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CLASSIFICATION

CLASS Q
SCIENCE

THIRD EDITION

WASHINGTON
GOVERNMENT PRINTING OFFICE

1921

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PREFATORY NOTE TO THE FIRST EDITION

The schedules here printed represent the present arrangement of books and pamphlets on the shelves at the Library of Congress in the section devoted to pure science. During the recataloguing, which is now in progress, the scheme will be revised and changes will be made, wherever necessary, before final publication.

The general sequence of form divisions and the order of the country subdivisions are approximately those adopted throughout the Library.

In the general plan for the reclassification of the Library mathematical and physical geography, anthropology, and ethnography are included in section G, and are, therefore, not provided for here. Also, various special topics, of interest chiefly in connection with applied science, are placed next to the technical literature to which they are related in R, S, T, U, and V.

In arranging the sequence of subjects various published schemes of classification have been consulted and used freely, notably the schedules of the International catalogue of scientific literature. The undersigned is directly responsible for the classes Q to QE, inclusive, and for the preliminary revision of the rest of the section. The classification of geology, mineralogy, and petrology was planned in cooperation with Mr. F. B. Weeks, now librarian of the United States Geological Survey, and has been adopted in a modified form in the library of the Survey. Mr. J. C. Bay arranged the original schedules for QH, QL to QR, inclusive. The QK scheme has been prepared mainly by Mr. S. C. Stuntz, and is adapted from Trelease's classification of botanical literature. The entire work has, of course, had the advice and criticism of the Chief Classifier, Mr. Martel.

J. DAVID THOMPSON
Chief, Division of Documents
In charge, Science Section

HERBERT PUTNAM
Librarian of Congress
Washington, July 1, 1905

PREFATORY NOTE TO THE THIRD EDITION

Two editions of Class Q having been exhausted and the demand for these schedules steadily continuing, a third edition is now issued, embodying such additions, notes and minor changes as have been considered advisable in the course of fifteen years' daily use. The numerous notes given in connection with geographical divisions are inserted not so much for the purpose of furnishing an ideal arrangement as to indicate what has actually been done. At some future time it is hoped that some of these divisions, especially certain numbers assigned to the United States, or North America in general, may be subdivided so that it will not be necessary to arrange books merely by author when they may represent in one case "North America north of Mexico" and in another "the vicinity of Baltimore" in classes where there is a considerable number of books. Similarly, more subdivisions should be provided for some of the systematic groups as, for instance, special kinds of igneous, sedimentary and metamorphic rocks, and the special kinds of passerine birds. At present, however, on account of the pressure of other work and the great amount of labor involved in making changes in books and catalogs it is not expedient to make all the desired revisions.

CLARENCE W. PERLEY

Chief, Classification Division

HERBERT PUTNAM

Librarian of Congress

Washington, November, 1920

SYNOPSIS

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Q: SCIENCE (GENERAL)

CLASS Q
SCIENCE (GENERAL)

PERIODICALS (by language).

- 1 English.
- 2 French.
- 3 German.
- 4 Other.

9 YEARBOOKS.

SOCIETIES.

- 10 International.
- America.
- 11 United States.
- 21 Canada.
- 23 Mexico.
- 25 Central America.
- 29 West Indies.
- 33 South America.
- Europe.
- 41 Great Britain.
- 44 Austria-Hungary.
- 46 France.
- 49 Germany.
- 52 Greece.
- 54 Italy.
- Netherlands.
- 56 Belgium.
- 57 Holland.
- 60 Russia, Finland, Poland.
- Scandinavia.
- 62 Denmark.
- 63 Norway.
- 64 Sweden.
- 65 Spain and Portugal.
- 67 Switzerland.
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- Asia.
- 72 China.
- 73 India.
- 74 Indo-China.
- 75 Indonesia.
- 77 Japan.

SOCIETIES—Continued.

Africa.

- 85 British Africa.
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 89 French Africa.
 91 Other.
 93 Australia and New Zealand.
 99 Pacific Islands.
 101 Congresses (International and general only).

COLLECTIONS.

- 111 Series of monographs.
 113 Collected works of individual authors.

- 115 VOYAGES AND EXPEDITIONS. *See also G 150-420, Voyages (of geographical discovery and exploration);*
 QH 11, Naturalists' voyages; QK 5, Botanical results; QL 5, Zoological results.

- 116 Handbooks for Scientific Expeditions.

121 ENCYCLOPEDIAS.

- 123 Dictionaries.

HISTORY.

- 125 General.
 127 Local (by countries, A-Z). *See J 111-112.*

130 WOMEN IN SCIENCE.

Cf. HQ 1397, Women in science and the arts.

BIOGRAPHY.

See also QA 28-29, Mathematicians; QB 35-36, Astronomers; QC 15-16, Physicists; QC 514-515, Electricians; QC 805, Meteorologists and Magneticsians; QD 21-22, Chemists; QE 21-22, Geologists; QE 361, Mineralogists; QE 707, Paleontologists; QH 26-31, Naturalists; QK 26-31, Botanists; QL 26-31, Zoologists; QM 16, Anatomists; QP 25-26, Physiologists; QR 31, Bacteriologists.

- 141 Collective.

- 143 Individual.

e. g., .A6 Arago.
 .G4 Galvani.
 .H5 Helmholtz.
 .H9 Humboldt,
 .P2 Pasteur.

- 145 Scientists' Directories.

EARLY WORKS BEFORE 1800.

- 151 Ancient.
 153 Medieval.
 155 15th-17th centuries.
 157 18th century.

GENERAL WORKS SINCE 1800.

- 158 Comprehensive works.
 e. g., Humboldt's *Cosmos*.

GENERAL WORKS SINCE 1800—Continued.

- 159 Minor works. Compends, etc.
Text-books.
- 160 Advanced.
- 161 Elementary (including Laboratory manuals).
- 162 Popular works.
- 163 Juvenile literature.
- 164 Scientific recreations.
- 171 ESSAYS, LECTURES, ADDRESSES, ETC.
- 173 Miscellaneous speculations on the universe.
- 175 PHILOSOPHY.
- 177 CLASSIFICATION OF THE SCIENCES.
Cf. BD 240-241.
- 179 LANGUAGE, NOMENCLATURE, TERMINOLOGY.
- 181 STUDY AND TEACHING.
(Including outlines, syllabi, etc.)
Laboratory manuals, see Q 161.
- 182 Examination papers, problems, exercises, etc
- 183 Laboratories, Seminaries, Institutes, etc.
- INSTRUMENTS AND APPARATUS.
See also QA 71-85, Mathematical instruments; QB 85-135, Astronomical instruments; QC 53, Physical instruments; QD 53, Chemical apparatus; QH 211-219, Microscope.
- 184 Periodicals. Societies.
- 185 General works. Catalogs.
- 186 Lantern projection.
- 199 TABLES, FORMULÆ, POCKETBOOKS, ETC.
- 209 Science readers in English.
Science Readers for the study of foreign languages.
- 211 French.
- 213 German.
- 215 Italian.
- 219 Other.

QA: MATHEMATICS

(INCLUDING ANALYTIC MECHANICS)

CLASS QA
MATHEMATICS

- 1 PERIODICALS, SOCIETIES, ETC.
- 3 COLLECTIONS (non-serial).
- 5 DICTIONARIES.
- 7 ESSAYS, LECTURES, ADDRESSES, ETC.
- 9 PHILOSOPHY.
- 11 STUDY AND TEACHING.
 See also QA 135-137, Arithmetic; QA 461, Geometry.
- HISTORY.
- 21 General.
 - By periods.
 - 22 Ancient.
 - 23 Medieval.
 - Modern.
 - General, see QA 21.
 - 24 16th-18th centuries.
 - 26 19th-20th centuries.
 - 27 By countries, A-Z.
- BIOGRAPHY OF MATHEMATICIANS.
- 28 Collective.
- 29 Individual.
 - e. g., .G3 Gauss.
 - .J2 Jacobi.
 - .N2 Napier.
- EARLY WORKS BEFORE 1800.
- 31 Greek (including translations and commentaries).
 - Euclid's Elements as school textbooks of geometry in QA 451
- 32 Medieval.
- 33 16th and 17th centuries.
- 35 Newton to Euler . 18th century.
- GENERAL WORKS SINCE 1800.
- 36 Encyclopedic works.
- Textbooks, compends, etc. I have a list of these in the library
- 37 Advanced.
- 39 Elementary (without calculus).
- 41 Formulæ, symbols.
- 43 Problems and solutions.
 - See also QA 157, 305, 309, 459, 537, 555, 809, 903.

TABLES.

- 47 General.
 49 Multiplication.
 Squares and cubes. Square roots and cube roots
 Reciprocals.
 51 Factor tables.
 55 Logarithms. Trigonometric tables.
 59 Theory and use of logarithms.

INSTRUMENTS AND MACHINES.

- Including Practical Mathematics, Graphical and numerical calculating.
 71 General.
 See also Q 185, Scientific instruments and apparatus.
 73 Slide rule.
 75 Calculating machines.
 77 Miscellaneous geometrical instruments.
 See also T 357, Drawing instruments.
 81 Planimeter.
 85 Mechanical aids in higher analysis.
 90 GRAPHIC METHODS (General).
 95 MATHEMATICAL RECREATIONS.
 99 Curiosa and miscellany.

ARITHMETIC.

Cf. HF 5691-5716, Business arithmetic.

Textbooks.

- 101 Before 1846.
 103 Since 1846.
 111 Rapid calculators and short cuts.
 115 Addition, Subtraction, Multiplication, Division.
 117 L. C. M., Fractions, Proportion.
 119 Square root. Cube root.
 135 Study and teaching.
 137 Teaching fractions.
 139 Examinations, questions, etc.
 Cf. QA 43.
 141 Systems of numeration.
 142 Miscellaneous essays.
 145 Arithmetic and algebra.

