

Rapid centrifugal preparation

with the *Spinco* Model L

ULTRACENTRIFUGE

- VACUUM
- 162 ml – 40,000 rpm
- REFRIGERATED



FULLY-AUTOMATIC features make the Spinco Model L Preparative Ultracentrifuge operationally self-supervising. Simple speed- and time-controls are preset by operator and electronic unit brings rotor to speed, times run, and decelerates with smoothly operating automatic brake.

Various sizes and types of interchangeable rotors mount in operating chamber with instantaneous coupling. Time between runs, using pre-loaded rotors, is less than a minute. Speed and vacuum are established almost simultaneously. Acceleration time for the 40,000-rpm rotor is only four minutes.

SAFETY FEATURES include automatic overspeed cutout; interlocks to prevent running at high speeds without vacuum in chamber and prevent breaking vacuum or opening chamber while running at high speeds. Rotor chamber is encased in thick double steel guard.

UNIT IS SELF-CONTAINED, of worktable height, and requires only electric connection for installation. Spinco electric drive and gearing system are of types proved in more than 100,000 hours of actual field operation. Self-balancing feature eliminates weighing of loaded tubes. Controllable refrigeration holds rotors and contents at any temperature down to -5°C .

In operation, the Model L applies forces up to 144,000 times gravity on 162 ml of material at a maximum speed of 40,000 rpm. Individual rotor tubes have sealing caps—are available in plastic or metal. Rotors provide second vacuum seal in quickly-detachable cover with integral lifting device. Wide selection of rotors is available with largest holding 1700 ml—

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gram of bringing such material into Carlander's hands. This would be particularly true of material for which other publication is unlikely or uncertain.

It is common knowledge in other fields that through use informational source books tend to become biblical in stature. Fishery workers will do well to guard against such an eventuality by strict avoidance of the unscientific practice of unduly substituting data from Carlander for direct use of original papers. In order to avoid perpetuation of inadvertencies, which almost necessarily are a part of any compendium, it is to be hoped that originals will continue to be used faithfully in spite of the convenience of this handbook. Let the handbook be the key to the literature, but do not let it become the oracle!

Dr. Carlander deserves the continuing praise and gratitude of his colleagues in aquatic biology and fisheries. He certainly has mine.

