

devoted to liquid air. There seems to be no immediate prospect of this becoming a serious competitor of ice.

**INDICATOR DIAGRAMS.** A Treatise on the Use of the Indicator and its Application to the Steam Engine. By W. W. F. Pullen. Manchester, England: Scientific Publishing Company. 1890. Price \$2.40.

There are already a large number of books upon the indicator, but there always seems to be a genuine opportunity for a new and helpful contribution to the literature of this subject. The author gives the result of his experience and the large number of illustrations and reproductions of the diagrams will assist those who may be unfamiliar with the use of the indicator, to obtain a very competent knowledge of the subject.

**KANT AND SPENCER.** By Dr. Paul Carus. Chicago: Open Court Publishing Company. 1899. 16mo. Pp. 105. Price 20 cents.

Kant will ever have an important place in the history of modern philosophy, and the keynote of his success is thoroughness, holding that all philosophy must be based upon facts. Mr. Spencer on the contrary has been, according to Dr. Carus, deficient in thoroughness and earnestness.

**VOLUMETRIC ANALYSIS.** By John B. Coppock, T. C. S. London: Whittaker & Company. New York: The Macmillan Company. 16mo. Pp. 92. Price 50 cents.

This is specially adapted to the requirements of students entering the science and art courses in England, but the book will prove useful to American readers notwithstanding this drawback. It is one of the best and simplest treatises we have ever seen on the subject.

**FERRIC AND HELIOGRAPHIC PROCESSES.** A Handbook for Photographers, Draftsmen and Sun Printers. By George E. Brown, T. I. C. London: Dawborn & Ward, Limited. 1900. 16mo. Pp. 130. Price 80 cents.

This is a most valuable book in which are given examples of the work which can be turned out by various processes, including full directions for doing the same. A thoroughly practical book on this subject has been needed for some time.

**GEOLOGICAL SURVEY OF CANADA.** Annual Report. New Series. Vol. IX. 1897. Large 8vo. Pp. 1046, accompanied by 8 maps and 12 plates. Price 80 cents.

The portly volume before us gives an excellent idea of the work which is being done by the Geological Survey of Canada under the direction of G. M. Dawson, LL.D., F.R.S. The reports are fully illustrated and will prove of value to all who are interested in the wonderful mineral resources of Canada.

**THE SOUL OF MAN.** An Investigation of the Facts of Physiological and Experimental Psychology. By Dr. Paul Carus. Chicago: Open Court Publishing Company. 1900. 12mo. Pp. 482, 182 illustrations. Price 75 cents.

This is the second edition of an important book which is published in inexpensive form. The writings of Dr. Carus are well known.

**THE SIXTH ANNUAL REPORT OF THE COMMISSIONER OF PUBLIC ROADS OF THE STATE OF NEW JERSEY.** By Henry I. Budd, State Commissioner, Trenton, N. J. 1899. 8vo. Pp. 237.

The public roads of the State of New Jersey, together with those of Maryland, are in many ways the model roads of the United States, and the improvements which are constantly being made are most remarkable. The book is filled with valuable matter, many of the illustrations showing the roads before and after improvements were made. The figures, etc., which are given will prove of value to all those who are interested in good roads.

**MAN AND THE COSMIC PRINCIPLE.** By C. A. Bowsher. Champaign, Ill. 1899. 16mo. Pp. 155. Illustrated.

**METEOROLOGICAL OBSERVATIONS MADE AT THE ADELAIDE OBSERVATORY AND OTHER PLACES IN SOUTH AUSTRALIA AND THE NORTHERN TERRITORY DURING THE YEAR 1896 UNDER THE DIRECTION OF CHARLES TODD.** Adelaide. 1899. Quarto. Pp. 176, maps.

**ELECTRIC WIRING.** By Cecil P. Poole. New York: Power Publishing Company. 1900. 18mo. Pp. 101. Flexible leather. Price \$1.

This book represents an honest effort upon the part of the author to explain the computations of wiring to the uninitiated, and to present in shape for convenient reference tables and formulas for the use of engineers, including wiring tables for alternating current motors and tables showing the corrected drop in conductive circuits. The author has succeeded admirably in his efforts and the book will certainly be at the right hand of all those who have to work out the difficult problems of electrical wiring problems, which are increasing every year.

**OFFICIAL PROCEEDINGS OF THE INTERNATIONAL COMMERCIAL CONGRESS.** A Conference of all Nations for the Extension of Commercial Intercourse, held under the Auspices of the Philadelphia Commercial Museum in the City of Philadelphia. Philadelphia: Commercial Museum. 1899. Quarto. Pp. 442. Price \$2.

As is well known, the International Commercial Congress was held in connection with the National Export Exposition, which was held in Philadelphia from October 12 to November 1, 1899. The volume before us is prob-

ably the most valuable reference book relative to our export trade which has ever been issued, giving as it does views of a vast number of delegates from thirty-eight foreign governments.

**PRACTICAL STAIRCASE JOINERY.** Edited by Paul N. Hasluck. New York: Cassell & Company. 1900. 16mo. Pp. 160. 180 illustrations. Price \$1.

The editor has performed his task in a creditable manner, and it is one of the best and most easily understood books which we have seen on the subject. Stair building is not such a very intricate subject if the principles which underlie it are properly understood.

**THE FILTRATION OF PUBLIC WATER SUPPLIES.** By Allen Hazen. New York: John Wiley & Sons. 8vo. Pp. 321. Price \$3.

There is no subject at present confronting the water-supply engineer more important than filtration, and the author has performed a signal service for engineers in the production of so admirable a book. That it is in its third edition is a sufficient guarantee of its excellence. The subject is making such rapid strides, and there is such a widespread interest in it, that it is to be hoped that a fourth edition outlining still further progress may be called for. It is profusely illustrated.