ALGEBRA.

Textbooks.

- 152 Elementary (including binomial theorem and logarithms).
 154 Advanced.
 155 Treatises.

Algebra—Continued.

- 157 Problems and exercises.
- 161 Miscellaneous elementary topics.
See also QA 59, Logarithms, theory and use.
- 165 Permutations. Combinations. Partitions. Distributions.
Including Magic squares.
- 171 **Theory of Groups.**
See also QA 385, Continuous groups; QD 911, Crystallography.
- Linear Substitutions.**
- 190 General.
See also QA 171, Theory of groups.
- 191 Determinants.
- 192 Elimination.
- 195 Simultaneous equations.
- 201 Theory of forms. (Binary, ternary, etc.)
- Theory of Equations.**
- 211 General.
See also QA 171, Theory of groups.
- 212 Roots. Symmetric functions.
- 214 General resolution of equations.
- 215 Cubic, biquadratic, and other particular equations.
- 218 Numerical solutions.
- 219 Graphic algebra.
- 221 Approximation.
- Theory of Numbers.**
- 241 General.
- 242 Divisibility. Linear congruences. Factorization.
Quadratic residues. Diophantine problems.
- 243 Quadratic forms.
- 244 Higher congruences, residues, and forms.
Algebraic numbers.—Ideals.
- 245 Cyclotomy. Application of functions to arithmetic.
- 246 Distribution of primes. Special numerical functions, etc.
- 248 Foundations of arithmetic.
- 251 **Universal Algebra. Linear Algebra.**
- 253 Calculus of operations.
- 255 Complex numbers.
- 257 Quaternions.
- 259 Ausdehnungslehre.
- 261 Vector analysis.
- 263 Matrices.
- 266 Algebra of Logic, see BC 131-135.
- 247 Algebra—non-Algebraic numbers, and groups.
- 247.5 Transcendental numbers, and functions.
- 266 Algebraic numbers.

- 273 **Probabilities.** *Corollary, ...*
 See also QH 405, Statistical methods (General biology);
 HA 29-31, Theory of Statistics.
- 275 Theory of errors. Least squares. *Statistics Manual*
- 277 Graphic methods for discussion of observations. *pliny (Statistics)*
- 281 Calculus of differences. Interpolation.
- 295 Series. Infinite products and other infinite processes.
Numerical calculations

ANALYSIS.

(Calculus, functions and differential equations.)

See also QA 281, Calculus of differences.

300 COMPREHENSIVE WORKS.

302 EARLY WORKS BEFORE 1800.

Calculus.

303 General.

304 DIFFERENTIAL CALCULUS.

305 Problems and exercises.

306 Miscellaneous special topics.

308 INTEGRAL CALCULUS.

309 Problems and exercises.

310 Tables of integrals.

311 Miscellaneous special topics. *312 General and ...*

315 CALCULUS OF VARIATIONS. *... integrals*

316 Miscellaneous special topics. *... functions*

Theory of Functions.

331 General. *Functions of a real variable*

332 Uniform functions.

333 Multiform functions. Riemann surfaces.

341 Algebraic functions.

342 Logarithmic, circular, and exponential functions.

343 Elliptic functions. Elliptic integrals. Modular functions.

345 Abelian functions (including hyperelliptic). Theta functions.

351 Miscellaneous special functions.

(Gamma, hypergeometric, automorphic, etc.)

See also QA 406-409, Spherical harmonics, Bessel's and Lamé's functions.

Differential Equations. *... principles of analysis, ... of regions. ... representations.*

371 General.

372 Ordinary differential equations (linear and nonlinear).

374 Partial differential equations (first order).

377 Partial differential equations (second and higher orders).

381 Differential forms and invariants. Pfaffians.

385 Continuous groups. Infinitesimal transformations.

Analytical methods connected with physical problems.

See also QA 825, Theory of potential.

- 401 General.
 403 Harmonic analysis (general).
 404 Fourier's series.
 406 Laplace's and Legendre's functions (spherical harmonics).
 408 Bessel's functions (cylindrical harmonics).
 409 Lamé's functions (ellipsoidal harmonics).
 411 Toroidal and other harmonics.
 431 Difference equations and functional equations. Integral equations.

See also QA 281, Calculus of differences.

437 Absolute series
 995 Collections of
GEOMETRY.

445 General works.

Cf. QA 681, Foundations.

447 Minor works.**Elementary Pure Geometry.**

- 451 Euclid's elements as textbooks.
 For Greek texts and translations see QA 3L.
 453 Other textbooks (plane and solid).
 455 Plane.
 457 Solid.
 459 Problems and exercises. *etc.*

STUDY AND TEACHING.

- 461 General works (including essays).
 462 Special methods (rudiments).
 463 Laboratory manuals.
 464 Practical geometry. Geometrical drawing.
 Cf. QA 497-521.

465 Mensuration.**466 FAMOUS PROBLEMS.**

- 467 Circle squaring.
 468 Trisection of any angle.
 469 Duplication of the cube.

471 PROJECTIVE GEOMETRY. INVERSIONS. MODERN GEOMETRY.

See also QA 554, Projective methods (Analytic geometry).

SPECIAL TOPICS IN PLANE GEOMETRY.

- 481 Axioms. Postulates. Logic.
 See also QA 681, Foundations of geometry.
 482 Straight lines, angles, triangles, etc.
 483 Curves.
 484 Circle.
 485 Conics.
491 SPECIAL TOPICS IN SOLID GEOMETRY.
 497 Higher geometrical drawing (plane).

Descriptive Geometry.

Mechanical drawing, see T 351-357. Stereotomy, see TA 672.

- 501 General.
- 502 Parallel projection.
- 503 Orthogonal projection on 2 planes
- 505 Isometric projection.
- 507 Oblique projection.
- 511 Central projection.
- 515 Perspective.
 - Geometrical works only. Cf. NC 749-750, Drawing; NA 2710, Architecture; T 369, Mechanical drawing.
- 519 Shades and shadows.
 - Geometrical works only. Cf. NC 755, Drawing.
- Spherical projection, see GA 110-115, Map projection.
- 521 Miscellaneous special topics.
- 529 Geometry and Trigonometry (together).

Trigonometry.

- 531 General.
- 533 Plane.
- 535 Spherical.
- 537 Problems and exercises.
- 538 Special topics.

Analytic Geometry.

- 551 General.
- 552 Plane. Conic sections.
- 553 Solid.
- 554 Projective methods.
- 555 Problems and solutions.
- Special topics.
 - 556 Coordinates.
 - 557 Straight line and circle.
 - 559 Conics.
 - 561 Quadric surfaces.
 - 563 Maxima and minima.
 - Higher plane algebraic curves.
 - 565 General.
 - 567 Special curves.
 - Higher algebraic surfaces.
 - 571 General.
 - 573 Special surfaces.
- 581 Skew algebraic curves.
 - e. g., Twisted cubics, Curves of double curvature.

Transformations and general methods for algebraic configurations.

- 601 General. Collineation, etc.
- 603 Classification of curves and surfaces. Groups of points and curves.
- 605 Application of transcendental functions to curves and surfaces.
- 607 Enumerative geometry. Systems of curves and surfaces.
- 608 Connexes, complexes, congruences. Line geometry.
For algebraic configurations in hyperspace see QA 691.
- 611 Analysis situs. Topology.

Infinitesimal Geometry.

- 615 General.
- 621 Of curves.
- 623 Kinematic geometry. Roulettes.
- 624 Curvature.
- 626 Rectification and quadrature.
- 628 Transcendental curves.
- 631 Of surfaces.
- 634 Curvature.
- 636 Areas and volumes.
- 638 Transcendental surfaces.
- 639 Differential geometry of congruences, etc.

Differential Geometry.

- 641 General works. General theory of surfaces.
- 643 Curves on surfaces.
- 644 Minimal surfaces. Nets of plane curves.
- 645 Surfaces determined by relations of curvature, etc.
- 646 Conformal and other representations of surfaces.
See also QA 110-115, Map projection.
- 648 Deformation of surfaces.
- 649 Miscellaneous special topics.
- 681 **Foundations of geometry.**
- 685 **Non-Euclidean geometry.**
- 691 **Hyperspace.**
- 699 Popular works. Fiction. (Flatland, Fourth dimension, etc.)

ANALYTIC MECHANICS.

Mathematical works only classified here. Experimental mechanics in QC 122-168. Applied mechanics in TA 350. See also QB 351-421, Celestial mechanics.

802 HISTORY AND PHILOSOPHY.

Including general history of mechanics.

803 NEWTON'S PRINCIPIA and commentaries.

804 WORKS OF EULER, LAPLACE, LAGRANGE and their contemporaries.

805 RECENT TREATISES.

807 Elements. *.808 General space.*

809 PROBLEMS AND EXERCISES.

Statics.

See also Graphic statics in TG.

821 General.

823 Composition and resolution of forces at a point.

ATTRACTIONS AND POTENTIAL.

See also QA 401-411; QC 518.

825 General.

827 Ellipsoids and other special systems.

831 Rigid bodies. Forces and couples in three dimensions.

835 Chains and flexible surfaces.

839 Geometry of masses. Center of mass. Moments of inertia.

841 Kinematics. (Including composition of motions and displacements, relative motions, moving axes, theory of screws.)

See also Kinematics of machinery, TJ 175; Roulettes, QA 623; Kinematics of vibration and wave motion, QC 231.

Dynamics.

See also UF 820, Motion of projectiles (Ballistics).

845 Treatises.

846 Elements.

DYNAMICS OF A PARTICLE.

851 General. *852 General of equilibrium function*

Special.

853 Orbital and constrained motion.

855 Motion on surfaces.

RIGID DYNAMICS.

