

Project-coordination and Organization: Benigna Mallebrein

Scientific Advisor: Jürgen K. Mai (E-mail: [mai@uni-duesseldorf.de](mailto:mai@uni-duesseldorf.de))

Layout and Prepress: Thomas Voß

Grafic Work: Christine Opfermann-Rüngeler and Dimitar Tzvetkow

Realisation: Threebee Group ([www.3beegroup.com](http://www.3beegroup.com)) in collaboration with the Assessorato all'Agricoltura e Foreste, Sicily, Italy

Copyright © Jürgen K. Mai and Contributors (for their texts), 2005.

Published by Edition Raetia GmbH, Via Grappoli, 23 / Weintraubengasse 23 I-39100 Bolzano / Bozen  
(Email: [info@raetia.com](mailto:info@raetia.com))

Printed by fotolito Longo, via Kravogel 7, I- 39100 Bolzano (E-mail: [info@longogroup.it](mailto:info@longogroup.it))

ISBN: 88-7283-235-7  
Printed 2005

All rights reserved. No part of this publication may be reproduced or distributed in any form or by any means or stored in a database or retrieval system, without prior written permission.

## Contents

- Greetings - Rita Levi Montalcini	V
- Greetings - Luigi Amadio	IX
- Greetings - Felice Crosta	XIII
- The Brain – a Galaxy (Jürgen K. Mai)	1
Development - a key to an understanding of the brain	
Development of taste and smell	
The adult brain	
Essential parts of the brain	
Systems	
Outlook	
- Wine: It's a Matter of Taste (Thomas C. Pritchard)	15
Describing the sensory ensemble	
Sensory partition	
Anatomy of the gustatory system	
Bindung	
- Olfaction and Wine (Joel L. Price)	27
Anatomy of the olfactory system	
- The Role of Aftertaste (Giuseppe Rivolin)	37
- Smell, Taste, Texture, Temperature and the Pleasantness of Wine and Food in the Brain (Edmund T. Rolls)	41
Taste processing in the primate brain	
Five prototypical tastes, including umami	
The representation of flavour: Convergence of olfactory and taste inputs	
The representation of the pleasantness of odour in the brain	
The responses of orbitofrontal cortex taste and olfactory neurons to the sight, texture, and temperature of food	
Imaging studies in humans	

Emotions	
Conclusions	
- The Appreciation of Wine by Sommeliers	
<b>A Functional Magnetic Resonance Study of Sensory Integration</b>	
<b>(Alessandro Castriota-Scanderbeg et al.)</b>	53
Study design	
The differences between sommeliers and „normal“ drinkers	
What it means	
- The Art of Seducing Neurons with Good Food (Heinz Beck)	61
- Further Readings	69
- Glossary	73
- Acknowledgements	81