

SCIENCE

A WEEKLY JOURNAL DEVOTED TO THE ADVANCEMENT OF SCIENCE, PUBLISHING THE OFFICIAL NOTICES AND PROCEEDINGS OF THE AMERICAN ASSOCIATION FOR THE ADVANCEMENT OF SCIENCE.

EDITORIAL COMMITTEE: S. NEWCOMB, Mathematics; R. S. WOODWARD, Mechanics; E. C. PICKERING, Astronomy; T. C. MENDENHALL, Physics; R. H. THURSTON, Engineering; IRA REMSEN, Chemistry; CHARLES D. WALCOTT, Geology; W. M. DAVIS, Physiography; HENRY F. OSBORN, Paleontology; W. K. BROOKS, C. HART MERRIAM, Zoology; S. H. SCUDDER, Entomology; C. E. BESSEY, N. L. BRITTON, Botany; C. S. MINOT, Embryology, Histology; H. P. BOWDITCH, Physiology; J. S. BILLINGS, Hygiene; WILLIAM H. WELCH, Pathology; J. MCKEEN CATTELL, Psychology; J. W. POWELL, Anthropology.

NEW SERIES. VOLUME XV.

JANUARY-JUNE, 1902.

NEW YORK
THE MACMILLAN COMPANY
1902

THE NEW ERA PRINTING COMPANY,
41 NORTH QUEEN STREET,
LANCASTER, PA.

CONTENTS AND INDEX.

N. S. VOL. XV.—JANUARY TO JUNE, 1902.

The Names of Contributors are Printed in Small Capitals.

- A., C., Guatemala Earthquake Waves, 873
A., J. A., Häcker's Gesang der Vögel, 98; Ridgway's Birds of North and Middle Amer., 225
ABBE, C., Pernter's Meteorological Optics, 708; Indian Summer, 793
Aeronautics, R. H. T., 633
Agricultural Experiment Stations, A. C. TRUE, 939
Agriculture and Experiment Stations, H. F. ROBERTS, 430; Graduate School of, 997
Agriculturists, College work for, R. H. THURSTON, 534
ALLEN, F., Injuries to the Eye caused by Intense Light, 109
ALLEN, G. M., Boston Society of Natural History, 192, 471, 666
American Association for the Advancement of Science: Anthropology, 121, 509, 532, 1032; Zoology, 132; Membership in, 616, 814, 982; Physics, 631; Meeting of Council, 657; Mechanical Science and Engineering, 668, 1031; Mathematics and Astronomy, 668; Pittsburgh Meeting, 801, 868, 911, 955, 998; Social and Economic Science, 827; Chemistry, 869, 1030
AMI, H. M., Union and Riverdale Formations in Nova Scotia, 392
Anatomists, American, Association of, 130
Anthropological, Society of Washington, W. HOUGH, 147, 391, 544, 790; Expedition to Torres Straits, J. JASTROW, 742; National, Society, F. BOAS, 804; W. J. M., 1035
Anthropology, in United States, G. G. MACCURDY, 211; Twenty Years of, G. G. MACCURDY, 532
Appointments, Scientific, under the Government, 634, 997
Astronomical, and Astrophysical Society of America, W. S. EICHELBERGER, 255, 284; Bulletin, E. C. PICKERING, 996
Bacteriologists, Amer. Society of, H. W. CONN, 361
Baer, von, The Law of, O. C. GLASER, 976
BAGG, Jr., R. M., *Discorbina Rugosa* d'Orbigny, 755
Baldwin, J. M., Dictionary of Philosophy, F. THILLY, 302; Social and Ethical Interpretations, G. TOSTI, 551
BANCROFT, W. D., Roozeboom on Die heterogenen Gleichgewichte, 537; Ostwald's Analytic Chemistry, 538
BANKS, N., Sjöstedt's Der Termiten Afrikas, 307
BARNES, C. R., Nêmec's Die Reizleitung bei den Pflanzen, 660
Barometry, F. H. BIGELOW, 417
BARROWS, F. W., and L. C. NEWELL, R. E. DODGE, M. R. MILLER, H. R. LINVILLE, N. Y. State Teachers Association, 729
BARUS, C., Graded Condensation in Benzine Vapor, 175; Amer. Jour. of Physics, 629; Properties of Nuclei, 912
BASKERVILLE, C., Elisha Mitchell Scientific Society, 232, 312, 549, 747; and H. R. WELLER, Black Rain in North Carolina, 1034
BATHER, F. A., 'Ecology,' 747, 993
BAUER, L. A., Magnetic Disturbance and Eruption of Mont Pelee, 873
BEAL, W. J., What is Nature Study? 991
BEAN, B. A., A 'Whale Shark,' 353; Conger Eel, 715
BEEBE, C. W., A Subdermal Mite in Birds, 754
BESSEY, C. E., Botanical Notes, 75, 274, 511, 632, 793; 'Ecology,' 593; Campbell's Botany, 900
BIGELOW, F. H., A New Barometry, 417
Biological Society of Washington, F. A. LUCAS, 107, 189, 269, 389, 468, 588, 709, 746, 907, 1032
Birds, Song in, W. E. D. SCOTT, 178; W. CRAIG, 590; W. S. KELLEY, 715
BIRGE, E. A., Amer. Society of Naturalists, 299
Blood-corpuses, Red, Nodules in, G. MACLOSKIE, 499; G. N. STEWART, 714
BOAS, F., Variability of Organisms, 1; National Anthropological Society, 804
BOLTON, H. C., Rössing's Geschichte der Metalle, 139; Memorial Lectures at Chemical Society of London, 421; Correspondence of J. Berzelius and F. Wöhler, 740; of Liebig and Schönbein, 816
BOOTH, E., Chemistry in California Schools, 35; Pacific Coast Assoc. of Chem. Teachers, 868
Boston Society of Natural History, G. M. ALLEN, 192, 471, 666
Botanical, Notes, C. E. BESSEY, 75, 274, 511, 632, 793; Garden, Missouri, 157; Section of Concilium Bibliographicum, H. H. FIELD, 357; Society of Washington, H. J. WEBBER, 895, 903, 989
Botanists of Central States, A. SCHNEIDER, 454
BRADLEY, W. P., Sensitive Thermostat, 510
BRITTON, W. E., The Gray Squirrel as Twig-pruner, 950
BROOKS, A. H., Geological Society of Washington, 150, 350, 389, 506, 545, 664, 710, 822; North-western America and Northeastern Asia, 909
BROOKS, W. K., Intellectual Conditions for the Science of Embryology, 444, 481
BROUGH, B. H., Andrew Carnegie Research Scholarship, 73
BROWN, A. C., Ions of Electrolysis, 881
BROWN, J. S., Injuries to the Eye by Intense Light, 433
Broun, William Le Roy, 316

