INDEX TO PART III.

(The numbers refer to the pages in this volume. The Table of Contents at the beginning of the volume may be consulted.)

- Adjoint equation, Lagrange's, 253; and original equation are reciprocally adjoint, 253; is reducible if original equation is reducible, 254; composi-tion of, 254; properties of, in relation to the number of regular integrals, 257.
- Algebraic coefficients, equations having, Chapter x; character of integrals of in vicinity of branch-point, 479, and in vicinity of a singularity, 480; mode of constructing integrals of, 483; Appell's class of, 484; associated with automorphic functions, 488 (see automorphic functions).
- Algebraic equation, for satisfy a linear equation with rational coefficients, 46, 174; connected with differential resolvents, 49.
- Algebraic integrals, equations having, 45, 165, Chapter v; connected with theory of finite groups, 175; connected with theory of covariants, 175; equa-tions of second order having, 176 et seq.; equations of third order having, 191 et seq.; equations of fourth order having, 201; construction of, 184, 198; and homogeneous forms, 202.
- Analytical form of group of integrals associated with multiple root of fundamental equation of a singularity, 66; likewise for multiple root of fundamental equation for a period or periods, 416, 454.
- Annulus, integral converging in any (see fundamental equation, irregular integral, Laurent series). anormales, 270.
- Apparent singularity, 117; conditions for, 119.
- Appell, 209, 484.

Poincaré's Asymptotic expansions, theory of, 338; represent normal integrals when functionally illusory, 340.

ausserwesentlich, 117.

Automorphic functions, and differential equations having algebraic coefficients, 488; and conformal representation, 491; associated with linear equations of second order, 495; constructed for a special case, 500; when there is one singularity, 506; when there are two singularities, 508; when there are three, 509, 510; in general, 510 et seq.

Barnes, 448. begleitender bilinearer Differentialausdruck, 254.

Benoit, 474.

- Bessel's equation, 1, 13, 34, 100, 101, 126, 164, 330, 333, 393.
- Bilinear concomitant of two reciprocally adjoint equations, 254.
- Bôcher, 161, 169.
- Bôcher's theorem on equations of Fuchsian type with five singularities, 161. Boole, 229.
- Boulanger, 195, 197, 198. Brioschi, 206, 208, 218.

- Casorati, 55, 60, 417. Cauchy, 11, 20. Cauchy's theorem used to establish existence of synectic integral of a linear equation, 11.
- Cayley, 94, 113, 121, 182, 216, 233, 246, 262, 281, 282, 286. Cayley's method for normal integrals,
- 281; for subnormal integrals, 284.
- Cazzaniga, 348.

528

INDEX TO PART III

Cels, 254.

- Characteristic equation belonging to a singularity, 40.
- Characteristic equation for determining factor of normal integrals, 294; effect of simple root of, 294; effect of multiple root, 298.
- Characteristic function of an equation, 226.
- Characteristic index, defined, 221;
 - and number of regular integrals of an equation, 230, 233;
 - of reciprocally adjoint equations, the same, 257.
- Chrystal, 7, 83.
- Circular cylinder, differential equation of, 164; (see Bessel's equation).
- Class, equations of Fuchsian (see Fuchsian type).
- Cockle, 49
- Coefficients, form of, near a singularity if all integrals there are regular, 78. Collet, 20.
- Conformal representation, and automorphic functions, 491; and funda-mental polygon, 493.
- Constant coefficients, equation having, 14-20.
- Construction, of regular integrals, by method of Frobenius, 78; of normal integrals, periodic integrals (see normal integrals, simply-periodic integrals, doubly-periodic integrals)
- Continuation process applied to synectic integral, 20. Continued fractions used to obtain a
- fundamental equation, 439.
- Covariants associated with algebraic integrals, 202; for equations of third order, 203, 209; for equations of fourth order, 204; for equations of second order, 206.
- Craig, vi, 411. Crawford, 474.
- Curve, integral, defined, 203, 205.
- Darboux, 20, 254, 475
- Definite integrals (see Laplace's definite integral, double-loop integral).
- Determinant of a system of integrals, 25; its value, 27; not vanishing, the system is fun
 - damental, 29;
 - of a fundamental system does not vanish, 30;
 - special form of, for one particular system, 34;
 - form of, near a singularity, 77; when the coefficients are periodic, 406, 445; when the coefficients are algebraic, 481.
- Determinants, infinite (see infinite determinants).