861 General.

862 Special systems (alphabetically). *A /*

e. g., .G 9, Gyroscope; .P 4, Pendulum; .T 7, Top. (See *after tables*)

863 Miscellaneous topics.

871 General methods in dynamics (Lagrange's equations, Least action, Stability of systems, etc.).

Statics and Dynamics of Fluids.

See also QB 410, Rotating masses of gravitating fluid.

901 General works.

903 Problems and exercises.

HYDROSTATICS.

905 General.

907 Special topics (Floating bodies, etc.).

See also VM 761, Stability of ships.

HYDRODYNAMICS.

See also QC 223, Mathematical theory of sound;

TC 160-179, Hydraulics.

911 General.

Special topics.

913 Kinematics of fluids. Irrotational motions. Sources
and sinks. Motion of solid bodies in perfect fluids.

925 Vortex motion.

927 Waves.

929 Viscous fluids.

930 **AERODYNAMICS.**

Elasticity.

See also TA 401-410, Strength of materials.

931 General.

935 Special topics. Vibration, Torsion, Impact, etc.

See also QC 191, QC 223.

QB: ASTRONOMY

(INCLUDING GEODESY)

CLASS QB
ASTRONOMY.

- 1 PERIODICALS, SOCIETIES, ETC.
- 3 COLLECTIONS (non-serial).
- 4 OBSERVATIONS.
(Alphabetically by place, except where the observatory has a well-known special name, e. g., Lick Observatory, not Mount Hamilton. Series of memoirs published by observatories are included here, but not annual reports. See QB 82.)
- 6 STAR CATALOGS (including zone observations, etc.).
See also QB 815, Photometric catalog; QB 821, Double stars; QB 835, Variables; QB 851, Clusters and nebulae; QB 881, Classed catalogs.
- EPHEMERIDES.
- 7 Early.
Modern.
- 8 Nautical almanacs (by countries, A-Z).
- 9 Other yearbooks.
- GENERAL TABLES.
- 11 Early.
- 12 Modern.
- 14 DICTIONARIES.
- HISTORY.
- 15 General.
- 16 Ancient.
See also CE 21-46, Ancient chronology.
- 17 Chinese.
- 18 Hindu.
- 19 Assyro-Babylonian, etc.
- 20 Egyptian.
- 21 Greek.
- 22 Roman.
- 23 Medieval.
Astrology.
- 25 History.
- 26 Medieval works.
Modern astrology, see BF 1651-1728.
- 28 Modern.
- 29 Renaissance to 1700.
- 31 18th century.
- 32 19th-20th centuries.
- 33 By countries, A-Z.
- 34

BIOGRAPHY OF ASTRONOMERS.

- 35 Collective.
- 36 Individual.
 e. g., .B8 Brahe.
 .C8 Copernicus.
 .G2 Galileo.
 .H6 Herschel, W.
 .K4 Kepler.
- 41 EARLY WORKS to 1700.
 See also QB 85, Early astronomical instruments; QB 215, Dialing;
 GA 6-7, Cosmography; VK 551, Navigation (early works).

GENERAL WORKS (since 1700).

- 42 18th century.
- 43 Since 1800.
- 44 DESCRIPTIVE WORKS (for general readers).
- 45 ELEMENTARY TEXTBOOKS.
- 46 RUDIMENTS.
 Cf. QB 63.
- 51 ESSAYS, LECTURES, ADDRESSES, ETC.
- 52 Miscellaneous speculations.
- 54 Plurality of worlds.
- 55 Astronomical myths, legends and superstitions.

61 STUDY AND TEACHING.

- 62 Outlines, laboratory manuals, etc.
- 63 Stargazers' guides.
- 64 Observers' handbooks.
- 65 Atlases and charts.
- 66 Use of globes (astronomical).
 See also GA 12.
- 67 Miscellaneous models.

68 Pictorial works, etc.

70 ^{Pictorial works. Including observatories.} OBSERVATORIES.

- 81 General.
- 82 Individual.
 (Including description, history, reports, etc., alphabeted as in QB 4.)
- 84 Observatory buildings.
 (Domes, piers, rising floors, chairs, etc.)

Astronomical Instruments.

- (Description, theory, and adjustment.)
- 85 Early.
 (Including descriptions of early observatories.)
- 86 Modern.
- 88 Telescopes. Objectives. Mirrors.
- 97 Equatorial mountings. Driving clocks.
 Siderostats. Heliostats.

Astronomical Instruments.

Modern--Continued.

- 101 Meridian instruments.
(Transit circle, zenith telescope, visual and photographic.)
- 103 Extra-meridian instruments.
(Altazimuth, almucantar, transit out of meridian, etc.)
- 105 Portable instruments.
(Transit, solar compass, etc.) See also VK 583, Sextant.
- 107 Clocks. Chronometers. Chronographs.
For use of chronograph in ballistics, see UF 820-840.
- 111 Eyepieces.
- 113 Micrometers.
- 115 Levels. Artificial horizons. Illumination, etc.
- 121 Astronomical photography.
- 135 Astronomical photometry.
Astronomical spectroscopy, see QB 465, 551, 871-873.
- 139 Telegraphic codes for transmission of astronomical data.

PRACTICAL AND SPHERICAL ASTRONOMY.

Nautical astronomy, see VK 551-585; Use of globes, see QB 66.

- 145 General.
- 147 Celestial sphere and coordinates.
- Correction and reduction of observations.**
See also QB 12, General tables.
- 151 General.
- 153 Personal equation.
(Including apparatus for its determination.)
- 154 Errors of adjustment, etc.
- REDUCTION TO CENTER OF EARTH.**
Refraction.
Theory and determination of constant.
- 156 Tables.
- 159 Parallax.
- CORRECTION FOR MOVEMENT OF EARTH AND EQUINOXES.**
(Including determination of constants by observation.)
- 161 General.
- 163 Aberration.
Electromagnetic theory in QC 671.
- 165 Precession and nutation.
- 167 Annual parallax.
- 168 Star reduction (from mean to apparent place).
- 169 Position of the pole.
- 171 Determination of the ecliptic.
- 175 Prediction of eclipses, occultations, and transits.
- 181 Miscellaneous phenomena at occultations and transits.

Geodetic Astronomy.

- 201 General. Determination of geographical positions.
- 205 Observations (by countries, A-Z).
 e. g. .A2, Collections.
 .M6, Mexico.
 .M7C9, Mexico—Cuernavaca.
 .U4-5, United States.
 .U6, States, A-W.
 .U7, Cities, A-Z.
- See also QB 296.
- 207 **AZIMUTH.** Determination of meridian.
- 209 **TIME.**
 Historical chronology, calendar, etc., in CE.
- 211 Sidereal and solar, and their conversion.
- 213 Methods of finding the time. *217 I think measuring*
- 215 Sun-dials and dialing. *to*
- 216 Sunrise and sunset. *e. g. H. 12 glasses*
- 217 Equation of time. *cf. TS 546-547 watches*
- 221 Time signals, etc. *12 clocks.*
- 223 Systems and standards.
- 224 Prime meridians.
- LONGITUDE.**
- 225 Methods.
- 228 Tables and ephemerides.
- 229 Observations.
- LATITUDE.**
- 231 Methods.
- 235 Observations.
- 237 Variation of latitude.
- 217 I think measuring*
- GEODESY.**
- 281 History and descriptive works.
- 283 Mathematical theory of the figure of the earth.
 See also QA 827, Attractions of ellipsoids; QB 410, Rotating masses of gravitating fluid.
- 291 Special arc measures.
- 294 International congresses, etc.
- 296 Observations (by countries, A-Z).
- 298 Biography.
 e. g., .H4, Hassler, Superintendent of United States Coast Survey.
- 301 **GEODETIC SURVEYING.**
 Plane surveying in TA 501-625.
- 303 Base-measuring (including apparatus).
 See also QC 101, Standards of length.
- 311 **Triangulation.**

GEODETTIC SURVEYING.

Triangulation—Continued.

- 321 Theory and computation.
See also QA 275, Least squares.

- 325 Traverse surveying.
(Geodetic works only.)
Cf. TA 545, General surveying.

Gravity Determinations.

- 331 Theory and description of apparatus.
See also QA 862.P4, Dynamics of pendulum.
Observations.
- 335 General. Length of seconds pendulum, etc.
- 338 Plumb line deflections.
- 339 Disturbances (lunar, solar, earth movements).
- 341 Constant of gravitation. Mean density of the earth.

THEORETICAL ASTRONOMY AND CELESTIAL MECHANICS.

- 351 General.
Calculation of Orbits.
- 355 General.
- 357 Comets.
For orbits of individual comets, see QB 723-727.

Perturbations.**PLANETARY THEORY.**

- 361 General.
- 362 Special topics.
- 369 Tables and observations.
Individual planets.
- 371 Mercury, theory and tables.
- 372 Venus, theory and tables.
- 374 Sun's apparent motion, theory and tables.
- 376 Mars, theory and tables.
Minor planets, theory and tables.
- 377 General.
Individual.
- 378 Minor planets, by name, A-Z.
- 379 Minor planets, by number.
Prefer names for named planets.
- 384 Jupiter and Saturn, theory and tables.
- 387 Uranus, theory and tables.
- 388 Neptune, theory and tables.
- 389 Ultra-Neptunian planets.

LUNAR THEORY.

- 391 General.
- 392 Special topics.

Perturbations.**LUNAR THEORY—Continued.**

- 397 Observations.
 399 Tables.
- SATELLITES.**
- 401 General.
 403 Satellites of Mars.
 404 Satellites of Jupiter.
 405 Satellites and ring system of Saturn.
 406 Satellites of Uranus.
 407 Satellites of Neptune.
 410 Figures of equilibrium of rotating masses of fluid.
- Theory of Tides.**
 See also GC, Oceanography; VK 602-782, Tide tables.
- 414 Early works (to 1800).
 415 General works, 1801-
 416 Special.
 419 Miscellaneous.
 Instruments, see GC 306.
- 421 Theory of double-star systems.

