and can be carried out at considerably less cost than making the photographic copy direct from the journal. The positive copies thus made would be sent to those requesting them, and the master negative returned to its proper pocket in the folder in which it is kept.

In the above brief outline of the general organization of a Filmothec Service, it has not been possible to go into detail in regard to the several mechanical operations. The experience so far gained, however, with microfilm cameras shows that no serious difficulties may be expected. It is simply a question of the systematic organization of the work and the application of ordinary ingenuity in perfecting systems of identification markings for the film strips and properly constructed folders for filing and preserving the master negatives.

The technical directions necessary and the cost of making the original microfilms by directly photographing the periodicals should not greatly exceed the cost of preparing the card catalogues of original papers which would be necessary as the basis for the preparation of catalogues of scientific literature. The cost of making positive copies from negative microfilm strips is certainly far less than making microfilm copies directly from the journals.

This plan also has the advantage that complete filmothecs of scientific literature would be gradually built up, and with succeeding years, there would be a greatly increased amount of literature of which positive copies of desired papers could be supplied at an exceedingly low cost.

The one objection which may be offered is that no one library receives all the journals which must be consulted in the preparation of complete catalogues of titles of papers in a given field of science. Although this is true, there has developed such a spirit of cooperation between American libraries that by choosing two or three of the most important, and setting up microfilm cameras in these, the few journals which would still be necessary could probably be secured by loan or by purchase. Furthermore, this is a plan which lends itself especially well to making collections and disseminating literature for the benefit of research workers in very restricted branches of science. There are, for example, certain very special journals which, in addition to publishing original articles in their fields, also furnish abstracts of papers published elsewhere. This is, of course, a distinct service, but certainly of considerably less value than would be the providing to their subscribers of microfilm copies of the original articles chosen for abstracting.

It is evident that the suggested plan of using microfilms for the dissemination of scientific literature is capable of first being tested on a very limited scale, and if its value is demonstrated by such experience, may be expanded as rapidly as the results justify. It offers possibilities which are worthy of serious consideration by those concerned with the more perfect utilization of scientific literature.

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MICRO-PHOTOGRAPHY OR PHOTO-MICROGRAPHY?

RECENT issues of SCIENCE have brought suggestions on scientific nomenclature and the use of English. In this connection I would suggest for relegation to oblivion that horrible hybrid "photo-micrography." I have never been able to see the reason for coining this cacophonous misnomer—surely the term micro-photography is descriptive enough. One shudders to think what would happen if the precedent set by photo-micrography were followed consistently: we should then have to drop color photography and celestial photography in favor of photo-chromography and photo-uranography. If we sanction photo-micrography astronomers will be at a loss to know whether chronograph refers to an instrument used in measuring time or to a picture of Saturn, and we may, perhaps, look forward to the day when the studio photographer who specializes in portraits will announce himself as an expert in photo-prosopography.

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A VASOPRESSOR LOCAL ANESTHETIC

DR. RAYMOND L. OSBORNE and his associates are to be congratulated for the successful synthesis of a vasopressor local anesthetic, as described in SCIENCE, (85: 105, January 22, 1937). A brief historical account is included in the report. The reasons are given for attempting the synthesis of a chemical agent which combines the local anesthetic actions of the alkamine esters of para-amino benzoic acid with the vasoconstrictor effects of the phenylethylamines. Since the report does not refer to any other attempts to synthesize such a compound, it gives the impression to the uninformed that it is the first report on this matter to appear in scientific literature. This is unfortunate. Other efforts, more or less successful, of this same sort have been made by Kubota,[1] Takeda,[2] Hartung, Munch and Kester,[3] and in a particularly exhaustive manner by Alles and Knoefel.[4] The latter discuss 29 compounds of this type which were deliberately prepared

[1] Kubota, *Jour. Pharm. and Exp. Ther.*, 12: 361, 1919.
[2] Takeda, *Jour. Pharm. Soc. Japan*, No. 426, 691, 1917, through *Chem. Abs.*, 11: 3241, 1917.
[3] Hartung, Munch and Kester, *Jour. Amer. Chem. Soc.*, 54: 1526, 1932.
[4] Alles and Knoefel, *Arch. Internat. Pharmacody. Ther.*, 47: 96, 1934.

to accomplish the purposes described by Osborne. These drugs were studied in a thorough way in order to determine which of the group would be most satisfactory for clinical trial. One of these vasopressor local anesthetics of Alles and Knoefel, β-benzoyloxy-β-phenyl-ethyl-demethylamine hydrochloride, came to clinical use and was reported upon by E. W. Ferber.[5] The purpose of this present note is not to detract from the merit of the report of Dr. Osborne and his associates. It does seem, however, that his statement in SCIENCE would have given a more correct impression had it referred to previous work of the same character.

