

SCIENCE

NEW SERIES. VOLUME XL

JULY-DECEMBER, 1914

NEW YORK
THE SCIENCE PRESS
1914

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

CONTENTS AND INDEX.

NEW SERIES. VOL. XL.—JULY TO DECEMBER, 1914.

The Names of Contributors are Printed in Small Capitals

- A., J. F., Cubist Science, 167
ABBE, C., Lightning Flashes, 98; Atmosphere, 167
Abel, O., Die Vorzeitlichen Säugetiere, R. S.
 ULL, 787
African, South, Assoc. for Adv. of Sci., 306
Agricultural Colleges and Exper. Stations, A. C.
 TRUE, 757; H. L. KNIGHT, 864
Agriculture, Appropriations for Department, 471
ALEXANDER, H. B., Professor and Institution, 60
ALLEMANN, A., Birth Rate of German Empire, 372
Allen, H. S., Photo-electricity, E. MERRITT, 597
ALLEN, J. A., Birds of N. Y., E. H. Eaton, 677
Allen's Commercial Analysis, L. B. Mendel, 103
American, Chem. Soc., C. L. PARSONS, 34, 73, 110,
 307; Math. Soc., F. N. COLE, 455, 831; Association
 for the Advancement of Science, Section F,
 630; Philadelphia Meeting, 778, 807, 847; Convoca-
 tion Week Meetings, 808, 868, 940; Com-
 mittee on Sci. Research, 846; Toronto Meeting,
 885; San Francisco Meeting, 928
Ames, J. S., Matter, R. A. MILLIKAN, 485
Anderégg, F., and E. D. Roe, Trigonometry, C. J.
 KEYSER, 561
Anthropological Soc. of Wash., D. FOLKMAR, 285;
 832
ARCHIBALD, E. H., Electrical Conductivity, H.
 Scudder, 29
Armington, J. H. and H. J. Cox, Weather and
 Climate of Chicago, A. MCADIE, 525
ARTHUR, J. C., Grove's Rust Fungi, 934
Atmosphere, Motions of, C. ABBE, 167
Atmospheric Phenomena, C. F. TALMAN, 745
Atom, Constitution of, 265; A. S. EVE, 115; G.
 W. STEWART, 661
AULL, W. B. and H. W. BARRE, Cotton Anthrac-
 nose, 109
Avalanche of Rocks, E. S. MORSE, 241
Azotobacter, W. P. HEADDEN, 379

BABCOCK, H. L., Short-tailed Shrew, 526
Bachelor's Degree, W. L. JENNINGS, 57
BACON, R. F., Industry and Research, 871
BAEKELAND, L. H., Industrial Chemistry, 179
Baird, Professor, Statue to, R. W. SHUFELDT, 521
BANCROFT, W. D., Chemistry, E. A. Letts, 139
BANTA, A. M., Pipette Collecting, 98
BARRE, H. W. and W. B. AULL, Cotton Anthrac-
 nose, 109
BARRELL, J., Stratigraphy, A. W. Grabau, 135;
 Polar Wanderings, 333
BARTON, S. G., Uses for Mathematics, 697
BARUS, C., Mathematician in Modern Physics, 721
BATESON, W., Address of President, British As-
 soc., 287; 319
Bateson, W., Genetics, W. E. CASTLE, 241; He-
 redity, W. E. CASTLE, 245; Presidential Ad-
 dress, W. H. DALL, 554
BAUER, L. A., Magnetic Observations, 140

BEATTY, A., Wisconsin Acad. of Sci., 177
BECKWITH, T. D. and G. D. HORTON, Microorgan-
 isms in Eggs, 240
BEDELL, F., Electrical Measurements, A. W.
 Smith, 820
Bees, Queen, F. JAGER and C. W. HOWARD, 720
Belgian Professors, E. B. FROST, 522
BELL, L. and F. H. VERHOEFF, Ultra-Violet Radi-
 ation, 452
BESSEY, C. E., A Botanical Career, 48; Botanical
 Notes, 451, 678, 860, 937; Bacteria and Plant
 Diseases, E. F. Smith, 715
Bessey, C. E., and E. A., Botany, B. D. HALSTED,
 749
BEUTNER, R., Chemie, T. B. Robertson, 786
BIGELOW, H. B., Cruise of the *Grampus*, 881
Bird Genera, Types, W. STONE, 26
Birth Rate, Decreasing, A. ALLEMANN, 372
BLACKWELDER, E., Geology, Y. Ishii, 312
BLAISDELL, F. E., Sr., Carl Fuchs, 91
BLAKE, S. A., Physics Text-books, 673
BLAKESLEE, A. F., The Carnegie Foundation, 482
BLISH, W. G., Cyanide as an Insecticide, 637
Boston Museum of Natural History, 884
Botanical Notes, C. E. BESSEY, 451, 678, 860, 937;
 Soc. of Wash., P. SPAULDING, 794
Botanists of Cent. States, H. C. COWLES, 406
Botany in the Agricultural College, E. B. COPE-
 LAND, 401
Boveri, T., Tumors, G. N. CALKINS, 857
BOWER, F. O., Address to the Bot. Sec. of the
 British Assoc., 357
BRAAM, M., Tenterton Steeple, 893
BRAGG, W. H., X-Rays Crystals, 795
BRIDGES, C. B., *Drosophila*, 107
British Association, Address of President, W.
 BATESON, 287, 319; Bot. Sect., F. O. BOWER,
 357; Vice-presidential Address, E. W. BROWN,
 389; Geog. Sect., C. P. LUCAS, 425; Math. and
 Physical Sci. Sect., F. T. TROUTON, 457; Aus-
 tralian Meeting, 495
Broad, C. D., Perception, Physics and Reality, L.
 T. MORE, 747
BROOKS, B. T., Tin Disease, 166
BROOKS, C. F., Notes on Meteorology, 29, 822
BROWN, E. W., Cosmical Physics, 389
BROWNE, W. W., River Water and *Bacillus coli*,
 863; and D. SOLETSKY, Semi-permeable Cap-
 sules, 176
BRUCE, A. B., Golden Mean in Inheritance, 58
BURG, J. C., University Registration Statistics, 919
BURLINGAME, L., Embedding Trays, 355
BUSHNELL, D. I., JR., Cahokia Mound, 782

