

## INDEX.

- Address, Presidential, S. Newcomb, 187.  
 Aley, R. J., 127.  
 Algebra, Weber's, J. Pierpont, 200.  
 ——— of Quantics, Elliott's, H. S. White, 545.  
 Allen, J., 127.  
 American Association for the Advancement of Science, The Detroit Meeting of the, J. McMahon, 48.  
 ——— Association for the Advancement of Science, 554.  
 ——— Mathematical Society, Fourth Summer Meeting, F. N. Cole, 1; October Meeting, F. N. Cole, 87; Fourth Annual Meeting, F. N. Cole, 175; February Meeting, F. N. Cole, 291; April Meeting, F. N. Cole, 415; Evanston Meeting of Chicago Section, T. F. Holgate, 182; April Meeting of Chicago Section, T. F. Holgate, 363.  
 ——— Mathematical Society, Election of Officers, 176; Statistics, 239; List of Members, 126, 284; Chicago Section, 284; Fifth Summer Meeting, 409; Colloquium, 409; Amendment of By-Laws, 415.  
 Analysis and Mathematical Physics, The Relations of, H. Poincaré, translated by C. J. Keyser, 247.  
 Annuaire du Bureau des Longitudes, E. W. Brown, 353.  
 Annual List of Published Papers, Seventh, 561.  
 ——— Meeting of the American Mathematical Society, The Fourth, F. N. Cole, 175.  
 April meeting of the American Mathematical Society, The, F. N. Cole, 415.  
 ——— Meeting of the Chicago Section, The, T. F. Holgate, 363.  
 Arithmetic, Limitations of Greek, H. E. Hawkes, 530.  
 Authors of Articles in the Bulletin :  
     Beman, W. W., 274, 551.  
     Bôcher, M., 256, 295, 365, 424, 448.  
     Bouton, C. L., 313.  
     Brown, E. W., 73, 236, 353.  
     Campbell, J. E., 407.  
     Chessin, A. S., 93.  
     Cole, F. N., 1, 87, 175, 291, 415.  
     Davis, E. W., 529.  
     Dickson, L. E., 196, 382, 495.  
     Fine, H. B., 275.  
     Fiske, T. S., 237, 278.  
     Hardcastle, F., 390.  
     Harkness, J., 277.  
     Hathaway, A. S., 54.  
     Hawkes, H. E., 530.  
     Holgate, T. F., 63, 182, 363.  
     Hutchinson, J. I., 327.  
     Keyser, C. J., 247.  
     Lovett, E. O., 58, 59, 97, 155, 349, 402, 452, 515, 520, 552.  
     McMahon, J., 48.  
     Macaulay, W. H., 340.  
     Macaulay, F. S., 540.  
     Mackenzie, A. S., 276.  
     Maddison, I., 234.  
     Miller, G. A., 135, 140, 323, 510.  
     Moore, E. H., 11.  
     Morley, F., 23, 550.  
     Newcomb, S., 187.  
     Newson, H. B., 107.  
     Osgood, N. F., 45, 417.  
     Pierpont, J., 200, 332, 535.  
     Poincaré, H., 247.  
     Porter, M. B., 274.  
     Saurel, P., 329.  
     Scott, C. A., 121, 167, 260.  
     Snyder, V., 28, 68, 144, 441.  
     Starkweather, G. P., 524.  
     Strong, W. M., 443.  
     Thompson, H. D., 355, 405.  
     Van Vleck, E. B., 426.  
     Webster, A. G., 438.  
     White, H. S., 17, 258, 376, 545.  
     Whittemore, J. K., 389.  
     Ziwet, A., 346.  
 Baker, H. F., 556.  
 Bass's (E. W.) Differential Calculus, T. S. Fiske, 280.  
 Belgian Academy of Sciences, Prizes, 169.

- Beman, W. W., 356.  
 Beman (W. W.) and Smith's (D. E.) Famous Problems of Elementary Geometry, C. A. Scott, 167.  
 Beman (W. W.) : Euler's Use of  $i$  to Represent an Imaginary, 274, 551. Beneke Prize, 410  
 Berlin University of, 32, 488.  
 Bessel's Functions, Note on the Roots of, M. B. Porter, 274.  
 Bibliography, 35, 83, 128, 170, 242, 286, 357, 411, 492, 558.  
 Biquadratic, A Solution of the, by Binomial Resolvents, G. P. Starkweather, 524.  
 Bôcher (M.) : Niewenglowski's Geometry, 448.  
 ——— The Roots of Polynomials which Satisfy Certain Linear Differential Equations of the Second Order, 256.  
 ——— Note on Poisson's Integral, 424.  
 ——— The Theorems of Oscillation of Sturm and Klein (First Paper), 295.  
 ——— The Theorems of Oscillation of Sturm and Klein (Second Paper), 365.  
 Bouton (C. L.) : Some Examples of Differential Invariants, 313.  
 Brioschi, F., 240, 285.  
 British Association, Toronto Meeting, 80.  
 Brown, E. W., 556.  
 Brown (E. W.) : Annuaire du Bureau des Longitude, 353.  
 ——— Lamb's Hydrodynamics, 73.  
 ——— Schubert's Five Place Tables, 236.  
 ——— Gundelfinger's Tables for Roots of Trinomial Equations, 236.  
 Bruce Medal, 241.  
 Burrell, E. L., 127.  
 Butts, W. H., 556.  
