

Napco[®] announces: the years-ahead incubator system that won't be matched.

The new Napco water jacketed 6000 series embodies more important benefits and features than any incubator ever marketed.

Here are some of over 15 advances in incubator design.

• More accurate control of chamber temperature.

By positioning sensors not only in the water jacket, *but also in the chamber itself*, Napco permits more precise chamber monitoring than other water jacketed incubators.

• New electronic controls, digital display.

New solid state control system reduces chamber variances, and scanning digital displays monitor chamber parameters.

• The first modular design.

All control elements can be unplugged from the chamber module for quick service.

• Unique wet-jet air flow system.

The exclusive wet-jet air flow system provides maximum chamber uniformity and assures

the highest relative humidity available in any incubator.

5. More secure chamber uniformity.

Superior new Napco door closure systems ensure integrity of inner chamber.



6. The only water jacketed CO₂ incubator you can get really clean.

Shelf standards and plenums can be easily removed for cleaning in five minutes. This leaves an empty, perfectly smooth chamber that can be swabbed for easy management of spores and contaminating organisms.



7. The best service in the industry.

If you should ever have an equipment breakdown, a *Heinicke-Napco Minute Man will be on his way to you in 48 hours.* You'll seldom need the Minute Man service because Heinicke and Napco instruments are built to work. But if you do, dial toll free 800-327-9783.

Introducing a new constant flow incubator~ the 4000 series.

The new modular Napco constant flow system embodies a unique principle that offers superior results in tissue culture and related disciplines. Each of the modular chambers has its own individual controls and separate metering system, to accommodate specific environments in each module.



National 
Appliance Company

A Heinicke Company
3000 Taft Street
Hollywood, Fl. 33021
800-327-9783 or
(305) 987-6101
Telex: 512610

Available at the following dealers:
Curtin-Matheson, Fisher Scientific Co.,
Preiser, Sargent-Welch, S.G.A. Scientific,
Scientific Products, Arthur H. Thomas Co.,
In Canada: Canlab, Fisher Scientific
Co. Ltd., Sargent-Welch of Canada Ltd.

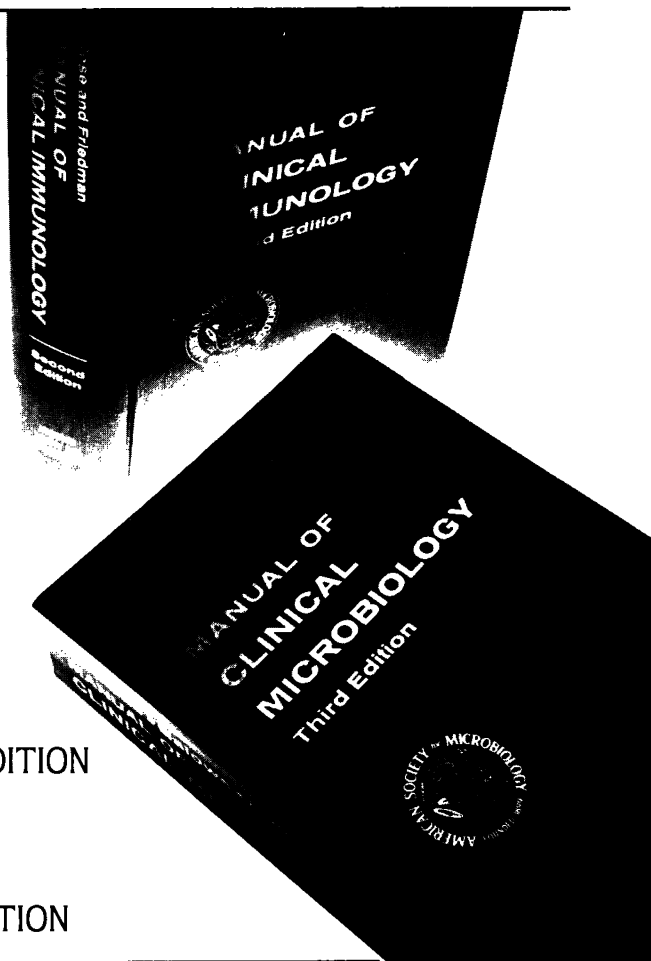
All Napco water-jacket incubators are available in three space saving models.