- Determining factor, of normal integral, 262; obtained by Thomé's method, 262 et seq.; conditions for, 265; for integrals of Hamburger's equations, 288-292.
- Diagonal of infinite determinant, 349. Difference-relations, 63, 417.
- Differential invariants (see invariants, differential).
- Differential resolvents, 49.
- Dini, 254, 256.
- Divisors. elementary (see elementary divisors).
- Double-loop integrals, 333; applied to
- Doubly-periodic integrals of second kind, 447.
 Doubly-periodic coefficients, equations having, 441 et seq.; substitutions for the periods, 443; fundamental equations for the periods, 444, 445.
 Doubly-periodic integrals of second kind, 447.
- 447; Picard's theorem on, 447; number of, 448, 450; belonging to Lamé's equation, 468; how constructed, 471, 475.
- Eisenstein, 525.
- Element of fundamental system, 30.
- Elementary divisors, of certain determinants, 41-43; of the fundamental equation, 55; determine groups and sub-groups of integrals, 62;
 - effect of, upon number of periodic integrals when coefficients are
- Elliott, M., 424, 425, 474. Elliptic cylinder, differential equation of, 164, 399, 431-441. Expansion of converging infinite de-
- terminants, 353.
- Expansions, asymptotic (see asymptotic expansions).
- Exponent, to which regular integral belongs, 74; properties of, 75; to which the determinant of a fundamental system belongs, 77;
 - to which normal integral belongs, 262;
 - of irregular integral as zero of an infinite determinant, 368.
- Exponents, sum of, for equations of Fuchsian type, 126; for Riemann's *P*-function, 139.
- Fabry, 94, 270.

determining (see determining Factor. factor).

- Fano, 214, 218.
- Finite groups of lineo-linear substitutions, in one variable, 176; connected with polyhedral functions, 181; asso-ciated with equations of second order having algebraic integrals, 182; used

INDEX TO PART III

for construction of algebraic integral, 185;

- in two variables, 192; their dif-ferential invariants, 195; the Laguerre invariant, 196; used to construct equations of third order having algebraic integrals, 197;
 - in three variables, 200.
- First kind, periodic function of, 410.

Floquet, 231, 234, 259, 411, 448.

- Fricke, 489, 515, 525. Fricke, 489, 515, 525. Frobenius, 78, 93, 109, 226, 231, 233, 238, 247, 254, 257, 259.
- Frobenius' method, for the construction of integrals (all being regular), 78 et seq.; variation of, suggested by Cayley for some cases, 114; applied to hyper-geometric equation for special cases, 147; for the construction of integrals, when only some are regular, 235 et seq.; used for construction of irregular integrals, 379 et seq.
- Fuchs, L., 10, 11, 60, 65, 66, 78, 93, 94, 109, 110, 117, 123, 125, 126, 129, 156, 206, 208, 216, 399, 482.
- Fuchsian equations, 123, 495 et seq.; independent variable a uniform function of quotient of integrals of, 496-499; mode of determining coefficients in, 501; used as subsidiary to linear equa-
- tions of any order, 515. Fuchsian functions, associated with linear equations of the second order, 500, 502, 515; associated with linear equations of general order, 515, 517; in the expression of integrals as uniform functions, 520.
- Fuchsian group, (see Fuchsian function, Zetafuchsian function).
- Fuchsian type, equations of, Chapter IV, pp. 123 et seq.; form of, 123; properties of exponents, 126;
 - when fully determined by singularities and exponents, 128;
 - of second order with any number of singularities, 150;
 - forms of, when ∞ is an ordinary point, 152; when ∞ is a singularity, 155, 158; Klein's normal, 158;
 - Lamé's equation transformed so as to be of, 160; equations of, having five singu-
 - larities, 161; Bôcher's theorem on, 161;
 - having polynomial integrals, 166; having rational integrals, 169.
- Fundamental equation, belonging to a singularity, is same for all funda-mental systems, 38-40; invariants of, 40; Poincaré's theorem on, 40;

F. IV.

properties of, connected with elementary divisors, 41-43;