- BURGESS, E. S., Torrey Botanical Club, 350, 508, 589, 627, 711
 BURNHAM, S. H., Torrey Botanical Club, 908
 BUTLER, N. M., President's Inaugural Address, 641
- C., E. G., Morgan's Regeneration, 620
 C., T. D. A., Las Vegas Science Club, 590
 CADY, W. G., Earth-Current Observations, 222
 California, Dredging on Coast, W. E. RITTER, 55;
 Submarine Valleys of, W. S. T. SMITH, 670
 CALKINS, G. N., Lankester's Treatise on Zoology, 267
 CALL, R. E., Unpublished Letter of Rafinesque, 713
 Canada, Royal Society of, President's Address, J. LOUDON, 1001; Geology and Biology, G. U. HAY, 1009; Mathematics, Physics and Chemistry, W. L. MILLER, 1012
 Carnegie, Research Scholarship, B. H. BROUGH, 73; Institution, 77, 114; D. C. G., 201; Astronomy, E. C. PICKERING, 553
 CASEY, T. L., Jackson Outcrops on Red River, 716
 Catalogue, International, of Scientific Literature, 796
 CATTELL, J. McK., Amer. Soc. of Naturalists, 253
 Chemical, Society, American, J. L. H., 126; Nichol's Research Medal, 875; Northeastern Section, H. FAY, 72, 308, 509, 628; North Carolina Section, C. B. WILLIAMS, 105; Society of Washington, L. S. MUNSON, 145, 666
 Chemistry, in California Schools, E. BOOTH, 35; Development of, F. W. CLARKE, 161; Notes on Inorganic, J. L. H., 233, 393, 434, 513; Technical, W. A. NOYES, 382; Instruction in, A. LACHMAN, 775; and Toxicology of Plant Substances, V. K. CHESNUT, 1016
 CHESNUT, V. K., Chemistry and Toxicology of Plant Substances, 1016
 CHILD, C. D., Discharge from Hot Platinum Wires, 553
 CHILD, C. M., Univ. of Chicago Zoological Club, 310, 467
 CHITTENDEN, F. H., Sanderson's Injurious Insects, 540
 CHITTENDEN, R. H., Roscoe-Schorlemmer's Chemie, 661
 CHURCH, I. P., Bovey's Treatise on Hydraulics, 65
 CLARK, H. L., Humming-birds, 108
 CLARKE, F. W., Development of Chemistry, 161
 CLARKE, J. M., Centenary of Hugh Miller, 631
 CLAYTON, H. H., Daily Barometric Wave, 232; Endowment of Research, 351; Volcanic Eruption in Martinique, 791
 CLEMENTS, F. E., Mohr's Plant Life of Alabama, 23; The Dismal Swamp, 306; von Mannagetta's Die Vegetationsverhältnisse der Illyrischen Länder, 819
 Coal-tar Industry, A. C. GREEN, 7
 COCKERELL, T. D. A., English Sparrow in New Mexico, 149; Monophlebina Coccidæ, 717; Newstead on Coccidæ of British Isles, 744
 COLE, F. N., American Mathematical Society, 103, 427, 821
 Colorado Academy of Science, W. C. FERRILL, 548
 COMSTOCK, G. C., Newcomb's The Stars, 220
 CONARD, H. S., The Embryo of Nymphaea, 316