Cahokia, or Monk's Mound, A. R. CROOK, 312;
 D. I. BUSHNELL, JR., 782

- California, Museum of Vertebrate Zoology, C. H. MERRIAM, 703
- CALKINS, G. N., Animal Parasites, H. B. Fantham and A. Porter, 105, 814; Malignant Tumors, T. Boveri, 857
- CANNON, W. A., Algerian Sahara, T. H. KEARNEY, 751
- CARMICHAEL, R. D., Outlook for Science, 833
- Carnegie Foundation, A. F. BLAKESLEE, 482
- CASTLE, W. E., Genetics, W. Bateson, 241; Heredity, A. Weismann, 245; W. Bateson, 245; Research and the Universities, 447
- CATTELL, J. MCK., Research and Teaching, 628
- CAUDELL, A. N., Regeneration of Antennæ, 352
- Chamberlin, T. C., and R. D. Salisbury, Geology, H. L. FAIRCHILD, 816
- CHAMBERS, R., JR., The Cell Nucleus, 824
- Chemistry, Industrial, L. H. PAEKELAND, 179; E. Thorpe, W. R. WHITNEY, 562; in the Agricultural College, C. A. PETERS, 674
- CLARK, G. A., Russian versus American Sealing, 736
- CLARK, H. L., Starfishes, A. E. Verrill, 523
- CLARKE, J. M., Newton Horace Winchell, 127; Fossil Botanical Garden, 884
- Coal, Production in 1913, 160
- COBB, J. N., Pacific Fisheries Society, 306
- COBB, N. A., Textile Fibers, 683
- COCKERELL, T. D. A., Sunflowers, 283; Cambridge Manuals, 381; Sunflower Problems, 708; Teaching and Research, 891
- COCKS, R. S., New Orleans Acad. of Sci., 178; Philos. Soc., 831
- COFFEY, G. N., Changes of Drainage in Ohio, 607
- COLE, F. N., Amer. Math. Soc., 455, 831
- College Curriculum, R. S. WOODWORTH, 315
- Collins, J. V., Algebra, C. J. KEYSER, 561
- Composition and Thought, MIDDLE WEST, 344
- CONN, H. W., Bacteriology, H. S. Reed, 820
- COOK, O. F., Fiat Nomenclature, 272
- COPELAND, E. B., Botany in Agricultural College, 401
- Cosmical Physics, E. W. BROWN, 389
- Cotton, Anthracenoze, H. W. BARRE, and W. B. AULL, 109; Worm Moth, H. T. FERNALD, 785; Fiber, B. S. LEVINE, 906
- Couturat, L., Algebra, C. J. KEYSER, 561
- COWLES, H. C., Botanists of the Central States, 406; Vegetation of Sandhills, 788
- COX, H. J., and J. H. Armitington, Weather and Climate of Chicago, A. MCADIE, 525
- COX, W. T., Melanism and Food, 99
- CROOK, A. R., Cahokia or Monk's Mound, 312
- Crops, Statistics of, G. F. WARREN, 121
- CROSS, W., Igneous Rocks, J. P. Iddings, 100
- CROWTHER, J. A., Molecular Physics, R. A. MILLIKAN, 716
- CURTIS, C. C., Plants, J. E. KIRKWOOD, 678
- DAHLGREN, U., Nerve Centers in Skates, 862
- DALL, W. H., Henry Hemphill, 265; Middle Triassic Faunas, J. P. Smith, 522; Antarctic Expedition, C. T. Regan, 753; Dr. Bateson's Presidential Address, 554
- DALY, R. A., Igneous Rocks, J. P. IDDINGS, 710
- DAVIS, D. J., Septic Sore Throat, 717
- DEMORREST, D. J., Chemistry, J. W. MELLOR, 314
- DICKERSON, R. E., Ione Formation of Sierra Nevada Foothills, 67
- DICKSON, L. E., Equations, G. A. MILLER, 410
- Discussion and Correspondence, 26, 56, 98, 134, 166, 207, 239, 271, 311, 344, 379, 408, 447, 482, 510, 554, 593, 636, 670, 708, 744, 782, 814, 851, 891, 933
- Doctorates Conferred by Amer. Universities, 256
- DONALDSON, H. H., Charles Sedgwick Minot, 926
- Drainage, Changes of, G. N. COFFEY, 607
- DROSOPHILA, Sex-linked Genes, C. B. BRIDGES, 107
- DRUDE, O., Oekologie der Pflanzen, J. W. HARSHBERGER, 314
- Earth's Crust, T. H. HOLLAND, 533; Magnetic Field, S. R. WILLIAMS, 606
- EATON, E. H., Birds of N. Y., J. A. ALLEN, 677
- EDUCATION, V. C. VAUGHAN, 685
- Educational Costs, L. M. PASSANO, 39
- Egg, Unfertilized, and Ultra-Violet Rays, J. LOEB, 680
- ELLIS, M. M., Gregarine Cysts, 174
- EMBODY, G. C., Biologie, P. O. HAEMPEL, 277
- EMERSON, R. A., Size Inheritance, 57
- EMMONS, W. H., Geology, H. RIES, and T. L. Watson, 898
- Emmons Memorial Fellowship, 927
- Encyclopaedia Britannica, B. F. GROAT, 135
- ENRIQUES, F., Problems of Science, C. J. KEYSER, 346
- Erythrocytes, Human, W. W. OLIVER, 645
- EVE, A. S., Constitution of the Atom, 115
- FAIRCHILD, H. L., Geology, T. C. Chamberlin and R. D. Salisbury, 816
- FANTHAM, H. B., and A. PORTER, Animal Parasites, G. N. CALKINS, 105, 814
- FARWELL, H. W., Third Order Rainbow, 595
- FAUST, E. C., Cladonema, 934
- FERNALD, H. T., Cotton Worm Moth, 785
- FERREE, C. E., Lighting and Efficiency of the Eye, 84
- FERRY, F. C., National Conference Committee, 565
- FESTNER, J., Garbage Incineration, 903
- Firefly, Luminous Material of, E. N. HARVEY, 33
- FISCHER, M. H., Spirit of a University, 464
- Flood Prevention, J. G. WALL, 44
- FOLKMAR, D., Anthropol. Soc. of Wash., 285, 832
- Food Supply, U. P. HEDRICK, 611
- Foot-and-Mouth Disease, 746
- FORBES, E. B., Chemistry, J. A. MURRAY, 486
- Foreign Students and the United States, 406
- Fossil, Human Skeleton, G. G. MACCURDY, 19; Vertebrates, C. H. STERNBERG, 134; Botanical Garden, J. M. CLARKE, 884
- FOWLER, H. W., *Hadropterus peltatus*, 939
- FRANKLIN, E. C., Chemistry, H. C. Jones, 172
- Franklin Medal, 477
- Fraternities and Scholarships, A. R. Warnock, 542
- FREEMAN, A. W., Solar Halo, 595
- FROST, E. B., Belgian Professors, 522
- FUCHS, CARL, F. E. BLAISDELL, SR., 91
- FULCHER, G. S., Stark-electric Effect, 493
- Fungi, Soil-inhabiting, H. C. McLEAN, and G. W. WILSON, 140
- Fur Seal Inquiry, R. C. OSBURN, 557
- Galileo, Dialogues, W. F. MAGIE, 637