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New Books

- Theory and Method in the Social Sciences.* Arnold M. Rose. Univ. of Minnesota Press, Minneapolis, 1954. xii + 351 pp. \$5.
- Introduction to the Chemistry of Enzymes.* Keith J. Laidler. McGraw-Hill, New York-London, 1954. ix + 208 pp. Illus. \$5.
- Introduction to Nuclear Engineering.* Raymond L. Murray. Prentice-Hall, New York, 1954. xiii + 418 pp. Illus. \$7.
- So Little for the Mind.* ed. 2. Hilda Neatby. Clarke, Irwin, Toronto, 1953. xiii + 384 pp. \$3.
- Tables of Integral Transforms.* vol. I. Based, in part, on notes left by Harry Bateman. Bateman Project Staff, A. Erdelyi, Ed. McGraw-Hill, New York-London, 1954. xx + 391 pp. \$7.50.
- Principles of Biology.* W. Gordon Whaley *et al.* Harper, New York, 1954. ix + 694 pp. Illus. \$6.
- Rocks and Mineral Deposits.* Paul Niggli; trans. by Robert L. Parker. W. H. Freeman, San Francisco, 1954. xiii + 559 pp. Illus. \$12.
- Optical Instrumentation.* George S. Monk and W. H. McCorkle, Eds. McGraw-Hill, New York-London, 1954. xxv + 262 pp. Illus. \$3.75.
- Nobel Prize Winners in Chemistry: 1901-1950.* Eduard Farber. Schuman, New York, 1953. x + 219 pp. Plates. \$5.
- Truk: Man in Paradise.* Viking Fund Publications in Anthropology, No. 20. Thomas Gladwin and Seymour B. Sarason. Wenner-Gren Fdn., New York, 1953. 651 pp. Illus. + plates. \$6.50.
- Progress in the Chemistry of Fats and Other Lipids.* vol. 2. R. T. Holman, W. O. Lunderberg, and T. Malkin, Eds. Academic Press, New York; Pergamon Press, London, 1954. 347 pp. Illus. + plates. \$9.80.
- Nobel Prize Winners in Medicine and Physiology: 1901-1950.* Lloyd G. Stevenson. Schuman, New York, 1953. ix + 291 pp. Plates. \$6.50.
- Personality Through Perception.* An experimental and clinical study. H. A. Witkin *et al.* Harper, New York, 1954. xxvi + 571 pp. Illus. \$7.50.
- The Proteins: Chemistry, Biological Activity, and Methods.* vol. II, pt. A. Hans Neurath and Kenneth Bailey, Eds. Academic Press, New York, 1954. ix + 661 pp. Illus. \$14.
- Sociology.* ed. 4. Emory S. Bogardus. Macmillan, New York, 1954. xv + 616 pp. \$5.
- Ideals of Life.* An introduction to ethics and the humanities. Millard Spencer Everett. Wiley, New York; Chapman & Hall, London, 1954. xiv + 736 pp. \$5.
- A Field Guide to the Birds of Britain and Europe.* Roger Tory Peterson, Guy Mountfort, and P. A. D. Hollom. Houghton Mifflin, Boston, 1954. xxxiv + 318 pp. Illus. + plates. \$5.
- V-2.* Walter Dornberger. Trans. by James Cleugh and Geoffrey Halliday. Viking Press, New York, 1954. xviii + 281 pp. + plates. \$5.
- Minnesota's Rocks and Waters.* A geological story. George M. Schwartz and George A. Thiel. Univ. of Minnesota Press, Minneapolis, 1954. xviii + 366 pp. Illus. \$4.
- Essays on the Social History of Science.* S. Lilley, Ed. Munksgaard, Copenhagen, 1953. 182 pp. Paper, 30 kr.
- Time Counts.* The story of the calendar. Harold Watkins. Philosophical Library, New York, 1954. vi + 274 pp. Illus. + plates. \$3.75.
- Methods of Research.* Educational, psychological, sociological. Carter V. Good and Douglas E. Scates. Appleton-Century-Crofts, New York, 1954. xx + 920 pp. \$6.
- Advances in Enzymology and Related Subjects of Biochemistry,* vol. XV. F. F. Nord, Ed. Interscience, New York-London, 1954. x + 547 pp. Illus. \$11.
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- Progress in Biophysics and Biophysical Chemistry,* vol. 4. J. A. V. Butler and J. T. Randall, Eds. Academic Press, New York; Pergamon Press, London, 1954. viii + 399 pp. Illus. + plates. \$9.50.
- Induction and Dielectric Heating.* J. Wesley Cable. Reinhold, New York, 1954. vii + 576 pp. Illus. \$12.50.
- The Microtome's Formulary and Guide.* Peter Gray. Blakiston, New York, 1954. xiii + 794 pp. Illus. \$10.50.
- Applied Atomic Energy.* K. Fearnside, E. W. Jones, and E. N. Shaw. Philosophical Library, New York, 1954. viii + 156 pp. Illus. + plates. \$4.75.
- Heat Conduction.* With engineering, geological, and other applications. Leonard R. Ingersoll, Otto J. Zobel, and Alfred C. Ingersoll. Univ. of Wisconsin Press, Madison, rev. ed., 1954. xiii + 325 pp. Illus. \$5.
- Method and Perspective in Anthropology.* Papers in honor of Wilson D. Wallis. Robert F. Spencer, Ed. Univ. of Minnesota Press, Minneapolis, 1954. xii + 323 pp. \$4.50.
- Plant Life in Malaya.* R. E. Holttum. Longmans, Green, London-New York, 1954. viii + 254 pp. Illus. \$3.
- Die Entwicklung und Morphologie des Chondrokraniums von Myotis Kaup.* Hans Frick. Georg Thieme, Stuttgart; Intercontinental Medical Books, New York, 1954. 102 pp. Illus. Paper, \$3.45.
- An Introduction to Bacterial Physiology.* Evelyn L. Ogin-sky and Wayne W. Umbreit. Freeman, San Francisco, 1954. xi + 404 pp. Illus. Text, \$6; trade, \$7.25.
- Human Development.* John P. Zubek and P. A. Solberg. McGraw-Hill, New York-London, 1954. vii + 476 pp. Illus. \$6.
- Psychological Testing.* Anne Anastasi. Macmillan, New York, 1954. xiii + 682 pp. Illus. \$6.75.
- Nuclear Theory.* Robert G. Sachs. Addison-Wesley, Cambridge, Mass., 1953. xi + 383 pp. Illus. \$7.50.