 Condensation, Graded, in Benzine Vapor, C. BARUS, 175
 CONN, H. W., American Society of Bacteriologists, 361
 COOK, O. F., Types and Synonyms, 646; Kinetic Evolution of Man, 927
 CRAIG, W., Song in Birds, 590; 'Ecology,' 793
 CRAMPTON, H. E., N. Y. Acad. of Sci., Biology, 191, 229, 470, 626; Public Lecture, 508
 CRAWFORDS, J., High Water in Lakes of Nicaragua, 392
 CRAWLEY, E. S., Math. and Astr. at the Amer. Assoc., 668
- DALL, W. H., On the True Nature of Tamiosoma, 5; Botanical Nomenclature, 749
 DAVENPORT, C. B., American Society of Naturalists, 244; Schmeil's Zoology, 901
 DAVIS, B., Motion of Ions, 853
 DAVIS, W. M., Current Notes on Physiography, 74, 154, 234; Geographical Society of North America, 313
 DEAN, B., Weber on Dutch Expedition to Malay Archipelago, 658
 DE VRIES, H., Origin of Species by Mutation, 721
 DILLER, J. S., Mt. Mazama, 203; and G. STEIGER, Volcanic Dust and Sand, 947
 Discussion and Correspondence, 72, 148, 195, 232, 271, 313, 351, 392, 430, 472, 509, 549, 590, 629, 668, 712, 747, 791, 824, 868, 909, 947, 991, 1033
 DODGE, R. E., N. Y. Acad. of Sci., Geology and Mineralogy, 106; Annual Meeting, 391
 Donkin, Bryan, R. H. T., 515
 DOOLITTLE, C. L., Scientific Research, 841
 DOUGLASS, E., Dinosaurs in the Ft. Pierre Shales, 31; Torrejon Mammals in Montana, 272
 DUANE, W., On the Siphon, 152
 DUERDEN, J. E., Vaughan's Fossil Corals, 143
 DWIGHT, T., Pick and Fischer on Animal Mechanics, 24
 DYAR, H. G., Hampson's Lepidoptera Phalænæ, 99
- Earthquake Waves, Guatemala, C. A., 873
 'Ecology,' C. E. BESSEY, L. F. WARD, T. GILL, G. K. GILBERT, 593; F. A. BATHER, 747, 993; W. F. GANONG, 593, 792; W. CRAIG, 793; J. JASTROW, 793; W. M. WHEELER, 971
 Eel, Conger, B. A. BEAN, 715
 Effront, J., Enzymes, A. F. WOODS, 586
 EICHELBERGER, W. S., Astronomical and Astrophysical Soc. of Amer., 255, 284
 Electro-Chemical Society, American, 505
 Elisha Mitchell Scientific Society, C. BASKERVILLE, 232, 312, 549, 747
 ELLIS, H., Boies's The Science of Penology, 787
 Embryology, Science of, W. K. BROOKS, 444, 481
 EMCH, A., Steiner's Lost Manuscript, 713
 Engineering, Notes, R. H. T., 273, 473; Index, M. MERRIMAN, 539
 Evolution, W. M. WHEELER, 766; Kinetic, of Man, O. F. COOK, 927
 Experimental Stations, Central Control of, E. W. HILGARD, 668
- FARRINGTON, O. C., Museum Study by Chicago Public Schools, 181
 FAY, H., Northeastern Section of Amer. Chem. Soc., 72, 308, 509, 628
 FERRILL, W. C., Colorado Acad. of Sci., 548
 FIELD, G. W., The Lobster Industry, 612

