viduals in the brewing trades requiring the as one hundred guinea-pigs, kept under the character as a model handbook in its line.

DYNAMO, MOTOR, AND SWITCHBOARD CIR-CUITS FOR ELECTRICAL ENGINEERS. By William Rushton Bowker. Second Edition. New York: D. Van Nos- LA trand & Co., 1908. 8vo.; pp. 168; 130 figures. Price, \$2.50.

The special object of this book is to present the subjects indicated by the title in a non mathematical way, and as viewed from the practical standpoint. The author originally production of precious stones is one of the mathematical way, and as viewed from the had in view the needs of the student preparing for the City and Guilds of London examinations form to present a general review of the in electrical engineering, and for this reason manufacture of gems artificially. Mr. Boyer the work covers certain important sections of gives an historical résumé and discusses in the Syllabus of the Ordinary and Honor Grades. detail the processes of Verneuil, Paquier, Paris, B However, this would make it no less valuable Moissan, and Hannay. The little book gives to the American student and practical en- one a fairly good popular idea of the work gineer. In the present second edition two new which is being done in a comparatively new sections have been added to furnish information field of physical chemistry. in regard to central-station layouts. This renders the book particularly useful to central- HYDRAULIC TABLES. Second edition, restation engineers and their assistants.

ELEKTRISCHE UHREN. Von Dr. A. Tobler, Dozent am Eidg. Polytechnikum in Zürich. Zweite Auflage, bearbeitet von Johannes Zacharias, Ingenieur, Mit 120 Abbildungen.

Zacharias' "Electrical Clocks," the technique lished. that a new edition seemed necessary. Wall of the authors is given, and a table of disaccuracy is demanded, are now electrically to requests from users of the former edition. B driven. In order that the art might be fully covered it was necessary to omit electrical firm alarm apparatus which found a place in the first edition. In this volume, therefore, only electrical timepieces are described. In attacking the subject, the author has described first, electrical installations which are necessary to drive a clock train. He then passes to time telegraphs, recording apparatus, and finally discusses important inventions which have made their appearance in the last thirty years. Inasmuch as the data here presented have been collected largely as a result of personal intercourse with manufacturers, engineers and scientists, the book may be taken divides itself into two parts. One devoted to as an authoritative presentation of an interesting technical subject.

PRACTICAL CONCRETE BLOCK MAKING. By

The author, though obviously somewhat prejudiced in favor of the concrete block from his years of successful experience in its manufacture, tells a convincing story going to show that much of the criticism applied to the block should more properly belong to the careless maker or the inadequate machine. The book is well written in clear, simple language, without any chemical or engineering formulæ, and explaining every technical term, so that any workman starting in the business for himself can understand every step of the operation of making good substantial concrete blocks. The author tells how to select molds and main terials, how to find the right proportions of cement and aggregate, how to mix, make, and cure, and how to place the bricks in the wall, giving various methods of facing and practical hints on how to secure the best archi-

THE PROBLEM OF AGE, GROWTH, AND ву New York: G. P. Putnam's Sons, 1908. 280 pp.; 8vo.; ill. Price, \$2.50.

biological problems, it is, as the author points out, essentially a study of a single phenomenon, the increase in the amount of protoplasm. The increase to be considered is not that dis The increase to be considered is not that distributed through the system of the growing organism, but that which occurs within the limits of a single cell. The ultimate object of all biology being the discovery of the nature of life, the author considered that the most promising opportunities for the attack of the problem lay in the study of observable changes affected by age in organisms, senescence being a qualification of living matter having no apparent parallel in the inorganic. It is an essential feature of life and therefore a useful guide to the proper aim of biology. If genius is properly defined as "an infinite capacity for taking pains" Mr. Minot's study may certainly be described as a work of genius. He explains the limitations under strictions and the stributed through the growing such as a work of genius. He explains the limitations under stributed through the growing such as a work of genius. He explains the limitations under stributed through the growing substant which capacity for taking pains" Mr. Minot's study may certainly be described as a work of genius. He explains the limitations under stributed through the growing support and lock therefor, J. C. Caldwell 920,366 Adjustable wrench, O. C. Caldwell 920,366