- GARRISON, F. H., Royal Soc. Catalogue of Sci. Papers, 563; Walter Holbrook Gaskell, 802
 Gaskell on Evolution, F. H. PIKE, 805
 Geikie, J., Antiquity of Man, J. J. STEVENSON, 62
 Germplasm, E. T. REICHERT, 649
 Gifford, E., Natural Sines, G. A. MILLER, 856
 Gilbert, L. M., Psychology of Management, H. L. HOLLINGWORTH, 64
 Gill, Theodore Nicholas, 547
 Golden Mean, in Size Inheritance, R. A. EMERSON, 57; A. B. BRUCE, 58
 GOODALE, H. D., Feminized Cockerel, 594
 GOODE, J. P., Geography, J. R. Smith, 600
 Gossner, B., Crystallography, E. H. KRAUS, 28
 Grabau, A. W., Stratigraphy, J. BARRELL, 135
 Grades, Standardization of, W. C. RUEDIGER, G. N. HENNING and W. A. WILBUR, 642
 Grading of College Students, M. MEYER, 530
 "Grampus," Cruise of, H. B. BIGELOW, 881
 GRIER, N. M., Cultures of Amœba, 520
 GROAT, B. F., "Hydraulics" in Encyclopedia Britannica, 135
 Grove's Rust Fungi, J. C. ARTHUR, 934
 GUDGER, E. W., N. C. Acad. of Sci., 385; George Maregrave, 507
 Guinea-pigs, Intraperitoneal Injections in, P. G. WOOLLEY, D. CLARK and A. DEMAR, 789
- Hadropterus peltatus*, H. W. FOWLER, 939
 Haempel, P. O., Biologie, G. C. EMBODY, 277
 HALE, G. E., National Academies and Research, 907
 HALL, G. S., University Problems, 727
 HALSTED, B. D., Botany, C. E. and E. A. Bessey, 749
 Hankin, E. H., Animal Flight, F. A. L., 278
 Hankinson, T. L., Whitefish, 239
 Hamm, J., Meteorologie, R. DEC. WARD, 785
 HARRIS, F. S., Soil Conditions and Maize, 215
 HARRIS, J. A., Pearson's Tables, 598
 HARRIS, J. E., Soil Acidity, 491
 HARRIS, R. A., Deflection of the Vertical, 681
 HARRISON, R. G., Science and Practise, 571
 HARSHBERGER, J. W., Oekologie der Pflanzen, O. Drude, 314
 HARVEY, E. N., Luminous Material of Firefly, 33
 Hawkes, H. E., Algebra, C. J. KEYSER, 560
 HEADDEN, W. P., Do Azotobacter Nitrify? 379
 HEALD, F. D., Fungi, F. L. Stevens, 168
 HEDRICK, U. P., Future Food Supply, 611
 Helyar, J. P., *Didymum Xanthopus*, 791
 Hemphill, Henry, W. H. DALL, 265
 Henderson, L. J., Die Umwelt des Lebens, R. S. L., 899
 HENN, A., Indiana Univ. Expeditions, 602
 HENNING, G. N., W. C. RUEDIGER, and W. A. WILBUR, Standardization of Grades, 642
 Heredity, and Mental Traits, J. JASTROW, 555; and Environment, H. LEFFMANN, 593
 HESS, C. L. v., "Multiple Unit" System, 566
Heterodera radicicola, L. E. MELCHERS, 241
 HOLLAND, T. H., The Earth's Crust, 533
 Holland, W. J., and O. A. Peterson, Osteology, R. S. LULL, 209
 HOLLINGWORTH, H. L., Psychology of Management, L. M. Gilbert, 64
 HOLMES, S. J., Culture Medium for Tissues of Amphibiana, 32; Larval Muscle Cells, 271
- Honorary Degrees, A. E. SHIPLEY, 674
 Hopkins, L. A., and A. Ziwei, Geometry and Algebra, C. J. KEYSER, 560
 HORTON, G. D., and T. D. BECKWITH, Microorganisms in Eggs, 240
 HOSKINS, L. M., Mechanics, E. R. Maurer, 818
 HOWARD, A. D., Metamorphosis in Unionidae, 353
 HOWARD, C. W., and F. JAGER, Queen Bees, 720
 HOWE, J. L., Jones's "A New Era in Chemistry," 483; Chemistry, A. W. Stewart, 639
 Hughes, A. L., Photo-electricity, E. MERRITT, 597
 Human Remains at Rancho La Brea, J. C. MERRIAM, 198
- IDDINGS, J. P., Igneous Rocks, R. A. DALY, 710
 Iddings, J. P., Igneous Rocks, W. CROSS, 100
 Incomes of College Graduates, H. A. MILLER, 484
 Indiana Univ. Expeditions, A. HENN, 602
 Individual Differences, E. L. THORNDIKE, 753
 Ingold, L., and A. M. Kenyon, Trigonometry, C. J. KEYSER, 561
 Inheritance, Non-Mendelian, C. C. LITTLE, 904
 Interglacial Man, G. G. MACCURDY, 766
 International Chemical Institute, W. OSTWALD, 147; Oceanographic Expedition, 883
 Iowa Acad. of Sci., J. H. LEES, 142
 Ishii, Y., Geology, E. BLACKWELDER, 312
- JAGER, F., and C. W. HOWARD, Queen Bees, 720
 JASTROW, J., Heredity and Mental Traits, 555
 JENNINGS, W. L., Bachelor's Degree, 57
 Jesup, Mrs. Morris K., Bequests, 21
 John Scott Medal, 664
 JOHNSON, D. S., Montane Rain Forest, F. Shreve, 897
 Jones, H. C., Chemistry, E. C. FRANKLIN, 172; J. L. HOWE, 483
 JONES, J. C., Geology of Lake Lahontan, 827
 Jones, W., Nucleic Acids, P. A. LEVENE, 640
- K., M. Albert Lacroix, 49
 KARPINSKI, L. C., Japanese Mathematics, D. E. Smith, and Y. Mikami, 675; Roger Bacon, Essays, 894
 Katmai Eruption, G. B. RIGG, 509
 Kaye, G. W. C., X-Rays, H. A. WILSON, 351
 KEARNEY, T. H., Algerian Sahara, W. A. Cannon, 751
 KEMP, J. F., Geology, J. Park, 859
 KENNELLY, A. E., Telegraphy, W. H. Preece, and J. Sivewright, 674
 Kentucky Acad. of Sci., G. RYLAND, 178
 Kenyon, A. M., and L. Ingold, Trigonometry, C. J. KEYSER, 561
 KEPPEL, F. P., American College, C. F. Thwing, 383
 KEYES, C., University Attendance, 556; Continental Denudation, 933
 KEYSER, C. J., Problems of Science, F. Enriques, 346; Memorabilia Mathematica, R. E. Moritz, 559; Geometry and Algebra, V. Snyder, and C. H. Sisam, A. Ziwei, and A. L. Hopkins, Algebra, H. E. Hawkes, Industrial Mathematics, H. W., and A. G. F. Marsh, 560; Trigonometry, A. M. Kenyon, and L. Ingold, F. Anderegg, and E. D. Roe, Algebra, J. V. Collins, L. Couturat, Japanese Mathematics, D. E. Smith, and Y. Mikami, 561