DESCRIPTIVE ASTRONOMY AND ASTROPHYSICS.

Periodicals, societies, etc., in QB 1.

Descriptive astronomy (general works) in QB 44.

461 **ASTROPHYSICS (GENERAL WORKS).**465 **Astronomical spectroscopy.**

See also QB 551, Spectroscopy of sun and eclipses;
 QB 871-903, Stellar spectroscopy;
 QC 451, General spectroscopy.

Solar System.

- 501 General.
 502 Miscellaneous speculations.
 505 Physical conditions (atmospheres, resisting medium, etc.).
 507 Proper motion in space.
 508 Solar parallax and related constants.
- TRANSIT OF VENUS.**
- 509 General.
 511 1761 and 1769.
 512 1874.
 513 1882.
 515 Transit of Mercury.
 516 Observations of Mars and minor planets.
 518 Other methods.

Sun.

- 521 General. *See Tables etc. Cf. 511-513*
 523 Mass, diameter, rotation, etc.

Sun—Continued.

- 525 Sun spots and faculæ.
 528 Atmosphere, chromosphere, etc.
 529 Corona.
 531 Radiation, temperature, etc.
 See also QC 911, Solar radiation (Meteorology).
 539 Miscellaneous topics.

Solar Eclipses.

- 541 General.
 542 Before 1800.
 See also CE, Chronology.
 543 1800-1899.¹
 544 1900-1999.¹
 551 Spectroscopy of sun and eclipses.
 579 Lunar eclipses.

Moon.

- 581 General.
 583 Distance, parallax.
 585 Rotation, libration, and shape.
 588 Temperature, radiation, brightness, phases.
 591 Surface, physical condition, meteorology.
 595 Photographs, maps, drawings.

Planets.

See also QB 401-406, Satellites; QB 501, Solar system; QB 54, Plurality of worlds.

- 601 General.
 603 Miscellaneous topics.
 606 Inferior planets.
 607 Intramercorial planets.
 611 Mercury.
 621 Venus.
 631 Earth (as a planet).
 633 Rotation.
 638 Curiosa and miscellany.
 639 Superior planets.
 641 Mars.
 651 Minor planets.
 661 Jupiter.
 671 Saturn.
 681 Uranus.
 691 Neptune.

Cf. QB 388.

¹ Book number=last two figures of the year, followed by author number.

Comets.

See also QB 357, Calculation of orbits.

- 721 General.
- 722 Catalogs.
- 723 Periodic comets (alphabetically by name).
- 724 Comets before 1700.
- 725 1700-1799.¹
- 726 1800-1899.¹
- 727 1900-1999.¹
- 729 Distribution of comets.
- 731 Nature and constitution. (Before the spectroscope.)
- 732 Nature and constitution (modern views).

Meteors.

- 741 General.
- 743 Methods of observation and geometrical topics.
(Radiants, altitude, etc.)
- Periodic showers.
- 745 November.
- 746 August.
- 748 Orbits.
- 749 Relation between meteors and comets.
- 751 Other theories of the origin of meteors.
- 753 Remarkable meteors, fireballs.
- 755 Meteorites.
Mineralogical works in QE 395.
- 761 Zodiacal light.
- 763 Counter glow. Gegenschein.

Stars.

See also QB 6, Star catalogs.

- 801 General.
- 802 Constellation figures. Star names.
See also QB 63, Stargazers' guides.
- 811 Proper motion.
- 813 Parallax and distance. 805 Particular stars, A. G. Q. 15, 821, 822, 823, 824, 825
- 815 Magnitude. Photometric catalogs.
- 816 Color.
See also QB 829, Double stars
- 817 Radiation. Bolometry.
- 819 Distribution. Milky Way.
- DOUBLE AND MULTIPLE STARS.**
See also QB 421; QB 903.
- 821 General. Observations. Catalogs.
- 823 Particular stars.
- 829 Colors of double stars.

¹ Book number=last two figures of the year, followed by the author number.

Stars—Continued.

VARIABLE STARS. ALGOL SYSTEMS.

See also QB 895.

- 835 General. Observations. Catalogs.
 837 Particular stars or clusters.
 841 Temporary or new stars.

CLUSTERS AND NEBULÆ.

See also QB 891.

- 851 General. Observations. Catalogs.
 853 Clusters.
 855 Nebulæ.

STELLAR SPECTROSCOPY.

See also QB 465, Astronomical spectroscopy (general).

- 871 General.
 873 Instruments and apparatus.
 875 Chemical and physical constitution.
 881 Classification of stars. (Including classed catalogs.)
 883 Study of special types of spectra.
 891 Nebulæ and clusters.
 895 Variables and new stars.
 901 Motion in the line of sight. Radial velocities.
 903 Spectroscopic observations on double stars.
 981 **Cosmogony.**
 Nebular hypothesis.
 Meteoritic hypothesis.
 991 End of the universe.

QC: PHYSICS

(INCLUDING WEIGHTS AND MEASURES, EXPERIMENTAL
MECHANICS, TERRESTRIAL MAGNETISM,
AND METEOROLOGY)

CLASS QC
PHYSICS

- 1 PERIODICALS, SOCIETIES, ETC.
- 3 COLLECTED WORKS (non-serial).
- 5 DICTIONARIES.
- 6 PHILOSOPHY. RELATIVITY
- 7 HISTORY.
BIOGRAPHY OF PHYSICISTS.
- 15 Collective.
- 16 Individual.
 - e. g., .F2, Faraday.
 - .K3, Kelvin.
 - .N7, Newton.
 - .R5, Rowland.
- EARLY WORKS.
- 17 16th and 17th centuries.
- 19 18th century.
- 20 MATHEMATICAL PHYSICS.
GENERAL WORKS (Experimental physics).
- 21 RECENT TREATISES AND ADVANCED TEXTBOOKS.
- 23 Elements.
- 25—Rudiments.
- 30 STUDY AND TEACHING.
See also QC 128.
- 31 Outlines, syllabi, etc.
- 32 Problems, exercises, etc.
- 33 Experiments.
Laboratory manuals.
- 35 Elementary.
- 36 Laboratory blanks.
- 37 Advanced.
- 39 General theory of physical measurements.
- 41 Laboratory technique.
- 51 LABORATORIES.
See also QC 100, Standardizing bureaus; QC 541, Electrical laboratories.
- 53 INSTRUMENTS AND APPARATUS.
See also QC 102-104, Instruments for measurement of length and volume; QC 107, Balance; QC 165-166, Manometers, air pumps, etc.; QC 176, Radiometer; QC 245, Phonograph; QC 271-278, Thermometers; QC 291, Calorimeters; QC 371-375, Optical instruments; QC 543-544, Electrical apparatus and instruments; QC 819, Magnetic instruments; QC 876, Meteorological instruments.

- 61 TABLES, FORMULÆ, SYMBOLS.
 71 ESSAYS, LECTURES, ADDRESSES, ETC.
 73 Force and energy.
 75 Miscellaneous speculations.

WEIGHTS AND MEASURES.

See also HF 5711-5715, Tables of money, weights and measures;
 QC 536-537, Electrical units and standards.

- 81 PERIODICALS, SOCIETIES, ETC.
 81. 5 Museums, exhibitions, etc.
 Cf. QC 119, Catalogs (of manufacturers).
 82 DICTIONARIES (OF TERMS).
 See QC 88 for general works with an alphabetical arrangement of countries.

HISTORY:

- 83 General.
 84 Ancient.
 85 Medieval.
 86 Modern.
 88 GENERAL WORKS.
 89 By countries, A-Z.

Metric System.

- 91 General works.
 93 Study and teaching (including textbooks).
 94 Conversion tables.
 96 Miscellaneous proposals for new systems.
 99 Eccentric literature (pyramid inches, etc.).
 100 Standards and standardizing bureaus, general description.
 100. 5 Measuring instruments.
 101 STANDARDS OF LENGTH.
 102 Measurement of length (including instruments).
 Measurement of area (including instruments), see QA 81,
 Planimeter.
 104 Measurement of volume (including instruments).
 105 STANDARDS OF MASS.
 106 Measurement of mass and weight.
 107 Balance.
 111 Measurement of density and specific gravity.
 114 Tables of specific gravities.
 119 Catalogs, etc.

EXPERIMENTAL MECHANICS.

Analytic mechanics in QA 802-935.

General and Solids.

- 122 HISTORY.
 General history of mechanics in QA 802.

General and Solids—Continued.

- 123 EARLY WORKS TO 1800.
 125 TREATISES.
 127 ELEMENTS.
 128 Study and teaching.
 See also QC 30-41.
 129 Problems, exercises, etc.
 131 Miscellaneous topics.
 See also UF 820, Motion of projectiles (Ballistics); TL 570-575, Laws of flight, aerodynamics, etc.

Fluids.

- 141 History.
 EARLY WORKS.
 142 Ancient.
 143 16th and 17th centuries.
 144 18th century.
 145 RECENT GENERAL WORKS.
 147 LIQUIDS AT REST. Floating bodies.
 See also QA 905-907, Hydrostatics.
 151 LIQUIDS IN MOTION.
 Technical hydraulics in TC 160-179.
 157 Waves.
 Mathematical theory in QA 927.
 159 Vortex rings, etc.
 Mathematical theory in QA 925.
 161 GASES. (Pneumatics.)
 See also QC 286; QD 531.
 165 Measure of pressure. Manometers.
 166 Air pumps, etc.
 168 Motion of gases.
 e. g., Flow of air through apertures.
 Cf. TJ 1025, Mechanical engineering.

CONSTITUTION AND PROPERTIES OF MATTER.