 Calculus, Recent Text-books of the, T. S. Fiske, 237, 278.  
 Campbell (J. E.) : Note on the Theory of Continuous Groups, 407.  
 Cantor, M., 555.  
 Carré et Naud, 169.  
 Certain Classes of Point Transformations in the Plane, E. O. Lovett, 97.  
 Cesàro, E., 284.  
 Chessin, A. S., 555.  
 Chessin (A. S.) : Note on Hyperelliptic Integrals, 93.  
 Chicago Section, 284.  
 ——— Section, The Evanston Meeting of the, T. F. Holgate, 182.  
 ——— Section, The April Meeting of the, T. F. Holgate, 363.  
 ——— University, 240, 490.  
 Chree, C., 491.  
 Christiansen's (C.) Elements of Theoretical Physics, Magie's Translation, A. S. Mackenzie, 276.  
 Circular Transformations, Continuous Groups of, H. B. Newson, 107.  
 ——— Parts, Note on Napier's Rules of, E. O. Lovett, 552.  
 Coaxial Circles, A Geometrical Locus Connected with a System of, T. F. Holgate, 63.  
 Cole (F. N.) : Reports of Meetings of the American Mathematical Society: Fourth Summer Meeting, 1; October Meeting, 87; Fourth Annual Meeting, 175; February Meeting, 291; April Meeting, 415.  
 Collected Papers, Plücker's, C. A. Scott, 121.  
 Collège de France, 168.  
 Collineations in a Plane with Invariant Quadric or Cubic Curves, H. S. White, 17.  
 Colloquium, American Mathematical Society, 409, 554.  
 Columbia University, 489.  
 Commutator Groups, On the, G. A. Miller, 135.

- Concerning Regular Triple Systems, E. H. Moore, 11.  
 Condition that the Line Common to  $N-1$  Planes in an  $N$  Space May  
 Pierce a Given Quadric Surface in the Same Space, V. Snyder, 68.  
 Congress of Mathematicians at Zürich, The International, W. F. Osgood,  
 45.  
 ——— of Mathematical Sciences, Paris, 410.  
 Conics, Infinitesimal Transformations of Concentric, E. O. Lovett, 520.  
 Construction of Special Regular Reticulations on a Closed Surface, The, H.  
 S. White, 376.  
 Contact Transformations, Note on, E. O. Lovett, 402.  
 Continuity of Space Necessary to Euclid's Geometry?, Is, W. M. Strong,  
 443.  
 Continuous Groups, Note on the Fundamental Theorems of Lie's Theory  
 of, E. O. Lovett, 59.  
 ——— Groups of Circular Transformations, H. B. Newson, 107.  
 ——— Groups, Note on the Theory of, J. E. Campbell, 407.  
 Cornell University, 239, 557.  
 Corrections, 283, 560.  
 Cottier, J., 34.  
 Cremona, L., 285.  
 Cubic Curve, Inflexional Lines, Triplets, and Triangles Connected with  
 the Plane, H. S. White, 258.  
 Curves, On the Intersections of Plane, C. A. Scott, 260.  
 ——— On the Intersections of Plane, F. S. Macaulay, 540.  
 ——— Schell's Tortuous, A. Ziwet, 346.  
 Curvilinear Coördinates, Note on Stokes's Theorem in, A. G. Webster,  
 438.  
 Darwin, G. H., 491, 555.  
 Davis (E. W.) : Note on Special Regular Reticulations, 529.  
 Denis, B., 127.  
 Detroit Meeting of the American Association for the Advancement of Sci-  
 ence, The, J. McMahon, 48.  
 Dickson, L. E., 34.  
 Dickson (L. E.) : Orthogonal Group in a Galois Field, 196.  
 ——— Systems of Simple Groups Derived from the Orthogonal Group,  
 382.  
 ——— The Structure of the Hypoabelian Groups, 495.  
 Differential Expressions in Hexaspherical Coördinates, Geometry of Some,  
 V. Snyder, 144.  
 ——— Equations, Gourat's Partial, E. O. Lovett, 452.  
 ——— Equations, Lie's, E. O. Lovett, 155.  
 ——— Equations, Murray's, H. B. Fine, 275.  
 ——— Equations, Page's, E. O. Lovett, 349.  
 ——— Equations of the Second Order, The Roots of Polynomials which  
 Satisfy Certain Linear, M. Bôcher, 256.  
 ——— Invariants, Some Examples of, C. L. Bouton, 313.  
 Dodgson, C. L., 241.  
 Doolittle, A., 170.  
 Dowling, L. W., 556.  
 Early History of Galois's Theory of Equations, J. Pierpont, 332.  
 Election of Officers of the Society, 176.  
 Elliott's (E. B.) Algebra of Quantics, H. S. White, 545.  
 Errata, 283, 560.  
 Esson, W., 34.  
 Euclid's Geometry?, Is Continuity of Space Necessary to, W. M. Strong,  
 443.  
 Euler's Use of  $i$  to Represent an Imaginary, W. W. Beman, 274, 551.  
 Evanston Meeting of the Chicago Section, The, T. F. Holgate, 182.

- Example of a Single-Valued Function with a Natural Boundary, Whose Inverse is also Single-Valued, W. F. Osgood, 415.
- Examples of Differential Invariants. Some, C. L. Bouton, 313.
- Extension of Sylow's Theorem, On an, G. A. Miller, 323.