- KIRKWOOD, J. E., Plants, C. C. CURTIS, 678
 KNIGHT, H. L., Assoc. Agric. Colleges and Exper. Stations, 864
 KOFOID, C. A., Die Strudelwürmer, P. STEINMANN, and E. BRESSLAU, 64; Sepia and Octopus, W. T. MEYER, 65; Parasiten, R. O. NEUMANN, and M. MAYER, 210
 KRAUS, E. H., Crystallography, B. GOSSNER, 28
 KROEGER, A. L., Chontal, Seri and Yuman, 448
 Kronecker, Professor Hugo, S. J. MELTZER, 441
 L., F. A., Animal Flight, E. H. HANKIN, 278
 L., R. S., Die Umwelt des Lebens, L. J. HENDERSON, 899
 L., W., Copper Handbook, W. H. WEED, 65
 LACROIX, M. ALBERT, K., 49
 LAKE LAHONTAN, Geology of, J. C. JONES, 827
 Larval Muscle Cells, S. J. HOLMES, 271
 Lassen Eruption, 49
 LEES, J. H., Iowa Acad. of Sci., 142
 LEFFMANN, H., Heredity and Environment, 593
 Lehmer, D. N., Prime Numbers, G. A. MILLER, 855
 LEIDY, J., JR., Morphology of the Bacteria, 302
 Letts, E. A., Chemistry, W. D. BANCROFT, 139
 LEVENE, P. A., Nucleic Acids, W. JONES, 640
 LEVERETT, F., Ice Age, W. B. WRIGHT, 274
 LEVINE, B. S., Cotton Fiber, 906
 LIBBY, W., The History of Science, 670
 Lighting and Efficiency of the Eye, C. E. FERREE, 84
 Lightning, Flashes, C. ABBE, 98; C. D. PERRINE, 513
 LILLIE, F. R., Marine Biological Laboratory, 229
 LILLIE, R. S., Vitalism versus Mechanism, 840
 Little, A. G., Roger Bacon's Essays, L. C. KARPINSKI, 894
 LITTLE, C. C., Non-Mendelian Inheritance, 904
 LLOYD, F. E., Rubber, R. H. LOCK, 411
 LOEB, J., Spermatozoon and Egg, 316; The Unfertilized Egg and Ultra-Violet Rays, 680
 LOVEJOY, A. O., Assoc. of Univ. Professors, 744
 LUCAS, C. P., Address of President to Geog. Sect. British Assoc., 425
 LULL, R. S., Osteology, W. J. HOLLAND, and O. A. Peterson, 209; Die Vorzeitlichen Säugetiere, O. Abel, 787
 LUTZ, O., *Jatropha urens*, 609
 M., J. H., Stanley's Wireless Telegraphy, 936
 MCADIE, A., Weather and Climate of Chicago, H. J. COX and J. H. ARMINGTON, 525
 McCLENDON, J. F., Permeability of Egg, 70, 214
 MACCURDY, G. G., Fossil Human Skeleton, 19; Man of Piltdown, 158; Essays and Studies presented to William Ridgeway, E. C. QUIGGIN, 450; Interglacial Man, 766
 MCLEAN, H. C., and G. W. WILSON, Soil-inhabiting Fungi, 140
 MAGIE, W. F., Dialogues, Galileo Galilei, 637
 Magnetic Observations, L. A. BAUER, 140
 Major, D. R., Psychology, R. S. WOODWORTH, 821
 MARCRAVE, George, E. W. GUDGER, 507
 Marine Biol. Laboratory, F. R. LILLIE, 229; H. M. SMITH, 230; Beaufort Biol. Sta., L. RADCLIFFE, 413
 Marsh, H. W., and A. G. F. Marsh, Mathematics, C. J. KEYSER, 560
 Martin, E. W., Birds of the Latin Poets, H. C. OBERHOLSER, 896