See also QD 453-999, Physical chemistry and crystallography.

- 171 GENERAL WORKS.
 173 Structure of matter and ether. Molecular and atomic physics.
 See also QC 671, Aberration; QC 721, Radioactive substances.
 175 Kinetic theory of gases.
 176 Radiometer.
 177 Theories of the ether.
 178 Theories of gravitation.
 179 Molecular dimensions.

Special properties of matter.

- 182 Absorption and adsorption of gases.
 183 Capillarity (including Brownian movements), Surface-tension, Cohesion, etc.
 185 Diffusion. Transpiration.
 Osmosis, see QD 543, Physical chemistry; QH 615, Cytology; QK 725, Physical properties of plant cells.
 189 Viscosity.
 191 Elastic properties of solids.
 Mathematical theory in QA 931-935; Materials of construction in TA 410-490; Crystals in QD 933.
 197 Friction, etc.
 220 Sound, light, and heat.

SOUND (Acoustics).

See also QP 461-469, Physiological acoustics; ML 3805-3817, Musical acoustics; NA 2800, Architectural acoustics.

GENERAL WORKS.

- 222 Early works to 1800. *222-5 Early works*
 223 Mathematical theory.
 225 General, experimental, and descriptive.
 227 Laboratory manuals and apparatus.
 229 Miscellaneous speculations.
 Special topics.
 231 Kinematics of vibrations and wave motion.
 233 Propagation of sound.
 Velocity, reflection, refraction, interference, diffraction, etc.
 Vibrations.
 235 Strings, rods, membranes, plates
 241 Gases in tubes, etc. Resonance.
 243 Sound-waves (amplitude, energy, frequency, etc.).
 245 Phonograph. *(See 220.5)*
 246 Analysis of sounds (by phonograph, etc.).

HEAT.

- 252 HISTORY AND PHILOSOPHY.
 253 EARLY WORKS (to 1800).
 254 TREATISES (Mathematical and General).
 255 ELEMENTS.
 257 ESSAYS, LECTURES, ADDRESSES, ETC.
 261 STUDY AND TEACHING (including lecture experiments, etc.).
 263 Laboratory measurements.

Thermometry.

See also QC 876, 902, Meteorological instruments.

- 271 General.
- 272 Mercury and other liquids.
- 273 Air and gases.
- 274 Electrical. Resistance thermometers. Thermoelements.
- 275 Other.
- 277 High temperatures (Pyrometry).
- 278 Low temperatures.
- 281 **Relations between pressure, volume, and temperature.**
- 282 Solids.
 - See also QD 937, Thermal properties of crystals.
- 284 Liquids.
- 286 Gases.

Calorimetry.

See also QD 511, Thermochemistry; TP 320, Fuel.

- 291 General.
- 295 Specific heats of solids and liquids.
- 297 Specific heats of gases and vapors.

Change of State.

- 301 General.
- 303 Fusion and solidification. Heats of fusion.
- 304 Saturated vapors. Vapor pressure. Evaporation.
 - Ebullition. Heats of vaporization.
 - Vapor densities see QD 533.
 - Liquefaction of gases see QD 535.
- 307 Continuity of state. Critical state. Critical point.
 - Equations of state.
- 309 Vaporization of solids. Sublimation.
- 310 Heats of dissolution.

Thermodynamics.

- 311 General.
 - See also TJ 265, Application to heat-engines.
- 312 Mechanical equivalent of heat.
- 318 Other special topics on Heat and Energy.
 - e. g. Absolute temperature.
- 319 Miscellaneous speculations.

Transmission of heat.

- 320 Conduction.
 - 321 Mathematical theory.
 - 323 Experimental.
- 327 Convection.
- 331 Radiation and absorption. Laws of cooling.
- 338 Instruments for measurement of radiant heat (Bolometer, Thermopile, etc.).
 - See also QC 457, Infra-red spectrum.

LIGHT (Optics).

See also QP 475-495, Physiological optics.

- 353 EARLY WORKS TO 1800.
 GENERAL WORKS, 1801-
- 355 Mathematical and theoretical. Physical optics.
 357 Experimental and descriptive.
- 361 ESSAYS, LECTURES, ADDRESSES, ETC.
 363 STUDY AND TEACHING.
 365 Qualitative experiments and elementary laboratory manuals.
 367 Optical measurements (Advanced laboratory manuals).
 368 Optical constants.
 369 Tables.
- Optical Instruments and Apparatus.**
- 371 General.
 373 Special (alphabetically).
 e. g. .H5 Heliostat.
 .K3 Kaleidoscope.
 .O6 Opera glasses.
 .P7 Polariscopes.
 .S3 "Schieren" apparatus.
 .S7 Spectrometer.
 .S8 Stereoscope.
 Lantern, see Q 186.
 Microscope, see QH 201-277.
- 375 Glass (for optical instruments, etc.).
- Geometrical Optics.**
- 381 General.
 See also TR 220, Photographic optics.
 Special topics.
- 383 Mathematical and theoretical.
 385 Experimental (Reflection, Refraction, Mirrors, Lenses).
 387 Refractive indices and refractometers.
 389 Transmission of radiation.
- 391 **Photometry.**
 See also QB 135, Astronomical photometry;
 TK 4175, TK 4367, Electric light testing; TP 754, Gas light testing.
- Physical Optics.**
 General works, see QC 355-7.
- 401 THEORIES OF LIGHT.
 402 Corpuscular theory.
 403 Wave theory.
 See also QC 670, Electromagnetic theory.
- 406 Miscellaneous speculations.

Light.

Physical Optics—Continued.

- 407 Velocity of light.
 411 Interference.
 (Newton's rings, Interferometer, etc.)
 415 DIFFRACTION.
 425 Reflection and refraction.
 For geometrical topics under this head see QC 383-385.
 431 Dispersion.
 435 Anomalous dispersion.
 437 Absorption.
 POLARIZATION.
 See also QD 481, Stereochemistry; TP 382, Saccharimetry.
 441 General.
 Special topics.
 443 Production and measurement.
 445 Rings and brushes of crystals.
 See also QD 941, Optical properties of crystals.

Spectroscopy.

- 451 General.
 For applications to analytic chemistry, see QD 95.
 For applications to astronomy, see QB 465, 551, 871-903.
 453 Tables, etc.
 (Including wave-length tables.)
 454 Miscellaneous.
 e. g., Spark spectra. Arc spectra. Dark lines, Spectrum of acetylene flame, Spectra of miscellaneous groups of elements, gases, etc.
 455 SOLAR SPECTRUM. (Wave-length measurements and maps.)
 See QB 551 for works relating to the constitution and physical condition of the sun.
 457 Infra-red spectrum.¹
 See also QC 338, Bolometer, thermopile, etc.
 459 Ultra-violet spectrum.¹
 462 Spectra of special elements, A-Z.
 465 Instrumental details, adjustment, etc.
 467 Analysis of bright lines. Effect of pressure, Stark effect, etc.
 See also QC 675, Zeeman phenomenon.
 475 Emission of radiation—general.
 477^{A76} Fluorescence.
 478 Phosphorescence.
 481 X-rays (Röntgen radiation).
 See also QC 711, Discharges through gases; RM 881, Medical works.
 483 Electric radiations (General).
 485^{A90} Other radiations (N rays, etc.).
 cf. See also QC 721, Radioactivity.
 495 Color (including music of colors).

¹ For absorption, see QC 437, with added entry here.

ELECTRICITY AND MAGNETISM.

Applications in TK, Electrical industries.

- 501 PERIODICALS, SOCIETIES, ETC.
 503 COLLECTED WORKS (non-serial).
 505 DICTIONARIES.
 507 HISTORY.
 BIOGRAPHY OF ELECTRICIANS.
 514 Collective.
 515 Individual.
 e. g., .O3 Oersted.
 .R9 Rühmkorff.
 .T5 Thompson, S. P.
 .V8 Volta.
 Galvani, see Q 143.G 4.
- EARLY WORKS.
 516 To 1790 (Boyle, Coulombe, Franklin, etc.).
 517 1790-1850 (Galvani, Volta, Oersted, etc.).
- GENERAL WORKS SINCE 1850.
 518 TREATISES (including Mathematical theory).
 521 Descriptive and experimental.
 523 ELEMENTS.
 527 POPULAR WORKS.
 529 TABLES, ETC.
 530 STUDY AND TEACHING.
 531 Outlines, syllabi, etc.
 532 Problems and exercises.
 533 Lectures and lecture experiments.
 534 Elementary laboratory manuals.
- 535 ELECTRICAL MEASUREMENTS.
 See also Electrical testing in TK.
 536 Electric and magnetic units. (Theory.)
 537 Standards.
- 541 LABORATORIES.
 APPARATUS AND INSTRUMENTS.
 543 General.
 544 Special (alphabetically).
 See also QC 573, Electrical machines; QC 587, Condensers; QC 603-605,
 Electric batteries; QC 645, Induction coils; Electric meters
 in TK.
- 561 Miscellany.
 Static Electricity.
 See also QA 825, Theory of potential; QC 961, Atmospheric electricity.
- 571 General works.
 573 Electrical machines (frictional and induction).

Electricity.**Static Electricity—Continued.**

- 577 Electro-capillary phenomena.
 581 Special topics.
 e. g., Mathematical theory.
 Potential difference.
 585 Dielectrics.
 587 Condensers.
 589 Measurement of capacity, etc.
 595 Pyro- and Piezo-electricity.
 See also QD 939, Electric properties of crystals.

601 Electric Current (general).

- Cf. QC 641, Alternating currents.
 QD 553-561, Electrolysis.

Electric batteries.

- 603 General and primary (Standard cells, Dry cells).
 605 Secondary (Storage cells).
 607 Ohm's Law. Net works.
 609 Conduction in two and three dimensions.
 610 Conduction in gases and vapors.
 Special experimental topics.