- FIELD, H. H., Botanical Section of Concilium Bibliographicum, 357
Filhol, Henri, H. F. O., 912
FLATHER, J. J., and C. A. WALDO, Mechanical Science and Engineering at Amer. Assoc., 668
FLÜGEL, E., Wundt on Fechner, 386
FORBES, S. A., Amer. Society of Naturalists, 251
Forestry in N. Y. State, 91
Forests, Sacramento, R. T. HILL, 315
Fossil, Mammals, Cuban, T. W. VAUGHAN, 148; Shells, R. E. C. STEARNS, 153, 393
FRANKLIN, W. S., Wireless Telegraphy, 112
FROST, E. B., Lockyer's Inorganic Evolution, 584
G., D. C., The Carnegie Institution, 201
GANONG, W. F., Society for Plant Morphology and Physiology, 401; 'Ecology,' 593, 792; Botanical Laboratory, Smith College, 933
GARDINER, H. N., Amer. Philos. Assoc., 583
Gasoline, Use of, A. P. SAUNDERS, 151
Geographic Society, National, 157; A. J. HENRY, 270; Notes, 836
Geographical Society, An American, I. C. RUSSELL, 195; W. M. DAVIS, 313; J. S. BROWN, 433; W. J. MCGEE, 549; J. P. GOODE, 592
Geological Society, of America, A. W. GRABAU, 81; H. LE R. FAIRCHILD, 826; Cordilleran Section, A. C. LAWSON, 410; of Washington, A. H. BROOKS, 150, 350, 389, 506, 545, 664, 710, 822; F. L. RANSOME, 905; Survey, 395
GERMANN, G. B., University Registration Statistics, 16
GILBERT, G. K., 'Ecology,' 594
GILL, T., 'Ecology,' 593; The 'Whale-Shark,' 824
GILMAN, D. C., Johns Hopkins University, Commemorative Address, 321
Glaciology, R. D. SALISBURY, 353
GLASER, O. C., The Law of von Baer, 976
GOODE, J. P., Injuries to the Eye by Intense Light, 433; Geographical Society of America, 592
GOODSPEED, A. W., Mass and Weight, 951
GORDON, R. H., Explosive Force of Volcanoes, 1033
GRABAU, A. W., Geological Society of America, 81
Gravity of the Ocean, O. H. T., 514
GREEN, A. C., Coal-tar Industry, 7
GREENHILL, A. G., Mathematical Theory of the Top, 712
H., J. L., American Chemical Society, 126; Inorganic Chemistry, 233, 393, 434, 513
HALE, A. C., and F. C. PHILLIPS, Amer. Chem. Soc., 869
HALSTED, G. B., Barbarin's La géométrie non-Euclidienne, 984
Hamilton, W. E., A. MACFARLANE, 950
Haton, M., Retirement of, R. H. THURSTON, 235
HAY, G. U., Section of Natural Sciences, Royal Society of Canada, 1009
HENRY, A. J., National Geographic Society, 270
HENSHAW, S., Alpheus Hyatt, 300
HERING, C., Mass and Weight, 993
HERRICK, C. J., Cole and Johnstone's Pleuronectes, 465
HERSHEY, O. H., Tertiary Penplain Region, 951
HILGARD, E. W., Alkali Salts and the Soil Surface, 314; Control of Experimental Stations, 668
HILL, R. T., Sacramento Forests, 315
HOBBS, W. H., Meteoric Iron, 826
HOLGATE, T. F., Chicago Section of American Math. Soc., 349, 625
HOLLAND, W. J., Biologia Centrali-Americana, 186; American Association, 868, 911
HOLLICK, A., Endowment of Research, 472
HOPKINS, T. C., Onondaga Acad. of Sci., 509
HOUGH, W., Anthropological Soc. of Washington, 147, 391, 544, 790
HOUSER, G. L., Intracellular Canaliculi of the Liver, 874
HOVEY, E. O., N. Y. Acad. of Sci., Geology and Mineralogy, 27, 469, 744, 867
HOWARD, L. O., Theobald on Culicidae; Ross's Mosquito Brigades, 345
HOWE, H. M., Metallurgical Laboratories, 761
HOWE, M. A., Torrey Botanical Club, 72
HUNT, M. H., The Will of the People not of an Oligarchy, 749
HUNTER, JR., G. W., N. Y. Assoc. of Biology Teachers, 549, 629
Hyatt, Alpheus, S. HENSHAW, 300
Indian Summer, C. ABBE, 793
Interest, Rate of, on Government Securities, 954
Ions, Electrical Charge of, J. LOEB, 434; Motion of, B. DAVIS, 853; of Electrolysis, A. C. BROWN, 881
Iowa Academy of Sciences, A. G. LEONARD, 388
JACKSON, D. C., Fleming on the Electrical Laboratory, 817
JASTROW, J., Cambridge Anthropological Expedition to Torres Straits, 742; 'Ecology,' 793
Johns Hopkins University, Commemorative Address, D. C. GILMAN, 321; Inaugural Address, I. REMSEN, 330; Honorary Degrees, 339
JULIEN, A. A., Pyrite and Marcasite, 870
Kansas Academy of Science, D. E. LANTZ, 193
KELLEY, W. S., Song in Birds, 715
KEYES, C. R., Differentiation of Rocks, 32
King, Clarence, 113
KINGSLEY, J. S., Gaupp's Anatomy of the Frog, 100
KOBER, G. M., Willoughby's Hygiene, 861
LACHMAN, A., Technical Chemistry, 775
LANGLEY, S. P., The Laws of Nature, 921
Language of Science, T. A. RICKARD, 132
LANTZ, D. E., Kansas Acad. of Science, 193
Las Vegas Science Club, T. D. A. C., 590
LAWSON, A. C., Cordilleran Section, Geological Soc. of Amer., 410
LEE, F. S., Amer. Physiological Soc., Chicago Section, 341; Verworm's Allgemeine Physiologie, 423
LEIDY, J., Correspondence of Professor Leidy, 715
LEITH, C. K., Wisconsin Univ. Sci. Club, 270, 542, 712, 909
LEONARD, A. G., Iowa Acad. of Sciences, 388
Lepidoptera, Strecker Collection, 156
LLOYD, F. E., Caldwell's Botany, 786
Lobster Industry, G. W. FIELD, 612
Locy, W. A., Hertwig's Entwicklung der Biologie, 17; Packard's Life of Lamarek, 988