**ELECTRIC WIRING, FITTING, SWITCHES AND LAMPS.** By W. Perren Maycock, M.I.E.E. London: Whittaker & Company. New York: The Macmillan Company. 1899. 16mo. Pp. 466. Price \$1.75.

This is a practical work for electric-light engineers, wiring and fitting contractors, consulting engineers, etc. It is profusely illustrated by 360 illustrations, and gives the wiring rules of the Institution of Electrical Engineers. Of course English practice is dealt with, but American engineers can gain many helpful facts from it.

**AN INTRODUCTION TO THE STUDY OF CENTRAL STATION ELECTRICITY SUPPLY.** By Albert Gay, M.I.E.E., and C. H. Yeaman, A.I.E.E. London: Whittaker & Company. New York: The Macmillan Company. 1899. 12mo. Pp. 467. Price \$3.

A very timely work, dealing of course with English practice, but none the less valuable on this account. It is illustrated by 200 engravings. The book is written by two very practical electrical engineers, and the result of their labors is an eminently useful book dealing with the problems which are constantly occurring in all central station work. It is a book which can be recommended.

**MAN AND HIS ANCESTOR. A STUDY IN EVOLUTION.** By Charles Morris. New York: The Macmillan Company. 1900. 16mo. Pp. 238. Price \$1.25.

An effort has been made in the present volume to present the subject of man's origin in a popular manner, to dwell on the various significant facts that have been discovered since Darwin's time, and to offer certain lines of evidence never before presented in this connection, and which seem to add much strength to the general argument. The subject is of widespread interest, so that the present brief and plain presentation of it will be acceptable.

**THE CRIMINAL: HIS PERSONNEL AND ENVIRONMENT. A SCIENTIFIC STUDY.** By August Drähms. With an introduction by Cesare Lombroso. New York: The Macmillan Company. 1900. 12mo. Pp. 402. Price \$3.

There is no more serious problem confronting society than that of the criminal, and the classic works of Lombroso have revolutionized our ideas regarding the way they should be treated. Lombroso has set his seal upon the book and this is sufficient to emphasize its importance. The author, who is resident chaplain in the San Quentin Prison, Cal., has had ample opportunity for making exhaustive studies, and he has improved his opportunities so as to gather an almost unrivaled collection of data, which he has collated and arranged in readable form. The philosophy of crime, criminal classification and categories are all admirably treated, as well as demography of crime, hypnotism, punishment, reformation and prevention.

**OUTLINES OF INDUSTRIAL CHEMISTRY. A TEXT-BOOK FOR STUDENTS.** By Frank Hall Thorp, Ph.D. New York: The Macmillan Company. 8vo. Pp. 541. Price \$3.50.

It was only a few months ago that we had occasion to review this admirable book, and now we have a new and revised edition. It should be at the right hand of every chemist and teacher. It contains some of the clearest expositions of intricate chemical processes we have ever seen. The good old-fashioned spelling is retained, and so furnishes a valuable example. We have nothing but praise for this book.

**A MANUAL OF ZOOLOGY.** By T. Jeffrey Parker, D.Sc., F.R.S., and William A. Haswell, M.A., D.Sc., F.R.S. New York: The Macmillan Company. 12mo. Pp. 563. Price \$1.60.

It is a novelty to have a scientific book by New Zealand and Australian professors, but an examination of the book reflects great credit upon the authors. It has been adapted for use in American schools and colleges. It is an excellent text book. The information is clearly and well set forth, and the illustrations admirably elucidate the text.

**ON THE BUILDING AND MONUMENTAL STONES OF WISCONSIN.** By Ernest Rober son Buckley, Ph.D. Wisconsin Geological and Natural History Survey. Madison, Wis. 1898. 8vo. Pp. 544.

An important report with splendidly executed plates. Although reports of this kind are of great local value, they are also of value to those who are in any way interested in petrography or in building stones, even though they may live in another section of the country.

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## Notes & Queries

### HINTS TO CORRESPONDENTS.

Names and Address must accompany all letters: no attention will be paid thereto. This is for our information and not for publication.

References to former articles or answers should give date of paper and page or number of question. Inquiries not answered in reasonable time should be repeated: correspondents will bear in mind that some answers require not a little research, and though we endeavor to reply to all either by letter or in this department, each must take his turn.

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Minerals sent for examination should be distinctly marked or labeled.

(7861) A. J. L. asks (1) asks how to get rid of an annoyance on telephone line caused by induction from 500 volt generator which has line running parallel to phone line for several hundred feet. A. You can remedy your trouble with your telephone caused by the induction of the 500 volt generator by using a metallic return wire and either cross them at the poles, or if insulated twisting them together for the entire distance over which they are liable to be disturbed. See Hopkins' "Telephone Lines," price \$1.50 by mail. 2. What causes the colors blue, green, orange, etc., in coal? A. The colors in coal are explained by the diffraction and interference of light. See any larger text book of "Physics." Such as Ganot, price \$6 by mail.

(7862) T. R. asks: I want to run five fans and 26 lights, 16 candle power each, from a dynamo. What horse power engine would it require and what size dynamo? A. You will need a 5 horse power engine to do your work with ease, and a dynamo for about forty or fifty lamps. 2. What engine would be the best to use, gas or steam? A. Gas engines have in some cases been used for such small plants, by putting a heavy balance wheel upon the engine to make its motion uniform, but a good steam engine is more commonly used. The engine you name is considered a good one.

(7863) C. A. P. asks: How many feet of wire will it take to wind the armature of the alternator described in SCIENTIFIC AMERICAN, issued September 11, 1897. A. About 800 feet or two pounds.

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