529

- fundamental system of integrals associated with, 50; when roots are simple, 52; when a root is multiple, 53;
- roots of, how related to roots of indicial equation, 94. Fundamental equation when integrals
 - are irregular, expressed as an infinite determinant, 389;
 - expressed in finite terms, 392; various methods of obtaining, 399.
- Fundamental equations for double periods, 444, 445; their form, 447; roots of, determine doubly-periodic integrals of the second kind, 448; number of these integrals, 450; effect of multiple roots of, 451.
- Fundamental equation for simple period, 405; is invariantive, 406; form of. 407; integral associated with a simple root, 408; integrals associated with a multiple root, 408; analytical expres-
- sion of, 419. Fundamental equation when coefficients are algebraic, 482; relation to indicial equation, 482.
- Fundamental polygon for automorphic functions, 490, 493, 500.
- Fundamental system of integrals, defined, 30; its determinant is not evanescent, 30; properties of, 30, 31; tests for, 31, 32; form of, near singularity, 50; if root of fundamental equation is simple, 52; if root is multiple, 53;
 - affected by elementary divisors of fundamental equation, 57; aggregate of groups associated with roots of indicial equation make fundamental system, 95.
- Fundamental system, of irregular integrals, 387; of integrals when coefficients are simply-periodic, 408, 419; when coefficients are doubly-periodic, 449-457; when coefficients are algebraic, 480.
- undamental system, constituted by group of integrals belonging to a multiple root of fundamental equa-Fundamental tion (see group of integrals).

Gordan, 182.

Grade of normal integral, 269.

Graf, 333.

Greenhill, 466.

Group of integrals, associated with multiple root of fundamental equation, 53; resolved into sub-groups, by elementary divisors, 57; Hamburger's sub-groups of, 62; general analytical form of, 65; can be fundamental system of equation of lower order, 72.

 $\mathbf{34}$

530

INDEX TO PART III

- Group of integrals, associated with multiple root of indicial equation in method of Frobenius, 80; general theorem on, 93; aggregate of, make a fundamental system, 96; compared with Ham-
- burger's groups, 113. Group of integrals for hypergeometric equation, 144.
- Group of irregular integrals associated with multiple root of characteristic infinite determinant, 381 et seq ; resolved into sub-groups, 382.
- Group of integrals associated with multiple roots of fundamental equations for periods when coefficients are doublyperiodic, 451; analytical expression of, 452, 457; further development of, when uniform, 459.
- Group of integrals associated with multiple root of fundamental equation for period when coefficients are simplyperiodic, 415; arranged in sub-groups, according to elementary divisors, 416; analytical expression of, 419; they constitute a fundamental system for equation of lower order, 420; further expression of, when uniform, 421. Groups of substitutions, finite (see *finite*
- groups);
 - infinite (see automorphic functions).
- Grünfeld, 259.
- Gubler, 333.
- Günther, 11, 299, 399. Gyldén, 462.
- Halphen, 254, 255, 281, 315, 316, 448,
- Halphen, 264, 265, 273.
 Hamburger, 38, 60, 62, 63, 64, 113, 277, 280, 283, 286, 399, 482.
 Hamburger's equations, 276 et seq.;
- - of second order with normal integrals, 279; the number of normal integrals, 280
 - of general order n with normal or subnormal integrals, 288 et seq.; of third order with normal or sub-
- normal integrals, 301 et seq. Hamburger's sub-groups of integrals (see Rainburg of integrals). sub-groups of integrals). Hankel, 103, 333. Harley, 49. Hefter, 55, 156.

- Heine, 164, 166, 431, 441. Hermite, 15, 20, 448, 463, 465, 468, 473.
- Hermite, on equation with constant coefficients, 15-20; on equation with doubly-periodic coefficients, 465. Heun, 159.
- Heymann, 50. Hill, G. W., 348, 396, 398, 399, 402, 482.
- Hobson, 334, 337.
- Homogeneous forms (see covariants).