- Factors, Note on Integrating, P. Saurel, 329.
- Faculté des Sciences, 127.
- Famous Problems of Elementary Geometry, Beman and Smith's, C. A. Scott, 167.
- February Meeting of the American Mathematical Society, The, F. N. Cole, 291.
- Fine (H. B.): Murray's Differential Equations, 275.
- Fisher's (I.) Infinitesimal Calculus, T. S. Fiske, 237.
- Fiske (T. S.): Recent Text-books of the Calculus, 237, 278.
- Focal Properties of Surfaces of the Second Order, Staude's, H. B. Thompson, 405.
- Fontené, G., 284.
- Forsyth, A. R., 169.
- Four-Dimensional Space, Quaternions as Numbers of, A. S. Hathaway, 54.
- French Academy of Sciences, 284.
- Frost, E. B., 555.
- Frost, P., 557.
- Function with a Natural Boundary, Example of a Single-Valued, Whose Inverse is also Single-Valued, W. F. Osgood, 417.
- Functions, Note on the Roots of Bessel's, M. B. Porter, 274.
- of Several Variables, Maxima and Minima of, J. Pierpont, 535.
- Galois Field, Orthogonal Group in a, L. E. Dickson, 196.
- Galois' Theory of Equations, Early History of, J. Pierpont, 332.
- Gauss, C. F., 554.
- Gauthier-Villars, J. A., 356.
- Generating Function for the Number of Permutations with an Assigned Number of Sequences, A. F. Morley, 23.
- Geometrical Locus Connected with a System of Coaxial Circles, A. T. F. Holgate, 63.
- Geometry, Famous Problems of Elementary, Beman and Smith's, C. A. Scott, 167.
- for Technical Schools and Colleges, Analytic, Lambert's, I. Madison, 234.
- Hadamard's, F. Morley, 550.
- Is Continuity of Space Necessary to Euclid's, W. M. Strong, 443.
- Koenigs' Line, V. Snyder, 28.
- Niewenglowski's, M. Bôcher, 448.
- of Some Differential Expressions in Hexaspherical Coördinates, V. Snyder, 144.
- Gérard, L., 284.
- Gillespie, W., 241.
- Glazebrook, R. T., 491.
- Göttingen, University of, 81, 168, 488.
- Gould's (E. S.) Primer of the Calculus, T. S. Fiske, 237.
- Goursat's (E.) Partial Differential Equations, E. O. Lovett, 452.
- Greek Arithmetic, Limitations of, H. E. Hawkes, 530.
- Group in a Galois Field, Orthogonal, L. E. Dickson, 196.
- Groups, Derived from the Orthogonal Group, Systems of Simple, L. E. Dickson, 332.
- Note on the Fundamental Theorems of Lie's Theory of Continuous, E. O. Lovett, 59.
- Note on the Theory of Continuous, J. E. Campbell, 407.
- of Circular Transformations, Continuous, H. B. Newson, 107.
- On the Commutator, G. A. Miller, 135.

- On the Hamilton, G. A. Miller, 510.  
 ——— that do not Contain the Alternating Group, On the Limit of Transitivity of the Multiply Transitive Substitution, G. A. Miller, 140.  
 ——— Some Observations on the Modern Theory of Point, F. Hardcastle, 390.  
 ——— The Structure of the Hypoabelian, L. E. Dickson, 495.  
 Gundelfinger's (S.) Tables for Calculating the Real Roots of all Trinomial Equations, E. W. Brown, 236.  
 Hadamard's (J.) Geometry, F. Morley, 550.  
 Hall's (W. S.) Differential and Integral Calculus, T. S. Fiske, 278.  
 Hamilton Groups, On the, G. A. Miller, 510.  
 Hancock, H., 127.  
 Hardcastle (F.): Some Observations on the Modern Theory of Point Groups, 390.  
 Harkness (J.): Osgood's Introduction to Infinite Series, 277.  
 Harvard University, 490.  
 Hathaway (A. S.): Quaternions as Numbers of Four-Dimensional Space, 54.  
 Hawkes (H. E.): Limitations of Greek Arithmetic, 530.  
 Hayes, E., 127.  
 Heffter, L., 127.  
 Hermite, C., 169.  
 Herrman, A., 285, 356.  
 Hexagon, On the Steiner Points of Pascal's, V. Snyder, 441.  
 Hexaspherical Coordinates, Geometry of Some Differential Expressions in, V. Snyder, 144.  
 Hilbert, D., 168.  
 Hill, G. W., 410, 555.  
 History of Galois' Theory of Equations, Early, J. Pierpont, 332.  
 Holden, E. S., 170.  
 Holgate, T. F., 555.  
 Holgate (T. F.): A Geometrical Locus Connected with a System of Coaxial Circles, 63.  
 ——— The Evanston Meeting of the Chicago Section, 182.  
 ——— The April Meeting of the Chicago Section, 363.  
 Huntingdon, E. V., 34.  
 Hutchinson (J. I.): Note on the Tetrahedroid, 327.  
 Hydrodynamics, Lamb's, E. W. Brown, 73.  
 Hyperelliptic Integrals, Note on, A. S. Chessin, 93.  
 Hyperspace, The Philosophy of, S. Newcomb, 187.  
 Hypoabelian Groups, The Structure of the, L. E. Dickson, 495.  
 Imaginary, Euler's Use of  $i$  to Represent an, W. W. Beman, 274, 551.  
 Index, 565.  