611 Conductivity. Resistance.

See also QD 565, Conductivity of electrolytes.

615 Measurements of currents. The Voltmeter.**618 Electromotive force.****621 Thermo-electricity.****623 Heating effects of currents.****Electrodynamics.**

- 631 Mutual actions of steady currents and of currents and magnets.
 638 Mutual and self-induction.
 641 Alternating currents (Theory).
 See also Alternating current machinery in TK.
 643 Corona phenomena.
 645 Induction coils.
 Transformers, see TK.

Electric Waves.**661 Theory.****665 Experimental.**

See also Wireless telegraphy in TK.

670 ELECTROMAGNETIC THEORY OF LIGHT.**671 Aberration and moving media.**

Astronomical works on aberration in QB 163.

673 Electro-optical phenomena (Kerr phenomenon, etc.)**675 Magneto-optical phenomena (Faraday and Zeeman phenomena, etc.).**

Electricity—Continued.**Electric Discharge.**

- 701 General.
- 702 Ionization. Convective loss. Points. Leakage.
- 703 Disruptive discharge. Electric spark.
See also QC 966, Lightning; QC 454, Spectra of special elements.
- 705 Voltaic arc.
Arc lighting in TK.
- 711 Discharge through rarefied gases. Cathode rays, canal rays,
etc.
See also QC 481, X-rays.
- 715 Effects of light, X-rays, etc., on the discharge.
- 721 **Radioactivity and Radioactive Substances.**
Physics of the electrons.

Magnetism.

- 751 Early works (to 1800).
- 753 Recent general works.
Special topics.
- 757 Magnets.
- 760 Electromagnet.
- 761 **MAGNETIC INDUCTION.**
(Theory, measurement of magnetic force, susceptibility,
permeability, hysteresis, relation between thermal,
elastic and magnetic properties, magnetostriction, etc.)
- 771 Diamagnetism.

TERRESTRIAL AND COSMICAL PHYSICS.

- 801 PERIODICALS, SOCIETIES AND COLLECTIONS. *9 Collections.*
- 802 OBSERVATIONS (at fixed stations, alphabetically).
- 803 OBSERVATIONS (by countries, alphabetically). *INSTITUTIONS*
- 804 HISTORY.
- 805 BIOGRAPHY.
- 806 GENERAL WORKS.
- 807 Miscellaneous speculations.
- 808 Observatories.

TERRESTRIAL MAGNETISM.

- 811 PERIODICALS, SOCIETIES AND COLLECTIONS.
- 813 HISTORY.
- 814 Early works (to 1800).
See also QC 751.
- 815 GENERAL WORKS.
- 816 Miscellaneous speculations.

Terrestrial magnetism—Continued.

- 818 Observatories.
 .A2, General; .A5-Z, Special.
- 819 Instruments.
- 820 Method of observation. Instructions for observers.
- 825 MAGNETIC SURVEYS (not divided by countries).
 .1 North America.
 .2 Mexico, Central America and West Indies.
 .3 South America.
 .4 Europe.
 .5 Asia.
 .6 Africa.
 .7 Australia and New Zealand.
 .8 Arctic.
 .9 Antarctic.
- 826 Oceanic areas (alphabetically).
- 827 Magnetic field of the earth, analysis and theory.
- 828 Secular variation.
- 830 MAGNETIC OBSERVATIONS (at fixed stations, alphabetically).
 831 Diurnal variation.
 833 Other periodic variations.
 835 Magnetic disturbances.
 836 Terrestrial magnetism and sunspot period.
 837 Terrestrial magnetism and eclipses.
 839 Terrestrial magnetism and meteorological phenomena.
 841 Terrestrial magnetism and geological structure.
 843 Terrestrial magnetism and earthquakes.
 845 Earth currents.
- 849 Magnetism of ships and deviation of compass.

METEOROLOGY.

- 851 PERIODICALS, SOCIETIES, ETC.
 See also QC 801.
- 852 COLLECTIONS (non-serial). *coll.*
- HISTORY.
- 855 General.
- 857 Local (by countries, alphabetically).
- 858 Biography.
- 859 EARLY WORKS (TO 1800).
- 861 TREATISES.
- 863 ELEMENTS. *202 H3 10, H3 2310, 27*
- 865 ESSAYS, LECTURES, ADDRESSES, ETC.
- 866 Miscellany.
- 869 STUDY AND TEACHING.

- 871 Methods of observation. Instructions for observers.
 872 Telegraphic cipher codes for meteorological data.
 873 Tables (general).
 874 Computation and analysis.
 875 Observatories and weather services.
 876 Instruments (general).
 For special instruments see:
 QC 886, Barometers—Mercury.
 896, Barometers—Aneroid.
 902, Temperature.
 912, Solar radiation.
 916, Aqueous vapor.
 923, Clouds.
 926, Rainfall.
 932, Wind.
 951, Storms. Barocyclonometer, etc.
 962, Atmospheric electricity.
- 877 Weather signals, storm warnings, etc.
 878 Construction of weather maps, etc.
 879 Exploration of the upper regions of the air (kites, instruments, etc.; Mountain observatories).
 See also TL 501-820, Aeronautics.
 Marine atmosphere, see QC 994.
- 880 Mechanics and thermodynamics of the atmosphere.
 Chemistry of the air in QD 163. *(Composition of the atmosphere, etc.)*
- 882 Impurities and dust of the atmosphere.
 883 Periodicity. Cosmical relations. Influence of sun and moon.
 884 Geological climate. Paleoclimatology.
 Ci. QE 697-698.
- Atmospheric Pressure.**
- 885 General.
 886 Mercury barometers and barographs.
 887 Tables for reductions.
 889 Distribution, isobars, etc.
 891 Variations and oscillations.
 895 Barometric measurement of heights.
 896 Aneroid barometer and barographs.
- Temperature and radiation.**
- Atmospheric temperature.
 901 Distribution, isotherms, etc.
 902 Instruments and methods of observation.
 903 Variations.
 905 Winter temperatures.
 906 Summer temperatures.
 907 Earth temperature.
 Sea temperature, see GC 161-177.

Temperature and radiation—Continued.

- 909 Rivers, lakes, and springs—Temperature.
 911 Solar radiation and sunshine. Atmospheric absorption.
 912 Instruments (actinometers, sunshine recorders, etc.).

Aqueous Vapor and Rain.

- 915 Vapor (general). Humidity. Evaporation.
 916 Instruments (hygrometers, psychrometers, etc.).
 917 Tables.
 918 Atmospheric nucleation. Condensation.
 920 Forms of water (general).

CLOUDS.

- 921 Formation and varieties of form.
 922 Observations (of altitude, motion, etc.).
 923 Methods of observation and instruments.

RAIN AND RAINFALL.

- 925 General.
 Local (by countries A-Z).
 . 1 North America, United States, Canada.
 .U8. U. S. States, A-W.
 . 2 Mexico, Central America, and West Indies.
 . 3 South America,
 . 4 Europe.
 . 5 Asia.
 . 6 Africa.
 . 7 Australia and New Zealand.
 (Divided alphabetically by colony.)
 . 8 Pacific and other Oceanic islands.
 926 Instruments (rain gauges, etc.).
 929 Special topics (alphabetically).
 e. g., .D5 Dew formation.
 .D8 Droughts.
 (.F6) Floods, see GB 1201 -, Hydrography.
 See also descriptions in local history,
 D-F; Relief. HV; River regulation, TC.
 .F7 Fog formation and distribution.
 .F8 Forests, Influence of.
 .H1 Hail.
 .H6 Hoarfrost.
 .R1 Rain making.
 .R2 Rain without clouds.
 .S5 Showers of miscellaneous matter.
 .S7 Snow.

Wind.

- 931 General.
 932 Anemometers and other instruments.
 Special topics.
 933 Direction and velocity.
 934 Wind relation to atmospheric pressure.
 935 Upper currents.
 939 Constant, local, and periodical winds (alphabetically).
 e. g., .F6, Föhn; .M7, Monsoons; .M8, Mountain and Valley winds;
 .N8, Northers; .T7, Trade-winds.
 940 Special countries and regions, A-Z.
 e. g., .A8, North Atlantic Ocean.
 941 **STORMS** (general).
 942 Laws of cyclonic storms.
 943 Applications for navigators.
 Geographical distribution of cyclones.
 945 Atlantic and West Indies (hurricanes).
 947 India and the Indian Ocean.
 948 China seas and Pacific (typhoons).
 951 Miscellaneous topics.
 e. g., Barocyclonometer.
 955 **TORNADOES.**
 957 Waterspouts.
 958 Dust storms.
 959 Special countries, A-Z.

Atmospheric Electricity.

- 961 General.
 962 Instruments and methods of observation.
 963 Observations of potential variation.
 966 Lightning.
 Application to lightning rods, TH 9057-9092.
 968 Thunderstorms.
 969 Miscellaneous electrical phenomena.

AURORA.

- 971 General.
 972 Special.
 See also Magnetic disturbances, QC 835.

Meteorological Optics.