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THE ACTION OF ESERINE AND ITS ANALOGUES ON SKELETON MUSCLE

IN SCIENCE for December 18, 1936, p. 551, Morison and Rosenblueth deal with the cause of their earlier failure (Rosenblueth, Lindsley and Morison)[1] to detect the potentiating effect of eserine and its analogues on the response of a mammalian muscle to a motor nerve volley. Brown, Dale and Feldberg[2] had suggested that the anesthetic might have been responsible for the absence of this action in Rosenblueth, Lindsley and Morison's experiments; but Morison and Rosenblueth have now found that the length of the interval between successive motor nerve volleys is a much more important factor. This observation we had made ourselves even before the paper by Brown, Dale and Feldberg was published, and we have dealt fully with the point in a paper which has for some months been awaiting publication in the *Journal of Physiology*. A preliminary account of the observation had, indeed, already been given by one of us (Z. M. B.) in a review published as long ago as October 11, 1936, in *Liége Médical*.[3] The journal in question has probably not a wide currency, and we welcome the note by Morison and Rosenblueth, as showing that they had independently confirmed our observation.

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SCIENTIFIC BOOKS

RECENT PHYSICS

The Renaissance of Physics. By KARL K. DARROW, pp. 306, $3.00. The Macmillan Company, 1936.

THE author of this volume is no stranger to the world of physics. Eight or ten years ago a stream of luminous essays poured forth from the Bell Telephone Laboratories under the title of "Some Contemporary Advances in Physics." These immensely helpful papers, directed mainly to his professional colleagues, disclosed not only a remarkable grasp of the various fields of recent physics but also a rare mastery of the art of exposition.

The present volume, however, is the outgrowth of a series of Lowell Lectures, greatly amplified but still addressed to the intelligent reader whether with or without laboratory experience. It is indeed one of those rare messages which contain much for the beginner and much for the expert, reminding one, in this respect, of Maxwell's "Matter and Motion" and Tait's "Recent Advances in Physical Science."

If the merits of a volume are to be appraised upon the matter which is chosen for discussion, upon the worthiness of the treatment and upon the tenacity with which it holds the interest of the reader, Dr. Darrow's "Renaissance of Physics" must take high rank. For the task undertaken is the explanation, in words of one syllable, of the rapid evolution of physics during the last fifty years; but this is to be done by building upon foundations already firmly established; and there is to be no discontinuity with the classical physics. "The continuity of thought," he says, "the partial adequacy of old ideas to new discoveries—these have outrun anything which the physicists of the past could reasonably have foreseen." The entire discussion is based upon the solid ground of mechanics, heat and waves. The spirit of the author is well exemplified at the very outset by the manner in which he wisely detours the definition of physics, with all its metaphysical quagmires, and, in its stead, defines a physicist as "some one who uses his senses for observing; mechanical and thermal instruments for measuring; and mathematics, especially the mathematics developed in the service of physics, for reasoning. I say nothing about a limitation of the subjects of his inquiry; there is none—he is authorized to use his methods and his mathematics on anything whatsoever."

The second and third chapters lead up through Gilbert Faraday, Hittorf, Crookes and Edison to J. J. Thomson and "the release of electrons from matter . . . an event . . . of transcendent importance." Here again I quote a thoroughly pragmatic definition to illustrate the beautiful accuracy with which the author fits his language to his purpose. "May we say," he

[5] Ferber, *Jour. Amer. Dental Assoc.*, 23: 788, 1936.
[1] A. Rosenblueth, D. B. Lindsley and R. S. Morison, *Amer. Jour. Physiol.*, 115: 53, 1936.
[2] G. L. Brown, H. H. Dale and W. Feldberg, *Jour. Physiol.*, 87: 394, 1936.
[3] Z. M. Bacq, *Liége méd.*, No. 41, p. 1173, Oct. 11, 1936.