 Infinite Series, Osgood's Introduction to, J. Harkness, 277.  
 Infinitesimal Projective Transformation, Note on the, E. O. Lovett, 515.  
 ——— Transformations of Concentric Conics, E. O. Lovett, 520.  
 Inflexional Lines, Triplets, and Triangles Associated with the Plane Cubic Curve, H. S. White, 258.  
 Integral, Note on Poisson's, M. Bôcher, 424.  
 Integrals, Note on Hyperelliptic, A. S. Chessin, 93.  
 Integrating Factors, Note on, P. Saurel, 329.  
 International Congress of Mathematicians at Zürich, The, W. F. Osgood, 45.  
 Intersections of Plane Curves, On the, C. A. Scott, 260.  
 ——— of Plane Curves, On the, F. S. Macaulay, 540.  
 Invariant Quadric or Cubic Curves, Collineations in a Plane with, H. S. White, 17.  
 Invariants of  $n$  Points, Note on, E. O. Lovett, 58.

- Some Examples of Differential, C. L. Bouton, 313.  
 Is Continuity of Space Necessary to Euclid's Geometry?, W. M. Strong, 443.  
 Jablonowski Society Prizes, 409.  
 Johns Hopkins University, 557.  
 Keeler, J. E., 410.  
 Kelsey, H. M., 127.  
 Kendall, E. O., 491.  
 Keyser (C. J.): The Relations of Analysis and Mathematical Physics, Translation of Poincaré's Zürich Address, 247.  
 Klein, F., 33, 83, 168, 234, 235, 356, 357.  
 Klein's (F.) Famous Problems of Elementary Geometry, Beman and Smith's Translation, C. A. Scott.  
 Klein, The Theorems of Oscillation of Sturm and, (First Paper), M. Bôcher, 295.  
 —— The Theorems of Oscillation of Sturm and, (Second Paper), M. Bôcher, 365.  
 Kochler, K. F., 285.  
 Koenigs' (G.) Line Geometry, V. Snyder, 28.  
 Lamb's (H.) Hydrodynamics, E. W. Brown, 73.  
 Lambert, P. A., 34.  
 Lambert's (P. A.) Analytic Geometry for Technical Schools and Colleges, I. Maddison, 234.  
 Laugel, L., 356, 555.  
 Leipzig, University of, 81, 489.  
 Lie, S., 234, 556.  
 Lie's Theory of Continuous Groups, Note on the Fundamental Theorems of, E. O. Lovett, 59.  
 —— Differential Equations, E. O. Lovett, 155.  
 Life Membership, American Mathematical Society, 415.  
 Limit of Transitivity of the Multiply Transitive Substitution Groups that do not Contain the Alternating Group, On the, G. A. Miller, 140.  
 Limitations of Greek Arithmetic, H. E. Hawkes, 530.  
 Line Common to  $N-1$  Planes in an  $N$  Space May Pierce a Given Quadric Surface in the Same Space, Condition that, V. Snyder, 68.  
 Line Geometry, Koenigs', V. Snyder, 28.  
 Linear Differential Equations of the Second Order, The Roots of Polynomials which Satisfy Certain, M. Bôcher, 256.  
 Liouville. R., 234.  
 List of Members, American Mathematical Society, 126, 284.  
 Lobatschewsky Prize, 284.  
 London Mathematical Society, Annual Meeting, 126.  
 Love, A. E. H., 556.  
 Love's (A. E. H.) Theoretical Mechanics, W. H. Macaulay, 340.  
 Lovett, E. O., 241, 357.  
 Lovett (E. O.): Certain Classes of Point Transformations in the Plane, 97.  
 —— Goursat's Partial Differential Equations, 452.  
 —— Infinitesimal Transformations of Concentric Conics, 520.  
 —— Lie's Differential Equations, 155.  
 —— Note on Contact Transformations, 402.  
 —— Note on Napier's Rules of Circular Parts, 552.  
 —— Note on the Fundamental Theorems of Lie's Theory of Continuous Groups, 59.  
 —— Note on the Infinitesimal Projective Transformation, 515.  
 —— Note on the Invariants of  $n$  Points, 58.  
 —— Page's Differential Equations, 349.  
 Lyman, E. A., 556.

- McMahon, J., 410.  
 McMahon (J.) : The Detroit Meeting of the American Association for the Advancement of Science, 48.  
 Macaulay (F. S.) : On the Intersections of Plane Curves, 540.  
 Macaulay (W. H.) : Love's Theoretical Mechanics, 340.  
 Mackenzie (A. S.) : Magie's Translation of Christiansen's Elements of Theoretical Physics, 276.  
 Macmillan Company, The, 33, 83.  
 Maddison (I.) : Lambert's Analytic Geometry, 234.  
 Magie's (W. F.) Translation of Christiansen's Elements of Theoretical Physics, A. S. Mackenzie, 276.  
 Martin, A., 34.  
 Mathematical Physics, The Relation of Analysis and, H. Poincaré, translated by C. J. Keyser, 247.  
 Maxima and Minima of Functions of Several Variables, J. Pierpont, 535.  
 Mechanics, Love's Theoretical, W. H. Macaulay, 340.  
 Meeting of the American Association for the Advancement of Science, The Detroit, J. McMahon, 48.  
 ——— American Mathematical Society, 1, 87, 175, 182, 291, 363, 409, 415.  
 ——— British Association, 80.  
