

PREFACE

The VI NATO Advanced Study Institute on Plant Molecular Biology, held in Elmau, Bavaria, Germany, from 14 to 23 May, 1990, brought together representative scientific leaders from all over the world to review their latest results. They presented lectures or posters, participated in lively discussions, educated students, and exchanged views and plans for future research in this highly exciting field of science.

The experiments, data and questions were naturally varied, but all of them illustrate that the modern techniques of molecular biology, complemented by developments in immunology, genetics, and ultrastructural research, have pervaded nearly every branch of biology. The presentations show that these approaches have tremendously increased our potential both for fundamental research, our understanding of life, and by analogy to the precedents of physics and chemistry, have led and will continue to lead to "engineering sciences" and implicitly, to new industrial processes.

Some of these applications are a matter of debate in the public domain today and many feel that the development of industrial gene technology requires the attention of the whole scientific community. Nevertheless, the implications of this research for the genetic improvement of agricultural plants are profound. Some of the near term technologies being developed provide novel approaches for improving the utility of food crops. They can also result in reduced dependence on the use of pesticides for food production. Scientists have the knowledge to evaluate these developments and we hope that this ASI and volume have served, and will continue to serve this purpose as well.

The contributions in this book summarize lectures of invited speakers, as well as poster presentations. They have not been subjected to any major cutting or editing, in order to preserve the individual nature of each contribution.

We appreciate greatly the financial support of the following organizations and institutions: NATO, FEBS, ISPMB, Ministerium für Forschung und Technologie der Bundesrepublik Deutschland, Deutsche Forschungsgemeinschaft, Fonds der Chemischen Industrie, Bayerisches Staatsministerium für Wissenschaft und Kunst, Schering AG, CIBA-GEIGY, Bundesverband Deutscher Pflanzenzüchter, Monsanto Agricultural Products, Boehringer Mannheim GmbH, Amersham Buchler, Kleinwanzlebener Saatzucht, Pharmacia as well as the Stiftung Volkswagenwerk for an associated workshop. Without their support this meeting could not have taken place. We are also indebted to our colleagues in the staff of the Institute of Botany, University München, for their enthusiastic handling of the logistic and administrative aspects of the conference.

Reinhold G. Herrmann
München, Germany

Brian Larkins
Tucson, USA