Miscellaneous Publications

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- Research Directory.** Case Inst. of Technology, Cleveland, 1954. 50 pp.
- Marine Sciences Programs in the South.** Preliminary report. Nelson Marshall, Ed. Southern Regional Education Bd., Atlanta, Ga., 1954. 103 pp. Illus.
- A Study of Populations of the Anchoveta, Cetengraulis mysticetus, Based on Meristic Characters.** Inter-American Tropical Tuna Commission Bull., vol. 1, No. 1. Gerald V. Howard. 24 pp. Illus. **Some Aspects of the Dynamics of Populations Important to the Management of the Commercial Marine Fisheries.** vol. 1, No. 2. Milner B. Schaefer. 30 pp. Illus. Inter-American Tropical Tuna Commission, La Jolla, Calif., 1954.
- Research at ALCOA.** Aluminum Co. of America, Pittsburgh 19, 1954. 54 pp. Illus.
- Contributions to the Study of Planetary Atmospheric Circulations.** Geophysical Res. Paper No. 24. Robert M. White, Ed. 1953. 141 pp. Illus.
- The Vertical Distribution of Mie Particles in the Troposphere.** Geophysical Res. Papers, No. 25. R. Penndorf. 1954. 12 pp. Illus. Air Force Cambridge Res. Center, Cambridge, Mass.
- Symposium on Protein Metabolism.** Proc. of the Nutrition Symposium held at the Univ. of Toronto, 30 Oct. 1953. Nutrition Symposium Ser., No. 8. National Vitamin Foundation, New York 22, 1954. 107 pp. Illus. \$1.50.
- California Sexual Deviation Research, Final Report.** vol. 20, No. 1. Assembly of the State of Calif., Sacramento, 1954. 160 pp.
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- Genus Ianthina.** A monograph. Dana-Rpt. No. 38. Dan Laursen. 40 pp. Illus.+plate. 10s. **Paralepididae I (Paralepis and Lestidium).** Dana-Rpt. No. 40. Vilh. Ege. 184 pp. Illus. £2. Carlsberg Foundation, Copenhagen, 1953.
- Absolute Magnitudes of the B Stars Determined from Measured Intensities of the H γ Line.** vol. IX, No. 8. R. M. Petrie. 17 pp. Illus.+plate. **Hydrogen Absorption Lines in the Spectra of B-Type Stars.** vol. IX, No. 9. Jean K. McDonald. 26 pp. Illus.+plate. 25¢. **Wave-Length Standards for Radial-Velocity Determinations from B-Type Spectra.** vol. IX, No. 10. R. M. Petrie. 24 pp. Illus.+plate. Dominion Astrophysical Observatory, Victoria, B.C., Canada, 1953.
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- Understanding Other Cultures.** William A. Parker, Ed. American Council of Learned Societies, Washington 6, 1954. 91 pp.
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- Strahlenschutz und Sonstiger Arbeitsschutz bei der Medizinischen Anwendung von Röntgenstrahlen.** Wilhelm Ernst. Georg Thieme, Stuttgart, Germany, 1953. 97 pp. Illus. DM 7.80.
- On Sirpus, a Genus of Pigmy Cancroid Crabs.** Zoology, vol. 2, No. 3. Isabella Gordon. British Museum (Natural History), London, 1953. 22 pp. Illus. 6s.
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- Natural Man.** Doubleday Papers in Psychology. No. 1. Clarence Leuba. 70 pp. 95¢. **Historical Roots of Learning Theory.** Doubleday Papers in Psychology No. 2. Horace B. English. 21 pp. Illus. 65¢. **Feelings and Emotions.** Doubleday Papers in Psychology No. 3. Lawrence K. Frank. 38 pp. 85¢. Doubleday, Garden City, N.Y., 1954.
- Essays on Gravity.** Five winning essays of the annual award (1949-1953). Gravity Research Foundation, New Boston, N. H. 34 pp.
- Properties of Feldspars and Their Use in Whitewares.** Bull. No. 422. Joseph C. Kyonka and Ralph L. Cook. 34 pp. Illus. 60¢. **Engineering Properties of Chicago Subsoils.** Bull. No. 423. Ralph B. Peck and William C. Reed. 62 pp. Illus. \$1. Engineering Expt. Sta., Univ. of Illinois, Urbana, 1954.
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- Southern Maryland—A Tobacco Economy.** Studies in Business and Economics, vol. 7, No. 4. Univ. of Maryland, College Park, 1954. 32 pp. Illus.
- Prinzzahlen.** Elemente der Mathematik vom Höheren Standpunkt Aus. vol. 2. Ernst Trost. Birkhäuser, Basel, Switzerland, 1953. 95 pp. Fr. 13.50.