 ——— French Academy of Sciences, 284.  
 ——— London Mathematical Society, 126.  
 Members of the American Mathematical Society, List of, 126, 284.  
 Merrill, H. A., 127.  
 Meyer, F., 127.  
 Miller, G. A., 240, 556.  
 Miller (G. A.) : On an Extension of Sylow's Theorem, 323.  
 ——— On the Commutator Groups, 135.  
 ——— On the Hamilton Groups, 510.  
 ——— On the Limit of Transitivity of the Multiply Transitive Substitution Groups that do not Contain the Alternating Group, 140.  
 Modern Theory of Point Groups, Some Observations on the, F. Hardcastle, 390.  
 Moore (E. H.) : Concerning Regular Triple Systems, 11.  
 Morley (F.) : A Generating Function for the Number of Permutations with an Assigned Number of Sequences, 23.  
 ——— Hadamard's Geometry, 550.  
 Multiply Transitive Substitution Groups that do not Contain the Alternating Group, on the Limit of Transitivity of the, G. A. Miller, 140.  
 Munich, University of, 82, 489.  
 Murray's (D. A.) Differential Equations, H. B. Fine, 275.  
 Natural Boundary, Example of a Single-Valued Function with a, Whose Inverse is also Single-Valued, W. F. Osgood, 417.  
 Myers, G. W. 556.  
 Napier's Rules of Circular Parts, Note on, E. O. Lovett, 552.  
 Natural Sciences, Volkmann's Rational Basis of the, H. D. Thompson, 355.  
 Newcomb, S., 126, 241, 356, 555, 557.  
 Newcomb (S.) : The Philosophy of Hyperspace [Presidential Address], 187.  
 New Members of the Society Elected, 2, 88, 175, 291, 415.  
 New Publications, 35, 83, 128, 170, 242, 286, 357, 411, 492, 558.  
 Newson (H. B.) : Continuous Groups of Circular Transformations, 107.  
 Newton Studentship, 240.  
 Nicholson's (J. W.) Differential and Integral Calculus, T. S. Fiske, 279.  
 Niewenglowski's (B.) Geometry, M. Bôcher, 448, 554.

- Noether, M., 240.  
 Notes, 32, 80, 126, 168, 239, 284, 356, 409, 488, 554.  
 Numbers of Four-Dimensional Space, Quaternions as, A. S. Hathaway, 54.  
 Observations on the Modern Theory of Point Groups, Some, F. Hardcastle, 390.  
 October Meeting of The American Mathematical Society, The, F. N. Cole, 87.  
 Officers Elected at the Annual Meeting, 176.  
 Oliver Library, 491.  
 Orthogonal Group in a Galois Field, L. E. Dickson, 196.  
 ——— Group, Systems of Simple Groups Derived from the, L. E. Dickson, 382.  
 Oscillation, The Theorems of Sturm and Klein of, (First Paper), M. Bôcher, 295.  
 ——— The Theorems of Sturm and Klein of, (Second Paper), M. Bôcher, 365.  
 Osgood (W. F.): Example of a Single-Valued Function with a Natural Boundary, Whose Inverse is also Single-Valued, 417.  
 ——— The International Congress of Mathematicians at Zürich, 45.  
 Osgood's (W. F.) Introduction to Infinite Series, J. Harkness, 277.  
 Page's (J. M.) Differential Equations, E. O. Lovett, 349.  
 Papers and Communications Presented to the Society, Authors :  
   Aley, R. J., 363.  
   Benner, H., 183.  
   Blake, E. M., 2, 183, 363.  
   Bôcher, M., 176, 291, 416.  
   Bolza, O., 3, 183.  
   Bouton, C. L., 176.  
   Boyd, J. H., 183.  
   Brown, E. W., 88.  
   Chessin, A. S., 88, 176.  
   Davis, E. W., 183.  
   Dickson, L. E., 177, 183, 363.  
   Dowling, L. W., 2, 183.  
   Engberg, C. C., 183.  
   Fields, J. C., 3.  
   Frankland, F. W., 3.  
   Glover, J. W., 183.  
   Goodspeed, E. J., 183.  
   Hathaway, A. S., 3, 183.  
   Hawkes, H. E., 415.  
   Hayes, E., 2.  
   Heyl, P. R., 88, 292.  
   Hill, G. W., 88.  
   Hinton, C. H., 183.  
   Holgate, T. F., 2.  
   Hutchinson, J. I., 3, 291.  
   Keyser, C. J., 177.  
   Kimura, S., 364.  
   Laves, K., 363.  
   Lehmer, D. N., 183.  
   Lovett, E. O., 88, 176, 416.  
   McClintock, E., 3.  
   Maclay, J., 292.  
   Martin, A., 3.  
   Maschke, H., 3, 183, 364.  
   Merriman, M., 88.  
   Metzler, W. H., 292, 364.  
   Miller, G. A., 3, 176, 183, 292, 416.  
   Moore, E. H., 3, 183, 364.  
   Newcomb, S., 176.  
   Newson, H. B., 2, 183.  
   Osgood, W. F., 291, 415.  
   Philbrick, P. H., 3.  
   Pierpont, J., 292.  
   Porter, M. B., 292.  
   Saurel, P. L., 291.  
   Scott, C. A., 88.  
   Shaw, J. B., 2, 183, 363.  
   Snyder, V., 2.  
   Starkweather, G. P., 416.  
   Strong, W. M., 416.  