 MATAUSCH, I., Preparation of Spiders, 710
 Mathematical Soc., Amer., F. N. COLE, 831
 Mathematician in Modern Physics, C. BARUS, 721
 Mathematics, Uses for, S. G. BARTON, 697
 MATTHEW, W. D., Time Ratios in Evolution, 232
 Maurer, E. R., Mechanics, L. M. HOSKINS, 818
 Mayer, M., and R. O. NEUMANN, Parasiten, C. A. KOFOID, 210
 Measurement of Fecundity, R. PEARL, 383
 Medical Schools, S. J. MELTZER, 620
 Medicine and Civilization, V. C. VAUGHAN, 1
 Melanism, and Food, W. T. COX, 99
 MELCHERS, L. E., Canada Thistle, 241
 Mellor, J. W., Chemistry, D. J. DEMOREST, 314
 MELTZER, S. J., Professor Hugo Kronecker, 441; Medical Schools, 620
 MENDEL, L. B., Physiology, H. WINTERSTEIN, 28; Allen's Commercial Analysis, 103
 MERRIAM, C. H., Cal. Museum of Vert. Zool., 703
 MERRIAM, J. C., Human Remains at Rancho La Brea, 198; Tertiary in California, 643
 MERRITT, E., Photo-electricity, H. S. Allen, 597; A. L. HUGHES, 597
 Metamorphosis, A. D. HOWARD, 353; in Frog Larvae, M. MORSE, 793
 METCALF, M. M., Mutation, 26
 Meteorology, Notes on, C. F. BROOKS, 29, 822
 MEYER, M., Grading, 530
 Meyer, W. T., Sepia and Octopus, C. A. KOFOID, 65
 Microorganisms in Eggs, T. D. BECKWITH and G. D. HORTON, 240
 MIDDLE WEST, Composition and Thought, 344
 MIKAMI, Y., and D. E. SMITH, Japanese Mathematics, C. J. KEYSER, 561; L. C. KARPINSKI, 675
 MILLER, A. M., Evolution and Mutations, 636
 MILLER, G. A., Trigonometry, E. J. WILCZYNSKI, 410; Equations, L. E. DICKSON, 410; Prime Numbers, D. N. LEHMER, 855; Natural Sines, E. GIFFORD, 856
 MILLER, H. A., Incomes of College Graduates, 484
 MILLIKAN, R. A., Electricity, J. J. THOMSON, 174; Matter, J. S. AMES, 485; Molecular Physics, J. A. CROWTHER, 716
 MILLIS, J., Gravity, 207
 MINOT, Charles Sedgwick, H. H. DONALDSON, 926
 Missouri Botanical Garden, 375
 MORE, L. T., Perception, Physics and Reality, C. D. BROAD, 747
 MORITZ, R. E., Memorabilia Mathematica, C. J. KEYSER, 559
 Morphology of the Bacteria, J. LEIDY, JR., 302
 MORSE, E. S., Avalanche of Rocks, 241
 MORSE, M., Metamorphosis in Frog Larvae, 793
 MOTE, D. C., Ascaris Suum in Sheep, 216
 "Multiple Unit" System, C. L. V. HESS, 566
 MURRAY, J. A., Chemistry, E. B. FORBES, 486
 Mushroom Intoxication, A. E. VERRILL, 408
 Mutation, M. M. METCALF, 26; H. DE VRIES, 77; The Origin of, X. Y., 520
 National, Academy of Sciences, Proceedings, 664; Chicago Meeting, 768; Conference Committee, Standards of Colleges and Schools, F. C. FERRY, 565; Education Assoc., J. F. WOODHULL, 601; Academies and Research, G. E. HALE, 907