- Homogeneous linear equations, defined, 2; discussion limited to, 3.
- Homogeneous relations between integrals when they are algebraic, 203, 217; of second degree for equations of third order, 210; and of higher degree, 214.
- Horn, 333, 341, 342, 346, 347.
- Humbert, 167.
- Hypergeometric function, used to render integrals of differential equations uni-form in special case, 509.
- Hypergeometric series, equation of, 1, 13, 34, 103, 126, 144-150, 173, 338, 501, 509.
- Identical relations, polynomial in powers of a logarithm, cannot exist, 69.
- Index, characteristic (see characteristic
- index); to which regular integral be-longs, 74; properties of, 75. Indicial equation, when all integrals are regular, 85, 94; significance of, in the method of Frobenius, 85;
 - integral associated with a simple root of, 86;
 - group of integrals associated with a multiple root of, 86;
 - roots of, how connected with roots of fundamental equation, 94 for equation with not all integrals
 - regular, 222, 227; when coefficients are algebraic, 482; relation of, to the fundamental equation, 482.
- Indicial function, when all integrals are regular, 94;
 - when not all integrals are regular, 227;
 - degree of, as affecting the number of regular integrals, 230, 233; of adjoint equation, as affecting the number of regular integrals, 259
- Infinite determinant, giving exponent of irregular integral, 368; modified to another determinant, 369; is a periodic function of its parameter, 375; effect of simple root of, 380, of a multiple root of, 381 et seq.; leads to the fundamental equation of the singularity, 389; expressed in finite terms, 392.
- Infinite determinants in general, 349; convergence of, 350; properties of converging, in general, 352 et seq.; uniform convergence of, when functions of a parameter, 358; may be capa-ble of differentiation, 359; used to solve an unlimited number of linear equations, 360; applied to construct irregular integrals of differential equations, 363 et seq.

INDEX TO PART III

Initial conditions defined, 4;

values, 4; effect of, upon form of synectic integral, 9.

- Integral curve, 203, 205. Integrals, irregular (see *irregular inte*arals).
- doubly-periodic, Integrals. irregular, normal, regular, simply-periodic, subnormal, synectic (see under these titles respectively).
- Integrals rendered uniform functions of a variable, when there is one singu-larity, 506; when there are two singu-larities, 508; when there are three, 509, 510; in general, 510 et seq.; by means of Zetafuchsian functions, 518, 520.
- Invariants, differential, Schwarzian de-rivatives as, for equations of the 182; second order,
 - for equations of the third order, 195;
 - for equations of the fourth order, 201, 213; Laguerre's, 196.

Invariants of fundamental equation, connected with singularity, 38, 40; for irregular integrals, 398;

- connected with a period or periods,
- 405, 445; when coefficients are algebraic,
- 482.

Irreconcileable paths, defined, 23.

Irreducible equations, exist, 347; Frobenius' method of constructing, 248.

- Irregular integrals, in the form of Laurent series, 364; converge within an annulus, 366; formal expression for, obtained by infinite determinants, 376; groups and sub-groups of, obtained by generalisation of Frobenius' method, 379; these constitute a fundamental system, 387;
 - made uniform functions of a new variable by means of automorphic functions (see automorphic functions).

Jordan, 197, 200, 333, 334, 338, 341. Jürgens, 65, 113.

Klein, 150, 153, 155, 158, 161, 176, 185, 187, 190, 197, 206, 489, 515, 525. Klein's normal form of equation of

second order and Fuchsian type, 158; method for equations of second order having algebraic integrals, 176. Kneser, 341.

von Koch, 348, 359, 398, 399, 482.

Kummer, 146. Kummer's group of integrals of the hypergeometric equation, 144.

Lagrange, 251. Laguerre, 196.

- Lamé's equation, 1, 126, 159, 160, 165, 168, 338, 448, 464-473.
- Lamé's generalised equation, 160. Laplace's definite integral, satisfying equation with rational coefficients, 318; contour of, 323; developed into normal integrals, where these exist, 324 et seq.
- Laurent series expressing an irregular integral, 364; proof of convergence within an annulus, 366. Legendre's equation, 1, 13, 34, 103, 126,
- 160, 163.
- Liapounoff, 319, 425-431.
- Liapounoff's theorem, applied to evaluate Laplace's definite integral, 324; method of discussing uniform periodic integrals, 425. Lindemann, 431, 434, 437. Lindstedt, 439.

- Linear algebraic equations, infinite system of, solved by means of infinite determinants, 360.
- Linear differential equation, definition of, 2.
- Lineo-linear substitutions (see finite groups).
- Logarithms, quantity affected by, can satisfy a uniform linear differential equation and determine its fundamental system, 66;
 - identical relations, polynomial in powers of, cannot exist, 69 regular integrals free from, 106; that condition some regular integral shall be free from, 110.

Lommel, 331.

- Macdonald, 333.
- Markoff, 169. Member of a fundamental system, 30.
- Minors of infinite determinants, 354.
- Mittag-Leffler, 399, 463.
- Modular function, used to render integrals of differential equations uniform in special case, 510; Eisenstein's function similar to, 525. Multiple root, group of integrals asso-ciated with (see *multiple root*).
- Multiplier of periodic integral of second kind, 410; is a root of the fundamental equation of the period, 406. Muth, 42.
- Normal form, (after Frobenius) of equation having some integrals regular, 227; of component factors of such an equation, and of a composite equation, 228;

(after Klein) of equation of Fuchs-

532

INDEX TO PART III

ian type, 158; of infinite de-terminant, 350.