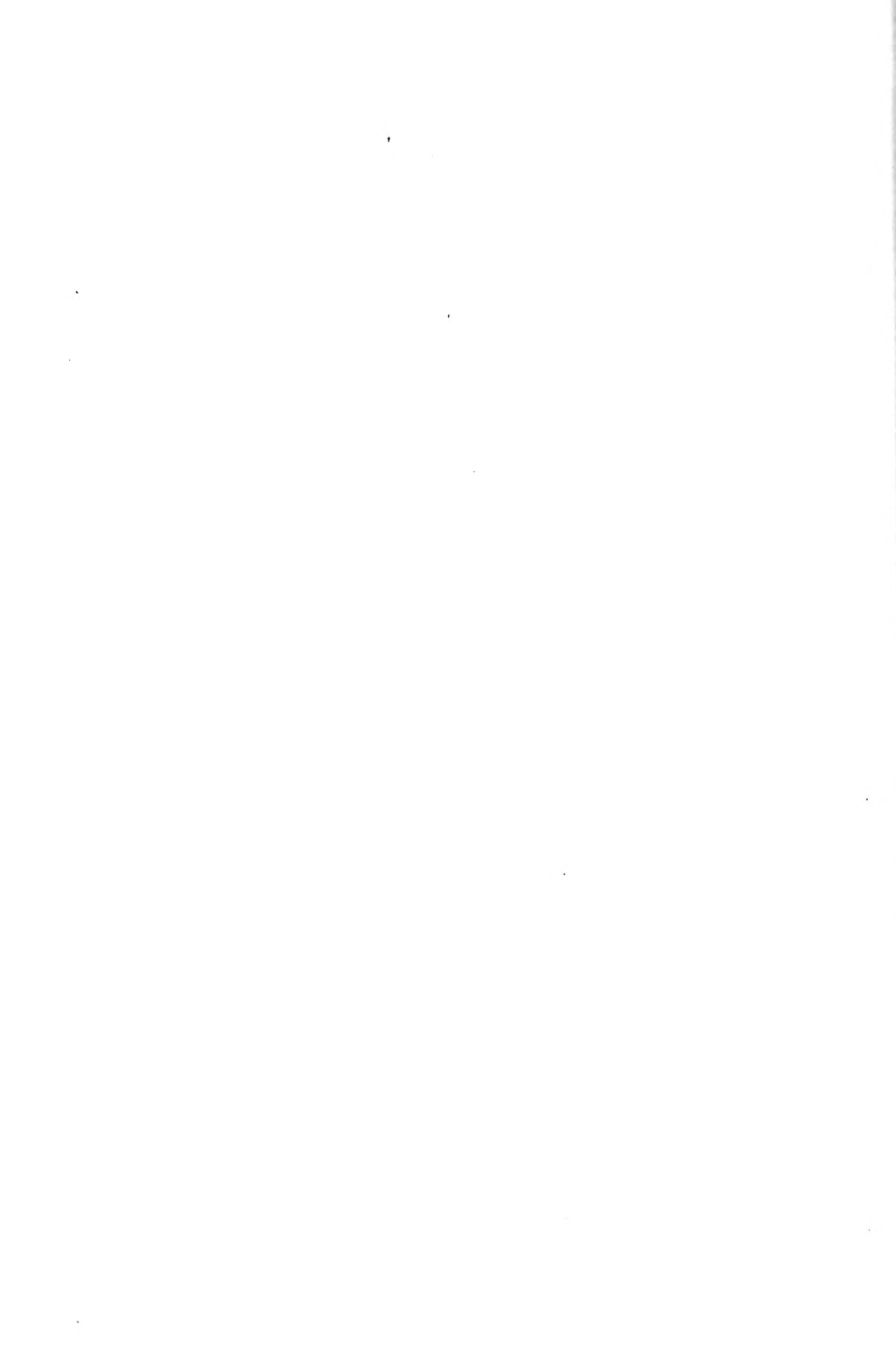
- 975 General.
 976 Special topics, alphabetically.
 e. g., .C6, Coloration of sky; .H1, Halos; .M6, Mirage; .P7, Polarization;
 .R1, Rain band spectrum; .R2, Rainbows; .R4, Atmospheric refraction;
 .T6, Transmission of the atmosphere; .T7, Transparency of the atmosphere. .T9, Twilight phenomena.

Climatology and Weather.

- 981 General.
GEOGRAPHICAL DIVISIONS (meteorological registers, weather reports, and climate of special regions).
- 983 United States and North America in general.
984 States, A-W.
985 ^{985.5} Canada. *P. 1. 1. 1.*
986 Mexico and Central America (by countries, A-Z).
987 West Indies (by islands, A-Z).
988 South America (by countries, A-Z).
989 Europe (by countries, A-Z).
990 Asia (by countries, A-Z).
991 Africa (by countries, A-Z).
992 Australia and New Zealand (by colonies, A-Z).
993 Pacific and other Oceanic islands, A-Z.
993. 5 Tropics (general).
See also Special countries.
- 994 Ocean and polar areas.
- . 1 Atlantic Ocean (general).
 - . 2 Atlantic, North.
 - . 3 Mediterranean.
 - . 4 Atlantic, South.
 - . 5 Indian.
 - . 6 Pacific, North.
 - . 7 Pacific, South.
 - . 8 Arctic.
 - . 9 Antarctic.
- 995 **WEATHER FORECASTING.**
998 Weather lore.
999 Weather almanacs and miscellany.

QD: CHEMISTRY

(INCLUDING CRYSTALLOGRAPHY)



CLASS QD
CHEMISTRY

Physiological chemistry, see QP 501-801.

Chemical technology, see TP.

Medical and Pharmaceutical chemistry, see RS 403-431.

Agricultural chemistry, see S 583-588.

- 1 PERIODICALS, SOCIETIES, ETC.
- 2 EXHIBITIONS. MUSEUMS.
- 3 COLLECTIONS (non-serial).
- 4 ENCYCLOPEDIAS.
- 5 DICTIONARIES.
See also QD 66, Dictionaries of solubilities.
- 7 NOMENCLATURE. *The IUPAC System*.
- 7 HISTORY.
Cf. QD 248, History of organic chemistry.
- 11 General.
- 13 History of alchemy.
- 14 Early to end of 18th century.
- 15 19th-20th centuries.
- 18 Local (by countries alphabetically).
- BIOGRAPHY OF CHEMISTS.
- 21 Collective.
- 22 Individual.
 - e. g., .B5 Berzelius.
 - .B9 Bunsen.
 - .D2 Dalton.
 - .L4 Lavoisier.
 - .L7 Liebig.
 - .P8 Priestley.
- 23 DIRECTORIES.
- ALCHEMY.
- History, see QD 13.
- 24 Biography.
 - .A1, Collected biography.
- 25 General works before 1800.
 - .A2, Collections.
- 26 General works, 1801-
 - .A2, Periodicals and societies.
 - .A3, Collections.
- Special topics.
- 26.3 Alkahest. Universal solvent.
- 26.5 Elixir of life.
Philosopher's stone, see QD 25.

EARLY WORKS.

- 27 17th-18th centuries.
(Becher, Boyle, Cavendish, Priestley, etc.)
Lavoisier to 1860.
- 28 Treatises.
- 30 Manuals and textbooks.
- 31 RECENT TREATISES AND ADVANCED TEXTBOOKS.
- 33 Elementary textbooks.
- 35 Rudiments and juvenile works.
- 37 Popular works.
- 38 Recreations. Experiments, magic, etc.
- 39 ESSAYS, LECTURES, ADDRESSES, ETC.
39. 5 Chemistry as a profession.
- 40 STUDY AND TEACHING.
- 41 Outlines, syllabi, etc.
- 42 Problems and exercises, calculations, etc.
- 43 Lecture experiments.
- 44 Laboratory manuals.
Elementary qualitative analysis, see QD 83.
- 51 LABORATORIES.
- 53 Apparatus.
- 54 Special, A-Z.
e. g., .T4 Thermostat.
- 61 Laboratory technique (general).
- 63 Special operations, A-Z.
e. g., .D5, Dissolution; .D6, Distillation.
.F3, Filtration; .G5, Glass manipulation;
.O9, Oxidation; .R4, Reduction.
Cf. QD 258, Organic operations.
QD 526-536, Thermochemistry.
QD 157 and 277, Electric furnace operations.
- 65 Pocket-books, Tables, etc.
- 66 Dictionaries of solubilities.
- (69) Catalogs, price lists, etc., see TP 201.5.

ANALYTICAL CHEMISTRY.

- 71 PERIODICALS, SOCIETIES, ETC.
- 72 HISTORY.
- 73 General Principles, Theory of Reactions, Calculations, etc.
- 75 GENERAL WORKS.
- 77 Reagents, indicators, test papers, etc.
Qualitative analysis.
- 81 Treatises.
- 83 Elements. Laboratory manuals.
- 85 Tables, outlines, etc.
- 87 Blowpipe analysis.
See also QE 367, Determinative mineralogy.
- 95 Spectrum analysis (chemical only).

- 101 **Quantitative analysis.**
 Special elements classed QD 181 with added entry QD 111-139.
- 111 Volumetric.
- 115 Electrolytic.
 For Organic analysis, see QD 271.
- 117 ¹¹⁷ **GAS ANALYSIS.**
 See also TP 754, Illuminating gas—Analysis, tests, etc.
- TECHNICAL ANALYSIS.**
 See also S 587, Agricultural chemistry; TX 545, Food analysis.
- 131 General.
- 133 Metals.
 Assaying, see TN 550-580.
- 135 Alloys.
- 137 Special metals, A-Z.
 e. g., .C6, Copper.
 .L4, Lead.
 Iron and steel, QD 133.
- 139 Other special, A-Z.
 e. g., .G5 Glass.
 See also TD 735, Sewage analysis; TP 511, 609, Testing of wines and spirits; TP 671, Oil analysis; TP 811, Clay analysis.
- 142 Water analysis.

INORGANIC CHEMISTRY.