- Neumann, R. O., and M. Mayer, Parasiten, C. A. KOFOID, 210
New Orleans Acad. of Sci., R. S. COCKS, 178
NICHOLS, J. T., Home Aquaria, R. C. OSBURN, 278
Nitrates, Cheap, W. W. STRONG, 899
Nomenclature, Chemical, H. B. NORTH, 59;
Zoological, C. W. STILES, 66; Fiat, O. F. COOK, 272
NORTH, H. B., Chemical Nomenclature, 59
North Carolina Acad. of Sci., E. W. GUDGER, 385
NOYES, H. A., Plant Growth, 792
NOYES, W. A., Religious Training at a University, 27

O., G. B., Apparatus Repair, 892
OBERHOLSER, H. C., Birds of the Latin Poets, E. W. MARTIN, 896
O'GARA, P. J., Alfalfa Crown Gall, 27
OLIVER, W. W., Human Erythrocytes, 645
OSBURN, R. C., Fur Seal Inquiry, 557
Osburn, R. C., Home Aquaria, J. T. NICHOLS, 278
OSTERHOUT, W. J. V., Vitality and Injury, 488
OSTWALD, W., Internat. Chem. Inst., 147

Pacific Fisheries Society, J. N. COBB, 306
PALACHE, C., Crystallography, T. L. WALKER, 599
Panama Exposition, 477
Park, J., Geology, J. F. KEMP, 859
PARSONS, C. L., Amer. Chem. Soc., 34, 73, 110
PASSANO, L. M., Educational Costs, 39
Patent Medicines in Great Britain, 374
PEARL, R., Measurement of Fecundity, 383
Pearson's Tables, J. A. HARRIS, 598
Peck, Charles Horton, C. E. BESSEY, 48
PEMBER, F. R., Cut Rose Blooms, 248
Permeability of Egg, J. F. McCLENDON, 70, 214
PERRINE, C. D., Effect of Lightning, 513
PETERS, C. A., Chemistry in the Agric. College, 674
Peterson, O. A., and W. J. Holland, Osteology, R. S. LULL, 209
PETERSON, W., Phosphate Deposits, 755
PIKE, F. H., Gaskell on Evolution, 805
Piltdown Man, G. G. MACCURDY, 158
Plant Growth, H. A. NOYES, 792
Polar Wanderings, J. BARRELL, 333
Population, Estimates of, 92
Porter, A., and H. B. Fantham, Animal Parasites, G. N. CALKINS, 105, 814
Preece, W. H., and J. Sivewright, Telegraphy, A. E. KENNELLY, 674
Primitive Character, E. IM THURM, 495
Professor and Institution, H. B. ALEXANDER, 60
PROSSER, C. S., Aims and Objects of Sigma Xi, 249

Quiggin, E. C., Essays and Studies presented to William Ridgeway, G. G. MACCURDY, 450
Quotations, 208, 746, 853