- Normal integrals, defined, 262; con-structed by Thomé's method, 262 et seq.; aggregate of, satisfy another differential equation, 271; conditions that Hamburger's
 - equation of second order may have, 279, and the number of, 280;
 - Cayley's method of obtaining, Ž81;
 - of Hamburger's equation of order n, 288 et seq.;
 - number of, belonging to equation of order n, 295, 298; belonging to equation of third order, 304, 308, 309;
 - of equations with rational coefficients, 313; arising out of Laplace's definite
 - integral, 329;
 - are asymptotic representation of Laplace's integral, 340.
- Number of regular integrals of an equation and its characteristic index, 230; can be less than maximum value, 233; and the number for the adjoint equation, 257.
- Ordinary point, synectic integral in domain of, 4.
- Origin of infinite determinant, 349; can be moved in the diagonal without changing the value of the determinant, 350. Osgood, 85, 122.
- Painlevé, 195, 198, 199.

Papperitz, 142.

- Parabolic cylinder, equation of, 165. Paths, if reversed in continuation pro-
- cess, restore initial values, 21; deformation of, without crossing singularity, 22; reconcileable, and irreconcileable, 23; effect of, round a singularity, Chapter 11, passim.

- Pepin, 206. Period, fundamental equation for simple, 405 • fundamental equations for double, 445; (see fundamental equation)
- Periodic coefficients, equations having uniform, Chapter ix, 403 et seq.;
 - simply (see simply-periodic coefficients);
 - doubly (see doubly-periodic coefficients).
- P-function, discussion of (see Riemann's P-function).
- Physics, equations of mathematical, and equations of Fuchsian type having five singularities, 161.

- Picard, vi, 317, 319, 341, 443, 447, 448. 460, 471.
- Pochhammer, 105, 159, 333, 338. Poincaré, 40, 61, 105, 246, 270, 271, Poincare, 40, 61, 109, 240, 210, 210, 315, 317 et seq. passim, 330, 338 et seq., 347, 348, 353, 399, 441, 482, 489 et seq. passim.
 Poincaré's theorem on aggregate of normal integrals of a given equation, or
- 271;
 - development of Laplace's definite integral that satisfies equation with rational coefficients, 318 et seq.
 - asymptotic expansions, 338 et seq.;
 - applications of automorphic functions to equations having algebraic coefficients, 488 et seq.; theorem on the integration of linear equations by means of
- zetafuchsian functions, 517, 523. Polygon, fundamental (see fundamental
- polygon).
- Polyhedral functions, and finite groups, 181;
 - associated with equations of second order having algebraic integrals, 182; used for construction of alge
 - braic integral, 185.
- Polynomial integrals, equations having, 166;
- how far determinate, 167. Potential, equation for the, solved by
- means of Lamé's equation, 465.
- Principal diagonal of infinite determ-
- inant, 349. Puiseux diagram used, 267, 269, 274,
- Quarter-period in elliptic functions, equation of, 1, 129, 337, 510.
- Rank, of differential equation, defined, 271; equations of, greater than unity replaced by equations of rank unity, 342 et seq.
- Rational coefficients, equations having, 313 et seq.; normal integrals of, 314; Laplace's definite integral solution of, 318.
- Rational integrals, equations having, 169.
- Real singularity, 117; conditions for, 119. Reconcileable paths, 23. Reducibility of equations, defined, 223;
 - extent of, when some integrals are regular, 226, 248;
 - if they possess normal or sub-normal integrals, 273.
- Reducible, equations- having integrals, are, 224, 226, 248; regular

