is greater than the corresponding complementarity between *E. coli* genes and *B. subtilis* 16*S* RNA. The complementarity with the ribosome binding sites of *E. coli* mRNA's may be insufficient to promote proper binding of *B. subtilis* ribosomes and consequently may be involved in the template specificity of *B. subtilis* ribosomes.

Another subject well covered in the two books is the development of a molecular cloning system in *B. subtilis*. The books describe the problems encountered in trying to develop such a system and the steps that have been taken to overcome them and give examples of genes that have been cloned in *B. subtilis*. Also covered is the development of several cloning vectors for use in *B. subtilis* and the development of shuttle vectors that replicate in either *B. subtilis* or *E. coli*.

The books are worthwhile additions to the literature. Because the Dubnau book is more of a review of the entire field it might hold greater interest for workers from other fields. In covering fewer topics in greater detail, the Ganesan, Chang, and Hoch book might be more valuable to researchers who study bacilli. In my view the books are complementary and are valued additions to my reference library.

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Neurobiology

Molecular Genetic Neuroscience. Papers from a meeting, Woods Hole, Mass. FRANCIS O. SCHMITT, STEPHANIE J. BIRD, and FLOYD E. BLOOM, Eds. Raven, New York, 1982, xx, 492 pp., illus. $74.

The recent meeting of the American Society for Neuroscience began with a talk on the cloning of acetylcholine receptor genes and ended with a talk on the cloning of neuroactive peptide genes from *Aplysia*. Neurobiologists who think that the trend toward molecular biology will continue should find *Molecular Genetic Neuroscience* to be interesting reading.

The book contains reports from a conference held under the auspices of the Neurosciences Research Program. The objectives of the conference were to introduce the concepts and practice of molecular biology, particularly genetic engineering, to neurobiologists and to introduce molecular biologists to the nervous system. Related manuscripts are grouped in sections, beginning with studies of nonneuronal gene expression and progressing to the application of immunological and molecular genetic techniques to the nervous system. The editors provide an introduction to each section consistent with a theme developed by Francis Schmitt in the introductory essay, that changes in gene expression may be part of the behaviorally relevant plasticity of neurons.

Overall, the quality of the papers in the book is quite high. Those in the sections on organization of DNA, control of gene expression, and application of somatic cell genetics to developmental problems are excellent summaries of research by leading laboratories in these subjects. A paper by Leroy Hood on the genetic mechanisms that generate antibody diversity describes a system that may be a paradigm for similar, but hitherto undiscovered, systems operative in the brain. The new microchemical methods that Hood describes for sequencing nanomolar amounts of protein so that the information gained can be used to synthesize oligonucleotide probes for genes encoding proteins present in minute quantities are clearly going to be widely used in neuroscience and developmental biology. An excellent paper by Richard Lerner describes another procedure of general interest to neurobiologists: the chemical synthesis of peptides using sequence information provided by DNA and the use of these peptides to raise antibodies to the native protein containing this sequence of amino acids. The most exciting results of molecular biology on neuroactive molecules are described in several papers on the structure and processing of neuropeptide precursors, as determined in large part by gene sequencing. Papers by William Hahn and François Gros and their colleagues provide an introduction to methods used to calculate the number of active genes in the nervous system and reasons for believing that the diversity of gene expression is higher in the nervous system than in other tissues. An outstanding paper by David Housman and James Gusella describes molecular genetic approaches to hereditary neural degenerative disorders, such as Huntington's disease. Finally, some cogent strategies for the application of molecular biology methods to neurobiology are offered by Hans Thoenen and Floyd Bloom.

Neurobiologists will find it well worth their while to read a judicious selection of the papers in this book, even though advances during the last year have dated some of them. Reports to appear shortly on cloning of the genes coding for nerve growth factor and the voltage-sensitive sodium channel emphasize how dramatic the impact of molecular genetics on neuroscience is likely to be. New methods using expression vector systems to isolate genes are more powerful than the classical technologies described in the book.

For neurobiologists, the book is highly recommended. Its chief defect is the lack of descriptive methodology, but "cloning cookbooks" such as *Molecular Cloning: A Laboratory Manual* (T. Maniatis, E. F. Fritsch, and J. Sambrook, Cold Spring Harbor Laboratory, 1982) are becoming available for neurobiologists who want to employ molecular genetic techniques. As an introduction to neuroscience for molecular biologists the volume is less successful. The diversity of research being pursued by neurobiologists is not well represented, and scientists interested in such material would do better to investigate the Neurosciences Study Program series or the *Annual Review of Neurobiology*.

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Ultramafic Magma

Komatiites. N. T. ARNDT and E. G. NISBET, Eds. Allen and Unwin, Boston, 1982. xviii, 526 pp., illus. $75.

Whether ultramafic melts exist was a subject of vigorous debate for more than 50 years. The debate was put to rest in the late 1960's by the definitive work of the Viljoen brothers on what were to become classic ultramafic melt occurrences in the Komati River Valley, Barberton Mountain Land. Ultramafic melts or komatiites now rank as the most exciting recent discovery in petrology, and it is not surprising that they have been the subject of many studies seeking to understand their nature and origin. Until the publication of *Komatiites*, however, there was no single work collating these studies, and there is no doubt that the book fills a hole in the geological literature. The question is, how well does it fill it?

The purchaser of *Komatiites* will get a collection of reviews of most of the ma-