familiar introduction, one finds the piezoöptic and elastoöptic constants, followed by the three electroöptic constants. Explanations of the symbols are consistently given in the introductions, always complete and always succinct.

Clearly, the book is suitable neither for browsing nor for textbook use. On the other hand, any library associated with a solid-state research effort cannot do without it.

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Shedding light on the subject

LUMINESCENCE: L'ELECTRON ET LA LUMIERE, MATIERE ET PHOTOLUMINESCENCE. By G. Monod-Herzen. 277 pp. Dunod, Paris, 1966. Paper 39 F.

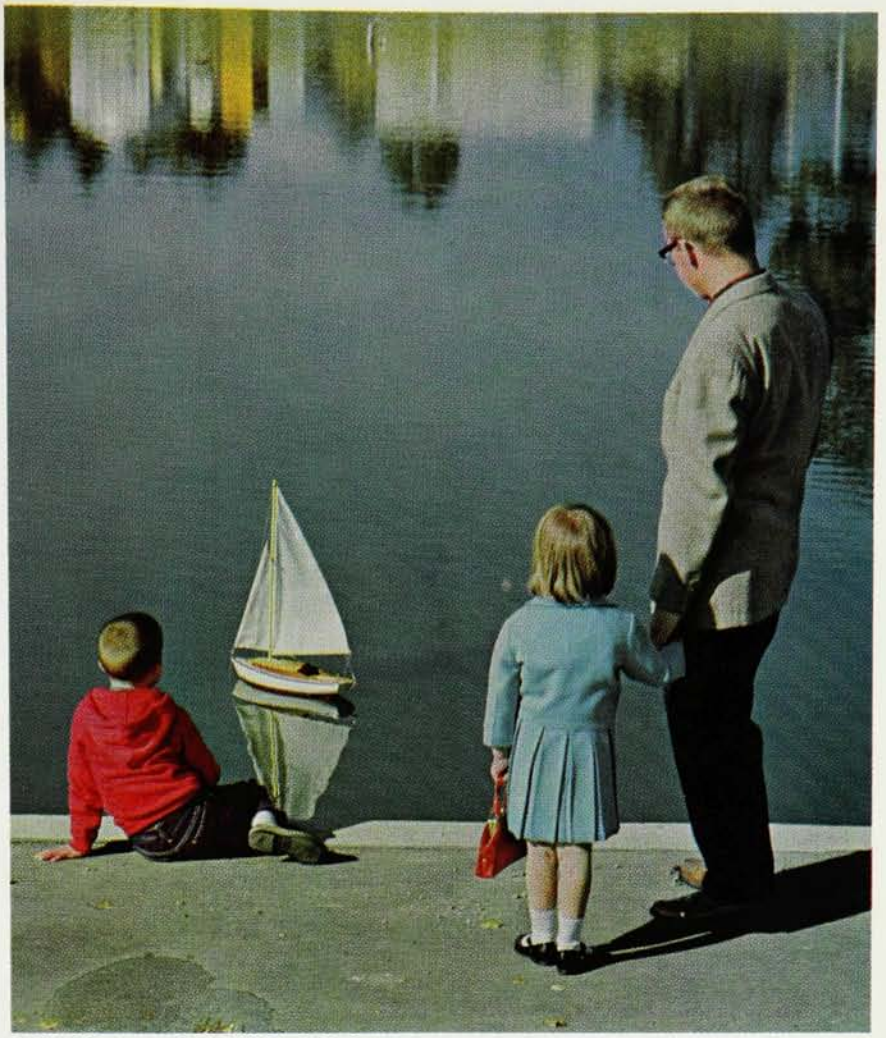
by L. Marton

It is a pleasure to report on an excellent book. In fact, the book is so readable that I would like to recommend its translation into English.

As its title indicates, the book is divided into two parts. The first part is entitled "The Electron and Light," and the second part is "Matter and Photoluminescence." The first part is divided into three chapters: "The Free Electron and Light," "The Bound Electron and Light" and "Notions of Spectroscopy." The second part is divided equally into several chapters: "Elements of Luminescence"; "Atomic Luminescences"; "Molecular Luminescences" "Crystalline Luminescences."

The first chapter is one of the most lucid discussions of the nature of the electron I have seen for a long time. For instance, the description and discussion of the energy of the electron not only describes very neatly the existing models, but it gives a very timely warning to the reader on how to avoid misinterpretations of these models. The treatment is of the kind that I would like to recommend very warmly, not only to students for self use, but also for their teachers in presenting this type of material.

Generally speaking, the presentation



LASL Photograph by Bill Jack Rodgers

is more on the theoretical than the experimental side. It is neither pure theory, nor pure experiment, but in a rather concise way limits itself to the background of a number of approximate models used in the interpretation of luminescent phenomena. This background is more often theoretical, but not always. The models used represent the present state of knowledge and can be helpful to the advanced research worker as well as the student interested in the field.

Even the best book can be criticized and this isn't without its shortcomings either. The greatest shortcoming, as far as I see, is the lack of an index. If there is a second edition or a translation, I would like to recommend very warmly the addition of an index.

The second shortcoming is the parsimony of the references. I don't mean to say that there are no references at all. There are a few, but they aren't enough for the graduate student who really wishes to obtain a good knowledge of the subject. Many more references would be useful.