RADCLIFFE, L., Beaufort Biological Station, 413
Radiation, Ultra-Violet, Dangers to the Eye, F. H. VERHOEFF and L. BELL, 452
REAGAN, A. B., Northern Lights in Summer, 381
Reed, H. S., Bacteriology, H. W. CONN, 820
Regan, C. T., Antarctic Expedition, W. H. DALL, 753
REICHERT, E. T., The Germplasm as a Stereochemical System, 649

Research, Needs of, R. S. WOODWARD, 217; and the Universities, W. E. CASTLE, 447; and Teaching, J. MCK. CATTELL, 628; T. D. A. COCKERELL, 891; and Industry, R. F. BACON, 871
Resuscitation, Methods of, 663
RICH, J. L., Cumulus Clouds, 851
RIES, H., and T. L. WATSON, Geology, W. H. EMMONS, 898
RIGG, G. B., Katmai Eruption, 509
River Water, W. W. BROWNE, 863
ROBERTSON, T. B., Chemie, R. BEUTNER, 786
Rockefeller Institute, 20; 161
Roe, E. D., and F. Anderegg, Trigonometry, C. J. KEYSER, 561
Royal Society Papers, F. H. GARRISON, 563
RUEDIGER, W. C., G. N. HENNING, and W. A. WILBUR, Standardization of Grades, 642
RYLAND, G., Kentucky Acad. of Sci., 178

S., C. C., Irritability, M. Verworn, 351
Salisbury, R. D., and T. C. Chamberlin, Geology, H. L. FAIRCHILD, 816
SANFORD, F., Killing Tree Scale, 519
Sanitation in Vera Cruz, 405
SAUNDERS, WILLIAM, F. T. SHUTT, 700
Savage, W. G., Bacteriology of Food and Water, C. E. A. WINSLOW, 715
SCHIEDT, R. C., Animal Pigmentation, 279
Science, and Practise, R. G. HARRISON, 571; History of, W. LIBBY, 670; Outlook for, R. D. CARMICHAEL, 833
Scientific Notes and News, 21, 51, 94, 130, 162, 204, 235, 266, 308, 340, 376, 407, 444, 478, 514, 550, 588, 631, 655, 704, 739, 779, 811, 842, 886, 928; Books, 28, 62, 100, 135, 168, 209, 241, 274, 312, 346, 381, 410, 448, 522, 559, 596, 637, 674, 710, 747, 785, 816, 855, 894; Workers Union of, 208; Journals and Articles, 383, 487, 821
Scudder, H., Electrical Conductivity, E. H. ARCHIBALD, 29
Sealing, Russian versus American, G. A. CLARK, 736
Septic Sore Throat, D. J. DAVIS, 717
SHIPLEY, A. E., Honorary Degrees, 674
Shreve, F. A., Montane Rain Forest, D. S. JOHNSON, 897
Shrew, Short-tailed, H. L. BABCOCK, 526
SHUFELDT, R. W., Statue to Professor Baird, 521
SHUTT, F. T., William Saunders, 700
Sierra Nevada Foothills, R. E. DICKERSON, 67
Sigma Xi, Aims of, C. S. PROSSER, 249
SISAM, C. H., and V. Snyder, Geometry, C. J. KEYSER, 560
Sivewright, J., and W. H. Preece, Telegraphy, A. E. KENNELLY, 674
Skates, Nerve Centers in, U. DAHLGREN, 862
Smith, A. W., Electrical Measurements, F. BEDELL, 820
Smith, D. E., and Y. MIKAMI, Japanese Mathematics, C. J. KEYSER, 561; L. C. KARPINSKI, 675
Smith, E. F., Bacteria and Plant Diseases, C. E. BESSEY, 715
SMITH, H. I., Museum of Sounds, 273
SMITH, H. M., Marine Biological Laboratory, 230; A New Filefish, 815
Smith, J. P., Middle Triassic Faunas, W. H. DALL, 522
Smith, J. R., Geography, J. P. GOODE, 600