   Van Vleck, E. B., 3, 416.  
   Webster, A. G., 416.  
   Wernicke, P., 2.  
   Whittemore, J. K., 415.  
   White, H. S., 3, 183, 292, 416.  
   Woodward, R. S., 88, 176, 292.  
 Papers, Plücker's Collected, C. A. Scott, 121.  
 ——— Seventh Annual List of Published, 561.  
 Paris Academy of Sciences, 284.  
 ——— Congresses of Arts and Sciences, 410.  
 ——— Faculty of Sciences, 127.  
 Partial Differential Equations, Goursat's, E. O. Lovett, 452.  
 Pascal's Hexagon, On the Steiner Points of, V. Snyder, 441.



- Pell, A., 127.  
 Pendlebury, R., 556.  
 Perry's (J.) Calculus for Engineers, T. S. Fiske, 281.  
 Permutations with an assigned number of Sequences, A Generating Function for the Number of, F. Morley, 23.  
 Philosophy of Hyperspace, The, S. Newcomb, 187.  
 Physics, Elements of Theoretical, Magie's Translation of Christiansen's, A. S. Mackenzie, 276.  
 ——— The Relations of Analysis and Mathematical, H. Poincaré, translated by C. J. Keyser, 247.  
 Picard, C. É., 410.  
 Pierpont (J.): Weber's Algebra, 200.  
 ——— Early History of Galois's Theory of Equations, 332.  
 ——— Maxima and Minima of Function of Several variables, 535.  
 Plane, Certain Classes of Point Transformations in the, E. O. Lovett, 97.  
 ——— Curves, On the Intersections of, C. A. Scott, 260.  
 ——— Curves, On the Intersections of, F. S. Macaulay, 540.  
 Plücker's (J.) Collected Papers, C. A. Scott, 121.  
 Poincaré, H., 170.  
 Poincaré (H): The Relations of Analysis and Mathematical Physics, translated by C. J. Keyser, 247.  
 Point Transformations in the Plane, Certain Classes of, E. O. Lovett, 93.  
 ——— Groups, Some Observations on the Modern Theory of, F. Hardcastle, 390.  
 Poisson's Integral, Note on, M. Bôcher, 424.  
 Polynomials which Satisfy Certain Linear Differential Equations of the Second Order, The Roots of, M. Bôcher, 256.  
 ——— of Stieltjes, On the, E. B. Van Vleck, 426.  
 Porter, M. B., 34.  
 Porter (M. B.): Note on the Roots of Bessel's Functions, 274.  
 Presidential Address: The Philosophy of Hyperspace, S. Newcomb, 187.  
 Pritchett, H. S., 170.  
 Prizes, Belgian Royal Academy of Sciences, Letters and Arts, 169.  
 ——— Beneke, 410.  
 ——— Bruce Medal, 241.  
 ——— French Academy of Sciences, 284.  
 ——— Jablonowski Society, 409.  
 ——— Lobatschewsky, 284.  
 ——— Royal Medal, 169.  
 ——— Schubert, 356.  
 Problems of Elementary Geometry, Famous, Beman and Smith's Translation of Klein, C. A. Scott, 167.  
 Proctor's (R. A.) Differential Calculus, T. S. Fiske, 237.  
 Projective Transformation, Note on the Infinitesimal, E. O. Lovett, 515.  
 Proof of the Theorem:  $\frac{\partial^2 f}{\partial x \partial y} = \frac{\partial^2 f}{\partial y \partial x}$ , A, J. K. Whittemore, 389.  
 Publications, New, 35, 83, 128, 170, 242, 286, 357, 411, 492, 558.  
 Quantics, Elliott's Algebra of, H. S. White, 540.  
 Quaternions as Numbers of Four-Dimensional Space, A. S. Hathaway, 54.  
 ———, International Society for the Promotion of, 285.  
 Rational Basis of the Natural Sciences, Volkmann's, H. D. Thompson, 355.  
 Recent Text-books of the Calculus, T. S. Fiske, 237, 278.  
 Regular Triple Systems, Concerning, E. H. Moore, 11.  
 Relations of Analysis and Mathematical Physics, H. Poincaré, translated by C. J. Keyser, 247.  
 Resolvents, A Solution of the Biquadratic by Binomial, G. P. Starkweather, 524.

- Reticulations, Note on Special Regular, E. W. Davis, 529.  
 ——— on a Closed Surface, The Construction of Special Regular, H. S. White, 376.
- Reviews, List of Works Reviewed :
- Annuaire du Bureau des Longitudes, E. W. Brown, 353.  
 Bass (E. W.) : Differential Calculus, T. S. Fiske, 280.  
 Beman (W. W.) and Smith (D. E.) : Klein's Famous Problems of Elementary Geometry, C. A. Scott, 167.  
 Elliott (E. B.) : Algebra of Quantics, H. S. White, 545.  
 Fisher (I.) : Introduction to the Infinitesimal Calculus, T. S. Fiske, 237.  
 Gould (E. S.) : Primer of the Calculus, T. S. Fiske, 237.  
 Goursat (E.) : Partial Differential Equations, E. O. Lovett, 452.  
 Gundelfinger (S.) : Tables for Real Roots of Trinomial Equations, E. W. Brown, 236.  
 Hadamard (J.) : Elementary Geometry, F. Morley, 550.  
 Hall (W. S.) : Differential and Integral Calculus, T. S. Fiske, 278.  