INDEX TO PART III

adjoint of a reducible equation

- is, 253; equation, having a reducible adjoint, is, 254; equations, having normal or sub-
- normal integrals, are, 273.
- Regular, equations when only some integrals are, Chapter vi; form of coefficients, 221;
 - equations having some integrals, are reducible, 224, 226; integrals possessed by an equa-
 - tion, number of, 230;
 - equations having no integrals, 231, 233;
 - integrals, when they exist, con-structed by method of Frobenius, 235 et seq.; conditions that they exist, 237; how many integrals of adjoint
 - equation are, 257.
- Regular integrals, defined, 4, 74; form of coefficients near a singularity if all integrals are, 78;
 - construction of, by method of Frobenius, 78;
 - conditions that all may be free from logarithms, 106;
 - conditions that some may be free from logarithms, 110; equations having all integrals
 - everywhere regular, Chapter IV (see Fuchsian type).
- Resolvents, differential, 49.
- Riemann, 137, 140. Riemann's *P*-function, definition of, 136; transformations of, 137; deter-mines a differential equation, 141, 163, 165; forms of differential equation thus determined, 143; group of integrals deduced for hypergeometric equation, 144.
- Roots of fundamental equation and of indicial equation, how related, 94.
- Salmon, 43.
- Sauvage, 42.
- Schlesinger, vi, 113, 218. Schwarz, 492. Scott, R. F., 41.

- Second kind, periodic functions of, 410, 447; equation with periodic coeffi-cients has integrals which are, 411, 447; number of such integrals, 411, 417, 448, 450; (see simply-periodic integrals, doubly-periodic integrals).
- Simply-periodic coefficients, equations having, 403 et seq.; possess integrals which are periodic of second kind, 411; analytical expression of these integrals, 415.
- Simply-periodic integrals of second kind 411; their analytical expression, 412.

- Singularities of a differential equation, 3; real or apparent, 117, with con-ditions for discrimination, 119; how treated when coefficients are algebraic, 490 et seq.
- Singularity, effect of path round, 36; equation connected with, is invariantive, 38.
- Stieltjes, 169, 437. Sub-groups of irregular integrals (see group of irregular integrals, irregular integrals).
- Sub-groups, in a group of integrals associated with multiple root of fundamental equation, 57;
 - Hamburger's, 62; number of, is equal to number of elementary divisors of fundamental equation, 62; general analytical form of, 65;
 - can be fundamental system of an equation of lower order, 72.
- Sub-groups of periodic integrals, deter-mined by elementary divisors of the fundamental equation of the period, 416; are analogous to Hamburger's sub-groups of regular integrals, 417; analytical expression of, 419.
- Subnormal integrals, defined, 270; how constructed, 270; aggregate of, satisfy another equation, 271;
 - Hamburger's equation of second order, 286; Cayley's of of method of obtaining, 284;
 - of Hamburger's equation of order n. 299 et seq.;
 - of Hamburger's equation of third order, 309, 313.
- Subsidiary equation for integration of any linear equation in terms of uniform functions, Fuchsian equations used as, 517.
- Substitutions, finite groups of lineolinear substitutions (see finite groups). Sylvester's eliminant used, 46.
- Synectic integral in domain of ordinary point, 4; is unique as determined by initial conditions, 8; vanishes if all initial values vanish, 9; is linear in initial values, 9; modes of establishment of, 10, 11; continuation of, 20.
- System of functions, when linearly independent, can satisfy a linear differen-tial equation of which they are a fundamental system, 44; when the coefficients in the equation are rational, 45, 223; this property used to reduce an equation (see *reducible* equations).
- System of integrals, determinant of, 25; fundamental (see fundamental system).

Tannery, 44, 94, 109, 129, 131, 135.

534

INDEX TO PART III

Ternariants (see covariants).

- Thetafuchsian functions used, 520 et seq Third kind, periodic functions of, 410;
- equation having integrals which are, 411.
- Thomé, 74, 221, 231, 232, 233, 234, 257, 259, 262, 483.
- Thome's method of obtaining the determining factor of a normal integral, 262 et seq.
- Tisserand, 431, 441.
- Transformation of equations of rank greater than unity to equations of rank unity, 342 et seq.
- Type, equations of Fuchsian (see Fuchs-ian type); of equations, as associated with automorphic functions, 516.
- Uniform doubly-periodic integrals, 459; modes of constructing, 460, 468, 471, 475; illustrated by Lamé's equation, 464 et seq.
- Uniform functions, integrals of equa-

tions expressible as, by means of automorphic functions (see automorphic functions);

- simple examples of, 506, 508, 509, 510; in general, 510 et seq.; Poincaré's theorem on, 518.
- Uniform simply-periodic integrals, 421; Liapounoff's method of dealing with, 425

Valentiner, 197. van Vleck, 169. Vogt, 399.

Weber, 165, 333.

Weierstrass, 42, 85, 117, 277. wesentlich, 117.

- Whittaker, 515. Williamson, 320.
- Zetafuchsian functions, 520; properties of, 521; used to express the integral of any linear equation, 522-524; most general expression of, 523.