- LOEB, J., Physiological Effect of the Electrical Charge of Ions, 434
 LOUDON, J., The University in Relation to Research, 1001
 LUCAS, F. A., Biological Society of Washington, 107, 189, 269, 389, 468, 588, 709, 746, 907, 1032
 M., W J, American Anthropologic Assoc., 1035
 MACCURDY, G. G., Anthropology at the American Association, 121; Teaching of Anthropology in United States, 211; Section H, 532
 MACDOUGALL, R., Reprints, 315
 MACFARLANE, A., W. E. Hamilton, 950
 MCGEE, W J, American Society of Naturalists, 246; Union Among Geographers, 549
 MACLOSKIE, G., Nodules and Molecules of Red Blood-corpuseles, 499
 MCNAIR, F. W., Divergence of Long Plumb-lines, 994
 MANDEL, J. A., Chittenden's Physiological Chemistry, 141
 MASON, O. T., Hoerne's Primitive Man, 142; Coiled Basketry, 872
 Mass and Weight, A. W. GOODSPEED, 951; C. HERING, 993
 Mathematical Society, American, F. N. COLE, 103, 427, 821; Chicago Section, T. F. HOLGATE, 349, 625; Pacific Section, G. A. MILLER, 789
 MATHEWS, A. P., Nerve Stimulation, 492
 MATHEWS, A., Rafinesque and Cutler, 951
 Mazama, Mt., Wreck of, J. S. DILLER, 203
 MEANS, T. H., Salts near the Surface of Soils, 33
 Measurement and Calculation, R. S. Woodward, 961
 Membership of the American Association, 616, 814, 982
 MERRIMAN, M., The Engineering Index, 539
 MERRITT, E., American Physical Society, 227, 425, 865
 MESSENGER, J. F., How Many One-dollar Bills equal in Weight a Five-dollar Gold Piece, 672
 Metallurgical Laboratories, H. M. HOWE, 761
 METCALF, H., Gorham's Bacteriology, 188
 METCALF, M. M., Amer. Morphological Society, 521, 571; Microscopic Illumination, 937
 Meteoric Iron, W. H. HOBBS, 826
 Meteorite, Arabian, H. A. WARD, 149
 Meteorology, in Argentina, 875; Current Notes, R. DE C. WARD, 110, 435, 555, 594, 756, 914
 Metric System, 829
 Michigan, Univ. of, Research Club, F. C. NEWCOMBE, 28, 466
 MILLER, G. A., Amer. Math. Soc., Pacific Section, 789
 MILLER, W. L., Mathematical, Physical and Chemical Sciences at Royal Society of Canada, 1012
 Miller, Hugh, Centenary, J. M. CLARKE, 631
 MINOT, C. S., American Society of Naturalists, 241; Vacations at American Universities, 441
 Mite, Subdermal, occurring among Birds, C. W. BEEBE, 754; H. B. WARD, 911
 MOORE, J. W., A Mud Shower, 714
 Morphological Society, American, M. M. METCALF, 521, 571
 MORSE, E. S., Our Sister Societies, 698
 MORSE, M., Range of Fox Snake, 1035
 Morton, Henry, R. H. THURSTON, 858
 MOSELEY, E. L., Ohio Academy of Science, 227
 Mosquitoes, J. B. SMITH, 13, 898, 1028
 Mud Shower, J. W. MOORE, 714; A. E. VERRILL, 872
 MUNSON, L. S., Chem. Soc. of Washington, 145, 666
 Museum Study by Chicago Public Schools, O. C. FARRINGTON
 Mutation, Origin of Species by, H. DE VRIES, 721
 NACHTRIEB, H. F., Shipley and MacBride's Zoology, 386
 National Academy of Sciences, 663
 'Natural History,' 'Ecology,' or 'Ethology,' W. M. WHEELER, 971
 Naturalists, American Society of, Chicago Meeting, 41; Relation of, to other Scientific Societies, C. S. MINOT, 241; C. B. DAVENPORT, 244; W J MCGEE, 246; W. TRELEASE, 250; S. A. FORBES, 251; J. MCK. CATTELL, 253; E. A. BIRGE, 299
 Nature, Laws of, S. P. LANGLEY, 921; Study, W. J. BEAL, 991
 Nebraska Academy of Science, R. H. WOLCOTT, 428
 NEILSON, H., Hydrolysis and Synthesis of Ethyl Butyrate by Platinum Black, 715
 Nerve Stimulation, A. P. MATHEWS, 492
 Newcomb, S., The Stars, G. C. COMSTOCK, 220
 NEWCOMBE, F. C., Univ. of Mich., Research Club, 28, 466
 Newstead on Coccidæ, T. D. A. COCKERELL, 744
 New York, Academy of Sciences, Geology and Mineralogy, E. O. HOVEY, 27, 469, 744, 867; R. E. DODGE, 106; Astronomy, Physics and Chemistry, F. L. TUFTS, 71, 230, 310, 547; Biology, H. E. CRAMPTON, 191, 229, 470, 626; Anthropology and Psychology, R. S. WOODWORTH, 309, 547, 627, 907; Annual Meeting, R. E. DODGE, 391; Public Lecture, H. E. CRAMPTON, 508; Assoc. of Biology Teachers, G. W. HUNTER, Jr., 549, 629; State Science Teachers Association, F. W. BARROWS, 729; L. C. NEWELL, 732; R. E. DODGE, 733; M. R. MILLER, 734; H. R. LINVILLE, 734
 Nicaragua, Lakes of, High water, J. CRAWFORDS, 392
 NICHOLS, E. F., and W. S. FRANKLIN, Physics at the American Association, 631
 Nomenclature, Scientific, F. W. VERY, 472; H. WHITE, 511; W. H. DALL, 749; F. A. BATHER, 747; W. M. WHEELER, 971
 Nova Scotia, Union and Riverdale Formations, H. M. AMI, 392
 NOYES, W. A., Technical Chemistry, 382
 Nuclei, Certain Properties of, C. BARUS, 912
 Nymphæa, Embryo of, H. S. CONARD, 316
 O., H. F., Recent Zoopaleontology, 355, 514; Henri Filhol, 912
 Ohio Academy of Science, E. L. MOSELEY, 227
 Onondaga Academy of Science, T. C. HOPKINS, 509; P. F. SCHNEIDER, 629
 O'REILLY, M. F., Schultze and Sevenoak's Geometry, 384