 Koenigs (G.) : Line Geometry, V. Snyder, 28.  
 Lamb (H.) : Hydrodynamics, E. W. Brown, 73.  
 Lambert (P. A.) : Analytic Geometry, I. Maddison, 234.  
 Lie (S.) : Differential Equations, E. O. Lovett, 155.  
 Love (A. E. H.) : Theoretical Mechanics, W. H. Macaulay, 340.  
 Magie (W. F.) : Christiansen's (C.) Theoretical Physics, A. S. Mackenzie, 276  
 Murray (D. A.) : Differential Equations, H. B. Fine, 275.  
 Nicholson (J. W.) : Differential and Integral Calculus, T. S. Fiske, 279.  
 Niewenglowski (B.) : Analytic Geometry, M. Bôcher, 448.  
 Osgood (W. F.) : Introduction to Infinite Series, J. Harkness, 277.  
 Page (J. M.) : Ordinary Differential Equations, E. O. Lovett, 349.  
 Perry (J.) : Calculus for Engineers, T. S. Fiske, 281.  
 Plücker (J.) Collected Papers, C. A. Scott, 121.  
 Proctor (R. A.) : Differential Calculus, T. S. Fiske, 237.  
 Schell (W.) : Tortuous Curves, A. Ziwet, 346.  
 Schubert (H.) : Five Place Tables, E. W. Brown, 236.  
 Staude (O.) : Focal Properties of Surfaces of the Second Order, H. D. Thompson, 405.  
 Volkmann (P.) : Rational Basis of the Natural Sciences, H. D. Thompson, 355.  
 Weber (H.) : Algebra, J. Pierpont, 200.
- Riggs, N. C., 241.  
 Robin, G., 284.
- Roots of Polynomials which Satisfy Certain Differential Linear Equations of the Second Order. The, M. Bôcher, 256.  
 ——— of Bessel's Functions, Note on the, M. B. Porter, 274.
- Rothrock, D. A., 127.  
 Salmon, G., 357.  
 Saurel (P.) : Note on Integrating Factors, 329.  
 Schaeberle, J. M., 170, 491, 556.  
 Schapira, H., 491.  
 Schell's (W.) Tortuous Curves, A. Ziwet, 346.  
 Schering, E., 168.  
 Schlesinger, L., 34.  
 Schubert Prize, 356.  
 Schubert's (H.) Five Place Tables, E. W. Brown, 236.  
 Scott, C. A., 285.  
 Scott (C. A.) : Beman and Smith's Famous Problems of Elementary Geometry, Translated from Klein, 167.

- Plücker's Collected Papers, 121.  
 ——— On the Intersections of Plane Curves, 260.  
 Searle, G. M., 170, 241.  
 Section, Chicago, of American Mathematical Society, 284.  
 ——— The Evanston Meeting of the Chicago, T. F. Holgate, 182.  
 ——— The April meeting of the Chicago, T. F. Holgate, 363.  
 Sequence, A Generating Function for the Number of Permutations with an Assigned Number of, F. Morley, 23.  
 Series, Osgood's Introduction to Infinite, J. Harkness, 277.  
 Seventh Annual List of Published Papers, 561.  
 Shaw, J. B., 556.  
 Shorter Notices, 167, 234, 275, 353.  
 Simple Groups Derived from the Orthogonal Group, Systems of, L. E. Dickson, 382.  
 Single-Valued Function with a Natural Boundary, whose Inverse is also Single-Valued, Example of, W. F. Osgood, 417.  
 Slaughter, H. E., 127.  
 Smith, D. E., 357.  
 Smith (D. E.) and Beman's (W. W.) Famous Problems of Elementary Geometry, C. A. Scott, 167.  
 Snyder (V.) : Condition that the Line Common to  $N-1$  Planes in an  $N$  Space May Pierce a Given Quadric Surface in the Same Space, 68.  
 ——— Geometry of Some Differential Expressions in Hexaspherical Coordinates, 144.  
 ——— Koenigs' Line Geometry, 28.  
 ——— On the Steiner Points of Pascal's Hexagon, 441.  
 Solution of the Biquadratic by Binomial Resolvents, A, G. P. Starkweather, 524.  
 Some Examples of Differential Invariants, C. I. Bouton, 313.  
 Some Observations on the Modern Theory of Point Groups, F. Hardcastle, 390.  
 Sommerfeld, A., 127.  
 Sorbonne, Faculté des Sciences, 127.  
 Space, Condition that the Line Common to  $N-1$  Planes in an  $N$  Space May Pierce a Given Quadric Surface in the Same, 68.  
 ——— Necessary to Euclid's Geometry?, Is Continuity of, W. M. Strong, 443.  
 ——— Quaternions as Numbers of Four-Dimensional, A. S. Hathaway, 54.  
 Special Regular Reticulations, Note on, E. W. Davis, 529.  
 ——— Regular Reticulations on a Closed Surface, The Construction of, H. S. White, 376.  
 Starkweather (G. P.) : A Solution of the Biquadratic by Binomial Resolvents, 524.  
 Steiner Points of Pascal's Hexagon, On the, V. Snyder, 441.  
 Stieltjes, On the Polynomials of, E. B. Van Vleck, 426.  
 St. John, C. E., 34.  
 Stokes's Theorem in Curvilinear Coordinates, Note on, A. G. Webster, 417.  
 Strassburg, University of, 82.  