The world's two most widely used clinical laboratory manuals are now available in completely revised

and updated new editions:

Manual of Clinical Microbiology, 3RD EDITION

Manual of Clinical Immunology, 2ND EDITION



Manual of Clinical Microbiology, 3rd Edition

Editors: Edwin H. Lennette, Albert Balows, William J. Hausler, Jr., Joseph P. Truant

July 1980, 1,047 pages, fully illustrated, available in two bindings:

Clothbound (ISBN: 0-914826-24-7), \$25.00; (ASM Members: \$18.00)

Flexible binding (ISBN: 0-914826-26-3), \$21.00; (ASM Members: \$15.00)

Manual of Clinical Immunology, 2nd Edition

Editors: Noel R. Rose and Herman Friedman

July 1980, 1,105 pages, fully illustrated, available in two bindings:

Clothbound (ISBN: 0-914826-25-5), \$25.00; (ASM Members: \$18.00)

Flexible binding (ISBN: 0-914826-27-1), \$21.00; (ASM Members: \$15.00)

Direct all orders and inquiries to the publisher:



American Society
for Microbiology
1913 I Steet, NW
Washington, DC 20006

Please note that members of the Society must remit payment with order, and that books sold to ASM members are for personal use only. Orders from overseas must be prepaid.

On the interface of basic and applied science:

MICROBIOLOGY 1981

Editor: David Schlessinger

April 1981, 424 pages, clothbound, \$12.00 to members of ASM,
\$22.00 to others. ISBN: 0-914826-31-X

100 extended abstracts of recent conference and symposia reports bring to the scientist some of the most exciting new work in the following major areas:

REGULATORY MECHANISMS

- Regulatory Signals
- RNA Replication

GENE MOVEMENTS AND LABORATORY EVOLUTION

- Phage and Viral Site-Specific Recombination
- Molecular Genetics of Nitrogen Fixation
- Transposons as Tools in Microbial Genetics
- Molecular Evolution

INFECTIOUS DISEASES

- Newly Recognized Infectious Agents
- The Polymorphonuclear Leukocyte in Host Defense
- Candidiasis: an Infectious Disease of Increasing Importance
- Organization of Fungal Cell Surface

DIAGNOSTIC IMMUNOLOGY

GENETICS AND MOLECULAR BIOLOGY OF INDUSTRIAL MICROORGANISMS

In the words of David Schlessinger,

“New techniques make possible more powerful experiments and more powerful diagnostic techniques... science, no less than politics is the art of the possible.”

That art is amply illustrated in this new compendium of important recent research.

To order, complete the coupon, clip, and mail to:



**American Society
for Microbiology**
1913 I Street, NW
Washington, DC 20006

- I am a member of ASM. I have enclosed \$_____ for _____ copy(ies) (limit 3) of MICROBIOLOGY — 1981. Members must enclose payment.
- I am not a member of ASM. Please send me _____ copy(ies) of MICROBIOLOGY — 1981 @ \$22.00 each. I have enclosed \$_____. Send invoice.

Name _____

Address _____

City _____ State _____ Zip _____

The most recent advances in spore science —

SPORULATION and GERMINATION

EDITORS:
HILLEL LEVINSON
A. L. SONENSHEIN
DONALD J. TIPPER

Proceedings of the Eighth International Spore Conference,
Woods Hole, Massachusetts, 9-12 October 1980

This book contains two kinds of papers — review articles and research papers — and reflects the high quality of the Conference, at which advances in the applications of modern molecular genetics and biochemistry to persistent questions regarding sporulation and germination were presented.

The review articles, listed below, are authoritative, up-to-date, critical reviews of major areas written by leaders in their respective fields:

- Initiation of Bacterial Sporulation. Ernst Freese
- Biochemistry of Bacterial Forespore Development and Spore Germination. Peter Setlow
- Advances in the Genetics of *Bacillus subtilis* Differentiation. P. J. Piggot, A. Moir, and D. A. Smith
- Cloning Strategies in *Bacillus subtilis*. Paul S. Lovett
- Sigma Factors, Stage 0 Genes, and Sporulation. Richard Losick
- Toxins of Sporeforming Bacteria. Robert E. Andrews, Jr., and Lee A. Bulla, Jr.
- Biophysical Studies on the Molecular Mechanisms of Spore Heat Resistance and Dormancy. W. G. Murrell.

The research papers are refereed and reflect the most recent advances in spore science, including material in molecular genetics and gene cloning. Well-documented experiments on important and interesting topics — 52 in all — are arranged in the following six major topic areas:

- Genetics of Sporeforming Bacteria and Cloning of Sporulation Genes
- Initiation of Sporulation and Regulation of Metabolism
- Macromolecular Synthesis During Sporulation
- Dormancy, Germination, and Outgrowth
- Resistance of Spores
- Resting Forms of Microorganisms Other than *Bacillus* and *Clostridium*.