- P., A. S., Kidd's Use-Inheritance, 142
 PACKARD, A. S.; Beecher's Studies on Evolution, 503
 Paleontological Notes, F. A. L., 554
 PARKER, G. H., Kellogg's Zoology, 864
 Pathology, Vegetable, A. D. SELBY, 736
 Peneplain, Early Tertiary, O. H. HERSHEY, 951
 Petrology, Progress in, F. L. RANSOME, 673
 Philippines, Map of, 113
 Philosophical, Society, of Washington, C. K. WEAD, 190, 231, 390, 429, 543, 588, 710, 866, 945; American, 504; President's Address, I. J. WISTAR, 681; The General Meeting, 686; Our Sister Societies, E. S. MORSE, 698; Association, H. N. GARDINER, 583
 Physical Society, Amer., E. MERRITT, 227, 425, 865
 Physics, an American Journal of, C. BARUS, 629; and the Study of Medicine, C. C. TROWBRIDGE, 848
 Physiography, Current Notes on, W. M. DAVIS, 74, 154, 234
 Physiological Society, American, Chicago Meeting, F. S. LEE, 341
 PICKERING, E. C., Astronomical Bulletin, 996; Carnegie Institution, Astronomy, 553
 Plant, Morphology and Physiology, Society for, W. F. GANONG, 401; Pathology, E. F. SMITH, 601
 Platinum, Discharge from Hot Wires, C. D. CHILD, 553; Black, Hydrolysis and Synthesis of Ethyl Butyrate by, H. NELSON, 715
 Plumb-lines, Divergence of, F. W. MCNAIR, 994
 Price, G. M., Handbook on Sanitation, 902
 'Prickly Pear,' C. H. STERNBERG, 714
 PRITCHETT, H. S., Bureau of Standards, 281
 Propaganda, Subjection of Science and Education to, W. T. SEDGWICK, 44
 Pyrite and Marcasite, A. A. JULIEN, 870
- Quotations, 914
- Radinger, Johann von, R. H. THURSTON, 595
 Rafinesque, Letter of, R. E. CALL, 713; and Cutler, A. MATTHEWS, 951
 Rain, Black, in North Carolina, C. BASKERVILLE and H. R. WELER, 1034
 RAMALEY, F., Sex in Seed Plants, 996
 RANSOME, F. L., Petrology, 673; Geol. Soc. of Washington, 905
 REMSEN, I., Johns Hopkins University Inaugural Address, 330
 RENOUF, E., Bailey's Qualitative Analysis, 101; Thurston's Inorganic Chemistry, 102; Benedict's Chemical Experiments, 102; Young's Chemistry, 502; Gattermann's Organic Chemistry, 624; Shaw's General Chemistry, Noyes' Qualitative Analysis, 625
 Reprints, R. MACDOUGALL, 315
 Research, Endowment, H. H. CLAYTON, 351; A. HOLLOK, 472; Scientific, C. L. DOOLITTLE, 841
 REOADS, S. N., Bottlenose Whale, 756
 RICKARD, T. A., Simplicity in the Language of Science, 132
 RITTER, W. E., A Summer's Dredging on the Coast of Southern California, 55
 ROBERTS, H. F., Agriculture and Experiment Stations, 430
 Ross, R., Mosquito Brigades, L. O. HOWARD, 345
 ROTCH, A. L., Measurement of Wind at Sea, 72
 Row, S., Paper Folding, F. N. WILLSON, 464