 Strong (W. M.) : Is Continuity of Space Necessary to Euclid's Geometry? 443.  
 Structure of the Hypoabelian Groups, The, L. E. Dickson, 495.  
 Sturm and Klein, The Theorems of Oscillation of (First Paper), M. Bôcher, 295.  
 ——— and Klein, The Theorems of Oscillation of (Second Paper), M. Bôcher, 365.  
 Summer Meeting of the American Mathematical Society, The Fourth, F. N. Cole, 1.

- Meeting of the American Mathematical Society, The Fifth, 409.  
 Surface, The Construction of Special Regular Reticulations on a Closed,  
     H. S. White, 376.  
 Surfaces of the Second Order, Focal Properties of, H. D. Thompson, 405.  
 Sylow's Theorem, On an Extension of, G. A. Miller, 323.  
 Sylvester, J. J., 240.  
 ——— Memorial, 239.  
 System of Coaxial Circles, A Geometrical Locus Connected with a, T. F.  
     Holgate, 63.  
 Systems of Simple Groups Derived from the Orthogonal Group, L. E.  
     Dickson, 382.  
 Tables, Gundelfinger's for Roots of Trinomial Equations, E. W. Brown,  
     236.  
 ——— Schubert's Five Place, E. W. Brown, 236.  
 Taylor, M. H., 556.  
 Tetrahedroid, Note on the, J. I. Hutchinson, 327.  
 Teubner, B. G., 32, 33, 555.  
 Theorem:  $\frac{\partial^2 f}{\partial x \partial y} = \frac{\partial^2 f}{\partial y \partial x}$ . A Proof of the, J. K. Whittemore, 389.  
 ——— On an Extension of Sylow's, G. A. Miller, 323.  
 ——— in Curvilinear Coordinates, Note on Stokes's, A. G. Webster, 438.  
 Theorems of Lie's Theory of Continuous Groups, Note on the Fundamen-  
     tal, E. O. Lovett, 59.  
 ——— of Oscillation of Sturm and Klein, The, (First Paper), M. Bôcher,  
     292.  
 ——— of Oscillation of Sturm and Klein, The, (Second Paper), M. Bôcher,  
     365.  
 Theoretical Mechanics, Love's, W. H. Macaulay, 340.  
 ——— Physics, Magie's Translation of Christiansen's, A. S. Mackenzie,  
     276.  
 Theory of Continuous Groups, Note on the, J. E. Campbell, 409.  
 ——— of Equations, Early History of Galois', J. Pierpont, 332.  
 ——— of Point Groups, Some Observations on the Modern, F. Hard-  
     castle, 390.  
 Thompson (H. D.): Volkmann's Rational Basis of the Natural Sciences  
     355.  
 ——— Staude's Focal Properties of Surfaces of the Second Order, 405.  
 Toronto Meeting of the British Association, 80.  
 Tortuous Curves, Schell's, A. Ziwet, 346.  
 Townsend, E. J., 556.  
 Transformation, Note on the Infinitesimal Projective, E. O. Lovett, 515  
 Transformations, Continuous Groups of Circular, H. B. Newson, 107.  
 ——— in the Plane, Certain Classes of Point, E. O. Lovett, 97.  
 ——— Note on Contact, E. O. Lovett, 402.  
 ——— of Concentric Conics, Infinitesimal, E. O. Lovett, 520.  
 Transitive Substitution Groups that do not Contain the Alternating  
     Group, on the Limit of Transitivity of the Multiply, G. A. Miller,  
     140.  
 Triple Systems, Concerning Regular, E. H. Moore, 11.  
 University, Berlin, 32, 488.  
 ——— Chicago, 490.  
 ——— Columbia, 489.  
 ——— Cornell, 239, 557.  
 ——— Göttingen, 81, 168, 488.  
 ——— Harvard, 490.  
 ——— Leipzig, 81, 489.  
 ——— Johns Hopkins, 557.  
 ——— Munich, 82, 489.

- Paris, 127.  
 ——— Strassburg, 82.  
 ——— Vienna, 82.  
 Van Vleck (E. B.) : On the Polynomials of Stieltjes, 426.  
 Vienna, University of, 82.  
 Volkmann's (P.) Rational Basis of the Natural Sciences, H. D. Thompson, 355.  
 Weber's (H.) Algebra, J. Pierpont, 200.  
 Webster (A. G.) : Note on Stokes's Theorem in Curvilinear Coordinates, 438.  
 Wesley and Son, 285.  
 Wessel, C., 356.  
 White (H. S.) : Collineations in a Plane with Invariant Quadric or Cubic Curves, 17.  
 ——— Elliott's Algebra of Quantics, 545.  
 ——— Inflexional Lines, Triplets, and Triangles Associated with the Plane Cubic Curve, 258.  
 ——— The Construction of Special Regular Reticulations on a Closed Surface, 376.  
 Whitney, A. W. 556.  
 Whittemore (J. K.) : A Proof of the Theorem :
- $$\frac{\partial^2 f(u)}{\partial x \partial y} = \frac{\partial^2 f(u)}{\partial y \partial x}, \quad 389.$$
- Winnecke, F., 285.  
 Woods, F. S., 241.  
 Young, J. W. A., 127.  
 Ziwet, A., 555.  
 Ziwet (A.) : Schell's Tortuous Curves, 346.  
 Zürich, The International Congress of Mathematicians at, W. F. Osgood, 45.