and	10:30 A.M.	- 11:00 A.M.	-	Break
April 24	11:00 A.M.	- 1:00 P.M.	-	Paper session
	8:00 P.M.	- - - - - - - -	-	Poster Session
April 25 -	8:30 A.M.	- 10:30 A.M.	-	Paper session
	10:30 A.M.	- 11:00 A.M.	-	Break
	11:00 A.M.	- 1:00 P.M.	-	Business session
	6:00 P.M.	- 8:00 P.M.	-	Dinner and Givaudan Lecture
	8:00 P.M.	- 10:00 P.M.	-	Paper session
April 26 -	8:30 A.M.	- 10:30 A.M.	-	Paper session
	10:30 A.M.	- 11:00 A.M.	-	Break
	11:00 A.M.	- 1:00 P.M.	-	Paper session

Explanatory Note

In developing the program for this initial meeting the steering committee has tried to accommodate several major considerations. First, in keeping with the basic objective of the meeting an attempt was made to attract a broad spectrum of scientists. Since, however, it is not possible in a limited time frame to cover the specific interests of every possible constituency in the chemosensory research community, some topics just had to be deferred to later meetings. In opting for the material to be included in this first meeting the steering committee weighed several factors. Some of these were: a) the proven or potential impact of that material upon the study of the chemical senses, b) how recently that material had been adequately treated at other meetings attended by major segments of our projected membership, c) which of the many special interest groups in the chemosensory community must be represented at this point in the development of this new organization to best ensure its success.

Secondly, the steering committee recognized that this initial meeting must serve as a "mixer" for groups of investigators with diverse approaches to the chemical senses. Therefore, the sessions highlighting each approach are designed not only with

enough detailed information to further the knowledge of the specialist but also to demonstrate to the non-specialist when that particular approach is most profitably indicated, how it is most correctly applied, and what interpretations can be most properly drawn.

Thirdly, in order to further promote communication among the members of the various special interest groups the meeting must include sufficient time for personal, informal interactions. Therefore, following the lead of the Gordon Conferences, afternoons have been left largely unstructured.

Fourthly, in order to ensure that this initial meeting would contain material appealing to the broad spectrum of approaches represented in the chemosensory community, the sessions were structured with invited speakers rather than relying upon voluntary presentations. However, it was still deemed necessary to incorporate some mechanism by which those investigators who, though not invited to speak, can still communicate their latest findings to their colleagues. Poster sessions which are accorded equal prominence to the other sessions will serve this purpose.

Lastly, it is essential that time be set aside for a business meeting. This is a new organization which needs to structure itself and elect its leadership. The Association is open to anybody interested in chemosensory research and all attendees must have the opportunity to participate in the process of its organization.

The format and program of this initial meeting need not be duplicated in future meetings. As explained above, there were contingencies and constraints in the organization of this first meeting which restricted the steering committee's options for formats and programs. It is anticipated that when, in April, the Association becomes formalized, establishes an operational structure, and learns the wishes of its membership, it will feel free to restructure the formats and programs of its meetings in any way it feels appropriate.