- SNOW, L. M., Osmometer, 208
 Snyder, V., and C. H. Sisam, Geometry, C. J. KEYSER, 560
 Societies and Academies, 177, 285, 455, 831
 Soil, Conditions, and Maize, F. S. HARRIS, 215; Acidity, E. TRUOG, 246; J. E. HARRIS, 491
 SOLETSKY, D., and W. W. BROWNE, Semi-permeable Capsules, 176
 Sounds, Museum of, H. I. SMITH, 273
 SPAULDING, P., Botan. Soc. of Wash., 794
 Special Articles, 32, 67, 107, 140, 174, 214, 246, 283, 316, 353, 383, 417, 452, 488, 526, 566, 606, 643, 680, 717, 753, 789, 824, 862, 904, 939
 Spermatozoon and Egg, J. LOEB, 316
 Spiders, Preparation of, I. MATAUSCH, 710
 Stanford Univ. Med. Sch., V. C. VAUGHAN, 126
 Stanley, R., Wireless Telegraphy, J. H. M., 936
 Stark-electric Effect, G. S. FULCHER, 493
 Steinmann, P., and E. Bresslau, Die Strudelwürmer, C. A. KOFOID, 64
 STERNBERG, C. H., Fossil Vertebrates, 134
 Stevens, F. L., Fungi, F. D. HEALD, 168
 STEVENSON, J. J., Antiquity of Man, J. Geikie, 62
 Stewart, A. W., Chemistry, J. L. HOWE, 639
 STEWART, G. W., The Atom, 661
 STILES, C. W., Zoological Nomenclature, 66
 STONE, W., Bird Genera, Types, 26
 STRONG, W. W., X-Ray Diffraction Patterns, 709; Oxidation of Nitrogen, 899
 Sunflower Problems, T. D. A. COCKERELL, 283, 708
 SURFACE, H. A., Cyanide of Potassium in Trees, 852
 TALMAN, C. F., Atmospheric Phenomena, 745
 Telescope, 72-inch, for Canada, 203
 Tenterton Steeple, M. BRAAM, 893
 Terrestrial Radiation, F. W. VERY, 417
 Tertiary in California, J. C. MERRIAM, 643
 Textile Fibers, N. A. COBB, 683
 Thomson, J. J., Electricity, R. A. MILLIKAN, 174
 THORNDIKE, E. L., Individual Differences, 753
 Thorpe, E., Chemistry, W. R. WHITNEY, 562
 THURM, E., IM., Primitive Character, 495
 Thwing, C. F., American College, F. P. KEPPEL, 383
 Time Ratios in Evolution, W. D. MATTHEW, 232
 Tin Disease and Polar Exploration, B. T. BROOKS, 166
 TOWNSEND, C. H. T., Lizards and Verruga, 212
 TROUTON, F. T., Address of President to the Math. and Physical Sci. Sect. of the British Assoc., 457
 TRUE, A. C., Address of President of Assoc. Amer. Agric. Colleges and Exp. Stations, 757
 TRUOG, E., Soil Acidity, 246
 TWENHOFF, W. H., Vertebrates, 26
 University, and Educational News, 25, 55, 97, 133, 165, 207, 239, 279, 311, 343, 378, 408, 446, 481, 518, 553, 592, 635, 669, 707, 743, 781, 813, 851, 890, 932; Religious Training at, W. A. NOYES, 27; The Spirit of, M. H. FISCHER, 464; Attendance, C. KEYSER, 556; Problems, G. S. HALL, 727; Professors, Assoc. of, A. O. LOVEJOY, 744; Registration Statistics, J. C. BURG, 919
 VAUGHAN, V. C., Medicine and Civilization, 1; Stanford Univ. Med. School, 126; Education, 685
 Vegetation of Sand Hills, H. C. COWLES, 788
 VERHOEFF, F. H., and L. BELL, Ultra-Violet Radiation, 452
 VERRILL, A. E., Mushroom Intoxication, 408
 Verrill, A. E., Starfishes, H. L. CLARK, 523
 Verruga, and Lizards, C. H. T. TOWNSEND, 212
 Vertical, Lunar and Solar Deflection of the, R. A. HARRIS, 631
 Verworn, M. Irritability, C. C. S., 351
 VERY, F. W., Terrestrial Radiation, 417
 Vitalism versus Mechanism, R. S. LILLIE, 840
 Vitality and Injury, W. J. V. OSTERHOUT, 488
 VIRES, H. DE, Mutation, 77
 Walker, T. L., Crystallography, C. PALACHE, 599
 WALL, J. G., Flood Prevention, 44
 WARD, R. DEC., Meteorologie, J. Hann, 785
 WARNOCK, A. R., Fraternities and Scholarships, 542
 WARREN, G. F., Statistics of Crops, 121
 Watson, T. L., and H. Ries, Geology, W. H. EMMONS, 898
 Weed, W. H., Copper Handbook, W. L., 65
 Weismann, A., Heredity, W. E. CASTLE, 245
 WHIPPLE, G. C., Public Health Education, 581
 Whipple, G. C., Microscopy of Drinking Water, C.-E. A. WINSLOW, 448
 WHITNEY, W. R., Chemistry, E. Thorpe, 562
 WILBUR, W. A., W. C. RUEDIGER, and G. N. HENNING, Standardization of Grades, 642
 Wilczynski, E. J., Trigonometry, G. A. MILLER, 410
 WILLIAMS, S. R., Earth's Magnetic Field, 606
 WILSON, H. A., X-Rays, G. W. C. KAYE, 351
 Winchell, Newton Horace, J. M. CLARKE, 127
 WINSLOW, C.-E. A., Microscopy of Drinking Water, G. C. Whipple, 448; Bacteriology of Food and Water, W. G. Savage, 715
 Winterstein, H., Physiology, L. B. MENDEL, 28
 WINTON, W. M., Sexes in *Phrynosoma*, 311; Horned Lizards, 784
 Wisconsin Acad. of Sci., A. BEATTY, 177
 WOODHULL, J. F., Nat. Educ. Assoc., 601
 WOODWARD, R. S., Needs of Research, 217
 WOODWORTH, R. S., Psychology, D. R. Major, 821; The College Curriculum, 315
 WOOLLEY, P. G., D. CLARK and A. DEMAR, Intra-peritoneal Injections in Guinea-pigs, 789
 Wright, W. B., Quaternary Ice Age, F. LEVERETT, 274
 X-Rays, and Crystalline Structure, W. H. BRAGG, 795; Diffraction Patterns of, W. W. STRONG, 709
 X. Y., The Origin of Mutation, 520
 Ziwei, A., and L. A. Hopkins, Geometry and Algebra, C. J. KEYSER, 560