One more remark. I wouldn't like to list this last one as a shortcoming of the book. I am rather inclined to be amused by it. The current wave of nationalism in science doesn't leave this book without its mark. Wherever possible, the French scientist and French science is extolled. The most characteristic indication is the use of two names hyphenated. For instance, the Cerenkov effect becomes the Mallet-Cerenkov effect. The author speaks of Becquerel-Lenard phosphorescence and a number of similar examples can be given where always the French one precedes the foreign name. This is not very important—in fact, it may help to make the American student aware of the role of French science in developing some of these areas.

The book is paperbound, with excellent typography and very good figures.

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L. Marton is chief of international relations at the National Bureau of Standards.

NEW BOOKS

ELEMENTARY PARTICLES & FIELDS

Mathematical Theory of Elementary Particles. Conf. proc. (Dedham, Mass., Sept. 1965). R. Goodman, I. Segal, eds. 188 pp. MIT Press, Cambridge, Mass., 1966. $6.00

Cosmic Ray Physics. Two volumes. Conf. proc. (Apatity, USSR, Aug. 1964) Trans. of Bull. Acad. Sci. USSR 29, no. 9, no. 10. Columbia Technical Translations, White Plains, N. Y., 1965. Each $25.00

NUCLEI

Isobaric Spin in Nuclear Physics. Conf. proc. (Tallahassee, Fla., March 1966). J. D. Fox, D. Robson, eds. 896 pp. Academic Press, New York, 1966. $9.00

Annual Review of Nuclear Science, 1966. Vol. 16. E. Segrè, ed. 671 pp. Annual Reviews, Palo Alto, Calif., 1966. $8.50

Optimal Shutdown Control of Nuclear Reactors. By M. Ash. 169 pp. Academic Press, New York, 1966. $8.50

ATOMS & MOLECULES

Physical Optics. Proc. (Trudy), P.N. Lebedev Physics Institute. Vol. 30. D. V. Skobel'tsyn, ed. Trans. from Russian. 270 pp. Consultants Bureau, New York, 1966. Paper $27.50

Kernmagnetische Resonanz. Einführung in die theoretischen Grundlagen. By H. Sillescu. 136 pp. Springer-Verlag, Berlin, 1966. DM 32.

FLUIDS, PLASMAS

Physique des Plasmas. Vol. 2. By J. L. Delcroix. 203 pp. Dunod, Paris, 1966. 25 F.

Nichtstationäre Probleme der Gasdynamik. By R. Sauer. 195 pp. Springer-Verlag, Berlin, 1966. DM 36.

The Pumping of Liquids. By F. A. Holland, F. S. Chapman. 406 pp. Reinhold, New York, 1966. $20.00

SOLIDS

Phonons: In Perfect Lattices and in Lattices with Point Imperfections, (Scottish Universities' Summer School, 1965). R. W. H. Stevenson, ed. 448 pp. Plenum Press, New York, 1966. $22.50

Spin-Lattice Relaxation in Ionic Solids. (Reprint collection). A. A. Manenkov, R. Orbach, eds. 453 pp. Harper & Row, New York, 1966. Paper $5.00

CLASSICAL PHYSICS

Ocean Acoustics. Theory and Experiment in Underwater Sound. By I. Tolstoy, C. S. Clay. 293 pp. McGraw-Hill, New York, 1966. $15.50

Field Analysis: Experimental and Computational Methods. D. Vitkovitch, ed. 503 pp. Van Nostrand, Princeton, N. J., 1966. $18.50

MATHEMATICS & MATHEMATICAL PHYSICS

The Mathematical Apparatus for Quantum Theories. By O. M. Nikodym. 952 pp. Springer-Verlag, New York, 1966. $36.00

Lie Groups for Pedestrians. (Second ed.) By H. J. Lipkin. 182 pp. Interscience, New York, 1966. $6.50

A Deductive Theory of Space and Time. By S. A. Basri. 163 pp. Interscience, New York, 1966. $7.00

INSTRUMENTATION & TECHNIQUES

Physical Laboratory Handbook. By E. V. Angerer, H. Ebert . Trans. from German by W. Summer. 610 pp. Van Nostrand, Princeton, N. J., 1966. $13.50

X-Ray Diffraction Methods. By E. W. Nuffield. 409 pp. Wiley, New York, 1966. $12.50

Radar Techniques for Detection, Tracking and Navigation. Conf. proc. (London, Sept. 1964). W. T. Blackband, ed. 615 pp. Gordon and Breach, New York, 1966. $37.50

Radio Telescopes. Proc. (Trudy), P. N. Lebedev Physics Institute. Vol. 28. D. V. Skobel'tsyn, ed. Trans. from Russian. 270 pp. Consultants Bureau, New York, 1966. Paper $22.50

Reticles in Electro-Optical Devices. By L. M. Biberman. 177 pp. Pergamon Press, New York, 1966. $7.00

COMPILATIONS

Landolt-Börnstein, Numerical Data and Functional Relationships in Science and Technology. New Series, Group 2, Vol. 2: Magnetic Properties of Coördination and Organo-Metallic Transition Metal Compounds. By E. König. 578 pp. Springer-Verlag, Berlin, 1966. DM 232.

Directory of Nuclear Reactors. Vol. 6, Research, Test and Experimental Reactors. 238 pp. IAEA, Vienna, 1966 (Available from International Publications, Inc., New York.) $7.00

Russian-English Dictionary and Reader in the Cybernetical Sciences. By S. Kotz.