 RUSSELL, F., Know then Thyself, 561
 RUSSELL, I. C., An American Geographical Society, 195
 St. Louis Academy of Science, W. TRELEASE, 29, 105, 194, 271, 508, 548, 667, 1033
 SALISBURY, R. D., Glaciology, 353
 Salts, Retention of, Near Surface of Soils, T. H. MEANS, 33; Alkali, Rise to the Soil Surface, E. W. HILGARD, 314
 SAUNDERS, A. P., Precaution in the Use of Gasoline, 151
 SCHNEIDER, A., Botanists of Central States, 454
 SCHNEIDER, P. F., Onondaga Acad. of Sci., 629
 SCHWARZ, G. F., v. Salisch on Forstästhetik, 863
 Scientific Books, 17, 65, 98, 139, 186, 220, 267, 302, 345, 384, 421, 463, 500, 537, 584, 620, 658, 700, 740, 786, 816, 861, 900, 943, 984, 1028; Journals and Articles, 26, 70, 103, 145, 226, 307, 348, 387, 425, 541, 587, 662, 708, 788, 865, 902, 945, 1030; Notes and News, 36, 77, 115, 157, 197, 236, 277, 317, 358, 396, 437, 476, 516, 557, 596, 635, 675, 718, 757, 796, 837, 876, 916, 956, 998, 1036
 SCOTT, W. E. D., Data on Song in Birds, 178
 SEDGWICK, W. T., Subjection of Science and Education to Propaganda, 44; Temperance Physiology in the Public Schools, 753
 SELBY, A. D., Future of Vegetable Pathology, 736
 Shorter Articles, 30, 108, 149, 272, 316, 553, 672, 715, 754, 827, 874, 912, 951, 994, 1034
 SIMONDS, F. W., Texas Academy of Science, 311
 Siphon, On the, W. DUANE, 152
 Sjöstedt, Y., Der Termiten Afrikas, N. BANKS, 307
 SMALL, A. W., Giddings's Inductive Sociology, 700
 SMITH, D. E., Young on Mathematics, 25
 SMITH, EDGAR F., Jones's Electrochemistry, 586
 SMITH, ERWIN F., Schimper's Nahrungs- und Genussmittel, 142; Plant Pathology, 601
 SMITH, H. I., Anthropology at the American Association, 509
 SMITH, H. M., Smallest known Vertebrate, 30
 SMITH, J. B., Mosquitoes, 13, 898, 1028
 SMITH, W. S. T., Submarine Valleys, 670
 Smith College, Botanical Laboratory, W. F. GANONG, 933
 Societies and Academies, 27, 71, 103, 145, 189, 227, 269, 308, 349, 388, 425, 466, 504, 542, 588, 625, 663, 709, 744, 789, 821, 865, 903, 945, 989, 1030
 SPALDING, V. M., Tropical Laboratory at Miami, 856
 Squirrel, Gray, W. E. BRITTON, 950
 Standards, National Bureau of, H. S. PRITCHETT, 281
 Statistics, University Registration, G. B. GERMANN, 16
 STEARNS, R. E. C., Fossil Shells of John Day Region, 153, 393
 Steiner's Lost Manuscript, A. EMCH, 713
 STERNBERG, C. H., The 'Prickly Pear,' 714
 STEVENSON, J. J., von Zittel's History of Geology and Paleontology, 661
 STEWART, G. N., Nodules in Colored Blood Corpuceles, 714
 STONE, W., Felis Oregonensis Raf., 510