SPORULATION AND GERMINATION will be of particular interest in graduate and undergraduate departments of microbiology, university libraries, medical school libraries, and industrial laboratories, as a handy reference for all individuals involved in spore research, and as adjunct material for teaching courses that cover spore science.

ORDERING INFORMATION

Publication Date: July 1981; ISBN: 0-914826-35-2; 316 pages, clothbound, \$24.00 (\$16.00 to members of ASM, who must remit payment with order. Limit of three copies at member price.)



Published and distributed by:
American Society for Microbiology
1913 I Street, NW • Washington, DC 20006

Meeting the bacteriologist's need for a compact handbook of laboratory methods—

Manual of Methods for General Bacteriology

EDITOR-IN-CHIEF:
Philip Gerhardt

SECTION EDITORS:
Ralph N. Costilow
Noel R. Krieg
R. G. E. Murray
Eugene W. Nester
G. Briggs Phillips
Willis A. Wood

Published and distributed by:



American Society for Microbiology
1913 I Street, NW
Washington, DC 20006

This new *Manual* covers all the taxa of bacteria, and its approach is generalized for both pure and applied bacteriology. Aimed at senior undergraduate and beginning graduate science majors, at teachers and researchers, the *Manual* provides practical descriptions of laboratory procedures that are known to be reliable and that are in frequent use. It will be an invaluable tool for all involved in bacteriology work in the laboratory setting.

The book comprises six sections, each of which is self-contained, with its own table of contents to help the reader find specific methods as easily as possible. The contents are listed below.

METHODOLOGY FOR GENERAL BACTERIOLOGY

MORPHOLOGY—Light Microscopy—Specimen Preparation for Light Microscopy—Determinative Methods of Light Microscopy—Electron Microscopy—Cell Fractionation

GROWTH—Biophysical Factors in Growth—Biochemical Factors in Growth—Enrichment and Isolation—Solid Culture—Liquid Culture—Growth Measurement—Preservation

GENETICS—Gene Mutation—Gene Transfer—Plasmids

METABOLISM—Physical Methods—Chemical Composition—Enzymatic Activity—Permeability and Transport

SYSTEMATICS—General Characterization—Numerical Taxonomy—Genetic Characterization

LABORATORY SAFETY—Sterilization—Containment and Disinfection

ADDENDUM—Diluents and Biomass Measurement

ORDERING INFORMATION

Publication date: March 1981. 525 pages, fully illustrated.

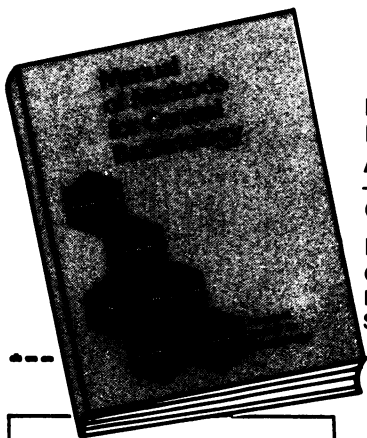
Clothbound:

Flexible binding:

ISBN: 0-914826-29-8

ISBN: 0-914826-30-1

\$25.00 (\$18.00 to Members of ASM) \$21.00 (\$15.00 to Members of ASM)



I am a member of ASM.
Send me _____ copy(ies)
(limit of 3 at member prices)

\$18.00 (Cloth);

\$15.00 (Flexible).

I have enclosed \$ _____.

Please send me _____ copy(ies) of
MANUAL OF METHODS FOR GENERAL BACTERIOLOGY
 \$25.00 (Cloth); \$21.00 (Flexible).

Send book(s) to: I have enclosed \$ _____.

Name _____

Address _____

City/State/Zip _____

The Three R's of Focusing

Rapid
Reliable
Resolving



Pharmalyte—
The Basis of Good Results.

Pharmalyte® allows the 3 R's of focusing to work for you.

RAPID: Stable gradients can be produced quickly without having to mix intervals.

RELIABLE: pH gradients across the stated interval are even, linear, and reproduced every time.

RESOLVING: Low, even conductivity across the whole gel results in high resolution; even at 3000V.

Ask for details on Pharmalyte Carrier Ampholytes, Agarose IEF, and IEF equipment for all your focusing techniques.

Pharmacia Fine Chemicals
Division of Pharmacia, Inc.
Piscataway, New Jersey 08854
Phone (201) 469-1222

 **Pharmacia**
Fine Chemicals