fully was the work done, that the first edition which he has labored, the great number of was exhausted in a year, and the second interesting by-paths revealed as he started larger one in a few years more. The present along his chosen road which his other occuthird edition includes the improvements in pation prevented his following, and does not brewing and malthouse operations due to the at all claim his book to be a complete treatise recent developments of electrical machinery, on the subject, but so far as it goes and and gives a new chapter on electricity and within the limits indicated by the title the magnetism. A new chapter is also included work is admirably thorough. For a number to cover recent botanical studies of barley, of reasons convincingly explained by the auand the chapters on Mechanics and Power are thor but too long to be quoted, the guinea-pig rewritten. while only the tables have been was selected as the most convenient organism retained from the chapters on Arithmetic and in which to study growth as a function of Algebra. The printing and general appear- age typical of its phenomena in any other ance have been much improved by division organism, and some idea of the painstaking of the work into two volumes on better paper, nature of the study will be obtained from the division being so arranged that few indivolume as a pocket companion will not find most carefully co-ordinated conditions, were all they need, each for his particular specialty, personally examined twice every day. The in one volume. Of the allied processes dis- results obtained are by no means confined to cussed, refrigeration is better treated than in guinea-pigs, the evidence obtained from them any pocket book we know of the same scope, being compared with changes in the higher and in a general way the work retains its animals including man. The language is clear and to the point and free as far as possible from Greek and Latin scientific terms, making it as interesting to the layman as to the i biological student.

> SYNTHESE DES PIERRES PRECIEUSES. Par Jacques Boyer. Paris: Gauthier-Villars, Imprimeur Librairie du Villars, Imprimeur Librairie du Bureau des Longitudes de l'Ecole Polytechnique, 1909.

first attempts which we have seen in book

vised and enlarged. New York: John Wiley & Sons, 1909. 104 pp.; 8vo. Price, \$1.50.

This new edition contains little alteration beyond correction of errors discovered in the first edition and could hardly contain any improvement, being already well known as the Since the publication of the first edition of most complete set of hydraulic tables pub-An interesting explanation of the

> AUTOMATIC SCREW MACHINES AND THEIR B Tools. By C. L. Goodrich, Screw Machine Expert Pratt & Whitney Company, and F. A. Stanley, Asso-Editor of the American Machinist. New York: Hill Publishing Company, 505 Pearl Street; 6 Bouverie Street, London, E. C. American Machinist, The Engineering and Mining Journal, Power and The Engineer. Octavo; pp. 255; 11-lustrated. Price, \$2 net.

The subject matter of this book naturally various types of machines and their construction, general tool equipments, methods of camming, etc., and the other to tools in detail In. and containing specific information on making Co Charles Palliser. New York: Industrial Publishing Company, 1908.
75 pp.; 12mo.; fully ill. Price, 50 ticulars which will be of service to mechanics interested in screw machine work. In the chapters on camming, the book illustrates and describes in detail the different makes of auto- C matic screw machines and turret lathes, including single-spindle, double and multiple spinof machines for finishing castings, forging, etc., C ning machines, magazine feed, and other types with full tables of speeds and feeds for different kinds of stock and for all classes of C cutting tools.

INDEX OF INVENTIONS

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[See note at end of list about copies of these patents.] Whereas this book deals with a series of dological problems, it is, as the author points it, essentially a study of a single phenoment, the increase in the amount of protoplasm he increase to be considered is not that distibuted through the system of the growing

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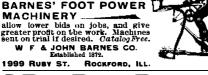
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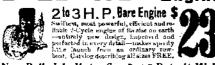
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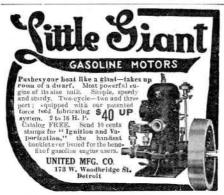
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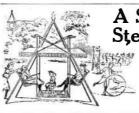
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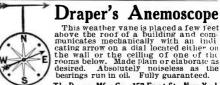
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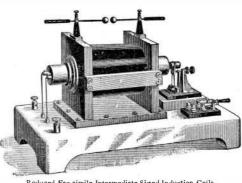
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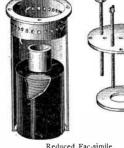
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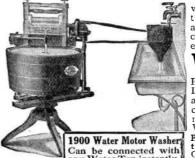
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