- Streptococci Characteristic of Sewage, C. E. A. WINSLOW and M. P. HUNNEWELL, 827
- T., F. E., Hazelhurst's Towers and Tanks for Water Works, 463
- T., O. H., Gravity of the Ocean, 514
- T., R. H., Durand's Marine Engineering, 140; MacCord's Velocity Diagrams, 268; Engineering Notes, 273; Bryan Donkin, 515; Aeronautics, 633
- T., W., Bailey and Miller's Cyclopedia of Horticulture, 787
- Tamiosoma, W. H. DALL, 5
- Telegraphy, Wireless, W. S. FRANKLIN, 112; T. J. JOHNSTON, 271
- Temperance Physiology in the Public Schools, M. H. HUNT, 749; W. T. SEDGWICK, 753
- Texas Academy of Science, F. W. SIMONDS, 311
- Thermostat, Sensitive, W. P. BRADLEY, 510
- THILLY, F., Baldwin's Dictionary of Philosophy and Psychology, 302
- Thompson, Elizabeth, Science Fund, 276
- THURSTON, R. H., Engineering, 68; Retirement of Monsieur Haton, 235; New Vapor-Engines, 379; Engineering Notes, 473; College Work for Agriculturists, 534; Johann von Radinger, 595; Henry Morton, 858
- Thurston, W. A., Inorganic Chemistry, E. RENOUF, 102
- Time, Measurement of, M. UPDEGRAFF, 216
- Top, Mathematical Theory of, A. G. GREENHILL, 712
- Torrey Botanical Club, M. A. HOWE, 72; E. S. BURGESS, 350, 508, 589, 627, 711; S. H. BURNHAM, 908
- TOSTI, G., Baldwin's Social and Ethical Interpretations, 551
- TRELEASE, W., St. Louis Academy of Science, 29, 105, 194, 271, 508, 548, 667, 1033; American Society of Naturalists, 250
- Tropical Laboratory at Miami, V. M. SPALDING, 856
- TROWBRIDGE, C. C., Physics and the Study of Medicine, 848
- TRUE, A. C., Agricultural Experiment Stations, 939
- TUFTS, F. L., N. Y. Acad. of Sci., Astronomy, Physics and Chemistry, 71, 230, 310, 547
- Types and Synonyms, O. F. COOK, 646
- UNDERWOOD, L. M., Giesenhagen's Die Farngattung Niphobolus, 623
- University and Educational News, 40, 80, 120, 160, 199, 240, 280, 320, 360, 400, 439, 480, 520, 560, 599, 640, 679, 720, 760, 800, 840, 879, 919, 960, 999, 1040
- UPDEGRAFF, M., Measurement of Time, 216
- Vacations at Amer. Universities, C. S. MINOT, 441
- VAN VLECK, E. B., Borel's Les séries divergentes, Hadamard's La série de Taylor, 500
- Vapor-Engines, R. H. THURSTON, 379
- Variability of Organisms, F. BOAS, 1
- VAUGHAN, T. W., Cuban Fossil Mammals, 148
- VERBILL, A. E., Destruction of Life in Martinique Eruption, 824; Mud Shower, 872
- Vertebrate, Smallest known, H. M. SMITH, 30
- VERY, F. W., Scientific Nomenclature, 472
- Volcanic Eruption in the Lesser Antilles, 791, 824, 836, 873, 915, 947
- Volcanoes, Explosive Force of, R. H. GORDON, 1033
- WARD, H. A., An Arabian Meteorite, 149
- WARD, H. B., Carpenter's The Microscope, 706; Subdermal Mite occurring among Birds, 911
- WARD, L. F., 'Ecology,' 593
- WARD, R. DE C., Notes on Meteorology, 110, 435, 555, 594, 756, 914
- WARDLAW, G. A., Pittsburgh Meeting of American Association, 955, 998
- WEAD, C. K., Philosophical Society of Washington, 190, 231, 390, 429, 543, 588, 710, 866, 945; Crosby-Brown Collection of Musical Instruments, 944
- WEBBER, H. J., Botanical Society of Washington, 895, 903, 989
- WENLEY, R. M., Royce's The World and the Individual, 347
- 'Whale, Shark,' B. A. BEAN, 353; T. GILL, 824; Bottlenose, S. N. RHOADS, 756
- WHEELER, W. M., A Neglected Factor in Evolution, 766; 'Natural History,' 'Ecology' or 'Ethology,' 971
- WHITE, H., Scientific Nomenclature, 511
- WIECHMANN, F. G., Volcanic Dust, 910
- WILLIAMS, C. B., Amer. Chem. Society, North Carolina Section, 105
- WILLISTON, S. W., Seeley's Dragons of the Air, 67; Lucas's Animals of the Past, 586
- WILLSON, F. N., Row's Paper Folding, 464; Bartlett's Mechanical Drawing, 943
- Wind at Sea, Measurement of, A. L. ROTCH, 72
- WINSLOW, C. E. A., and M. P. HUNNEWELL, Streptococci Characteristic of Sewage, 827
- Wisconsin University Science Club, C. K. LEITH, 270, 542, 712, 909
- WISTAR, I. J., American Philosophical Soc., President's Address, 681
- WOLCOTT, R. H., Nebraska Acad. of Sci., 428
- WOLFF, J. E., Mineralogy and Petrography at Yale, S. L. Penfield and L. V. Pirsson, 268
- WOODS, A. F., Effront's Enzymes, 586; Cross and Bevan on Cellulose, 1029
- WOODWARD, R. S., Measurement and Calculation, 961
- WOODWORTH, R. S., N. Y. Acad. of Sci., Anthropology and Psychology, 309, 547, 627, 907
- WRIGHT, C. D., and F. R. RUTTER, Social and Economic Science at Pittsburgh Meeting of American Association, 827
- YERKES, R. M., Loeb's Comparative Physiology of the Brain, 18
- Zoological Club of the University of Chicago, C. M. CHILD, 310, 467
- Zo paleontology, H. F. O., 355, 514