- 151 Treatises.
 See QD 33 for school textbooks.
- 155 Inorganic preparations.
- 157 Electric furnace operations (inorganic).
 Cf. QD 277, Organic chemistry.
- 161 **Nonmetals.**
- ~~162~~ ¹⁶⁷ Inorganic acids (General).
- 163 Chemistry of the air.
- 165 Halogens: Chlorine, bromine, iodine, fluorine.
- Metals.**
- 171 General.
- 172 By groups (alphabetically).
 e. g., .A4, Alkali metals.
 .A42, Alkaline earth metals.
 .P8, Platinum group.
 .R2, Rare earths.
- 181 Special topics.
 (Alphabetically by chemical symbol of principal element according to following table of abbreviations):
- | | |
|-----------------------------|---------------------|
| A3. =Ag. Silver (Argentum). | B4. =Be. Beryllium. |
| A4. =Al. Aluminium. | B5. =Bi. Bi-muth. |
| A6. =Ar. Argon. | B7. =Br. Bromine. |
| A7. =As. Arsenic. | C1. =C. Carbon. |
| A9. =Au. Gold (Aurum.) | Cl5. =CN. Cyanogen. |
| B1. =B. Boron. | C2. =Ca. Calcium. |
| B2. =Ba. Barium. | C3. =Cd. Cadmium. |

181 Special topics—Continued.

- | | |
|--|------------------------------|
| C4. =Ce. Cerium. | N5. =Ne. Neon. |
| C5. =Cl. Chlorine. | N6. =Ni. Nickel. |
| C6. =Co. Cobalt. | O1. =O. Oxygen. |
| C7. =Cr. Chromium. | O7. =Os. Osmium. |
| C8. =Cs. Caesium. | P1. =P. Phosphorus. |
| Columbium, see N 3. | P3. =Pb. Lead (Plumbum.) |
| C9. =Cu. Copper. | P4. =Pd. Palladium. |
| D8. =Dysprosium. | P7. =Pr. Praseodymium. |
| E6. =Er. Erbium. | P8. =Pt. Platinum. |
| F1. =F. Fluorine. | R1. =Radium. |
| F4. =Fe. Iron (Ferrum). | See also QC 721. |
| G2. =Ga. Gallium. | R3. =Rb. Rubidium. |
| G4. =Gd. Gadolinium. | R5. =Rh. Rhodium. |
| G5. =Ge. Germanium. | R9. =Ru. Ruthenium. |
| H1. =H. Hydrogen. | S1. =S. Sulphur. |
| H4. =He. Helium. | S2. =Sa. Samarium. |
| H6. =Hg. Mercury. | S3. =Sb. Antimony (Stibium). |
| (Hydrargyrum.) | S4. =Sc. Scandium. |
| H65. =Amalgams. | S5. =Se. Selenium. |
| I1. =I. Iodine. | S6. =Si. Silicon. |
| I5. =In. Indium. | S7. =Sn. Tin (Stannum). |
| I7. =Ir. Iridium. | S8. =Sr. Strontium. |
| K1. =K. Potassium (Kalium). | T2. =Ta. Tantalum. |
| K6. =Kr. Krypton. | T3. =Tb. Terbium. |
| L2. =La. Lanthanum. | T4. =Te. Tellurium. |
| L5. =Li. Lithium. | T5. =Th. Thorium. |
| M4. =Mg. Magnesium. | T6. =Ti. Titanium. |
| M6. =Mn. Manganese. | T7. =Tl. Thallium. |
| M7. =Mo. Molybdenum. | T9. =Tu. Thulium. |
| N1. =N. Nitrogen. | U7. =Ur. Uranium. |
| N15. =Nitrogen hydrides | V2. =Va. Vanadium. |
| (Ammonia, hydrazine, hydroxylamine, etc.). | V5. =Vi. Victorium. |
| N2. =Na. Sodium (Natrium). | W1. =W. Tungsten (Wolfram). |
| N3. =Nb. Niobium (Columbium). | X1. =X. Xenon. |
| N4. =Nd. Neodymium (Didymium). | Y7. =Yr. Yttrium. |
| | Y8. =Yt. Ytterbium. |
| | Z6. =Zn. Zinc. |
| | Z7. =Zr. Zirconium. |

Under QD 181 are classified all special works on the origin, properties, preparation, reactions, and analytical chemistry of individual elements and their inorganic compounds, excluding determinations of atomic weights (see QD 464).

- 191 Double salts.
 199 Miscellaneous. — 193 Complex salts.

ORGANIC CHEMISTRY.

- 248 History.
 251 Treatises.
 253 Elements.
 255 Miscellaneous works, essays, dissertations, etc.
 256 Resonance.
 257 Transition.

- 258 Operations in organic chemistry (condensation, oxidation, etc.).
- 261 Laboratory manuals.
- 262 Organic synthesis.
- 263 Electrosynthesis.
- 271 Organic analysis.
- 277 Electric furnace operations.
cf. QD 157, Inorganic chemistry.
- 281 Other special, A-Z.
e. g., .C7, Condensation.
.O9, Oxidation.
- 291 Indexes. Nomenclators. Tables.
- Fatty compounds (Aliphatic).**
- 301 General.
- 305 Special groups (alphabetically).
e. g., .A2, Acids and esters.
.A4, Alcohols.
.A6, Aldehydes and ketones.
.A7, Amides, amino acids and hydrazides.
.A8, Amino compounds.
.A9, Azo, hydrazo and diazo compounds.
.E7, Ethers and oxides.
.F2, Fats and fatty oils.
Hydrocarbons.
.H5, General.
.H6, C_nH_{2n+2} . Paraffins.
.H7, C_nH_{2n} . Olefines (Ethylene, etc.).
.H8, C_nH_{2n-2} (Acetylene, etc.).
.K2, Ketones and oximes.
.N7, Nitriles and cyanogen derivatives.
.N8, Nitro and nitroso compounds.
- 315 Urea and related compounds.
- 319 Miscellaneous pamphlets.
- 321 CARBOHYDRATES (Sugars, starch, etc.).
See also TP 375-416, Sugar manufacture.
- 325 Glucosides.
- 327 Tannins.
- Aromatic compounds (Carbocyclic and heterocyclic).**
- 331 General.
- 335 Synthesis from fatty compounds. Orientation. Other theoretical topics.
- 341 Special groups (alphabetically).
e. g., .A2, Acids and esters.
.A4, Alcohols.
.A6, Aldehydes and ketones.
.A7, Amides, amino acids and hydrazides.
.A8, Amino compounds.
.A9, Azo, hydrazo and diazo compounds.
.E7, Ethers and oxides.

Aromatic compounds—Continued.

341

Special groups—Continued.

- e. g. .H9, Hydrocarbons, etc.
- .I5, Iodonium compounds.
- .K2 Ketones.
- .N7, Nitriles and cyanogen derivatives.
- .N8, Nitro and nitroso compounds.
- .P5, Phenols.
- .P6, Pseudophenols.
- .S3, Sulphur derivatives—General.
- .S6, Sulphoxides and sulphones.
- .S8, Sulphonium compounds.

369

Miscellaneous pamphlets.**CONDENSED BENZENE-RINGS.**

391

Naphthalene.

393

Anthracene.

395

Phenanthrene.

399

Miscellaneous.**MIXED CYCLOIDS.**

400

General works.

401

Cycloids containing N.

403

Cycloids containing S.

405

Cycloids containing O.

409

Miscellaneous.**ORGANOMETALLIC AND ALLIED COMPOUNDS.**

411

General.

412

Special (alphabetically by symbol of element according to scheme under QD 181).

415

Chemistry of vital products.

See also QH 345, Chemical properties of living matter.

416

TERPENES AND CAMPHORS. ESSENTIAL OILS.

See also TP 958, Essences (chemical technology).

419

RESINS.

421

ALKALOIDS.See also QK 865-866, Chemical analysis of plants; QP 801.P7, Pto-
maines and leucomaines.

431

PROTEIDS.

See also QP 551, Physiological chemistry.

441

COLORED COMPOUNDS (Phthaleins, eosin, etc.)

See also TP 910-929, Dyes.

449

Miscellaneous.

PHYSICAL AND THEORETICAL CHEMISTRY.

Periodicals, Societies, etc., see QD 1.

- 453 General works.
- 457 Laboratory manuals.
- 461 **Atomic theory and laws of chemical combination.**
- ATOMIC WEIGHTS.**
- 463 General.
- 464 Of individual elements (alphabetically by chemical symbol).
- CHEMICAL ELEMENTS.**
- 466 Nature and properties.
- 467 Classification. Periodic Law, etc.
- 469 Valence.
- 471 Chemical compounds. Structure and formulæ. Isomerism.
- 473 Physical properties in relation to structure.
e. g. Odor.
- 475 Inorganic compounds.
Alloys, see TN 690, TS 650, TA 490.
- 477 Acids (General).
- 481 **Stereochemistry.**
- 499 Miscellaneous speculations.
- 501 **Conditions and laws of chemical change.**
Chemical equilibrium. Phase rule, etc.
Chemical affinity.
Velocity of reaction.
- 511 **Thermochemistry.**
- 515 Chemistry of high and low temperatures (general).
- 516 Combustion, flame, explosion.
- 517 Dissociation.
- 518 Melting and boiling points.
Electric furnace operations, see QD 157, 277.
- 526 Fractional distillation.
- 531 Manipulation of gases and vapors.
- 533 Vapor densities.
- 535 Liquefaction of gases.
- 536 Research at low temperatures.
- Theory of solution.**
- 541 General.
Special topics.
- 543 Solubility, osmotic pressure, diffusion, etc.
Dictionaries of solubilities in QD 66.
See also QC 183-189.
- 545 Freezing points and vapor pressures. Determination of
molecular weight.
- 548 Supersaturated solutions. Crystallization, etc.
- 549 Colloidal state. Colloidal chemistry.

Electrochemistry. Electrolysis.

See also QD 115, Electrolytic analysis; QD 263, Electrosynthesis of organic compounds; TP 250-261, Electrochemical industries.

- 553 General works. *Constitutions (1900-1910)*
- 557 Laboratory manuals.
- 559 Apparatus, etc.
- Special topics.
- 561 Electrolytic dissociation. Migration and velocity of ions. Transport rates. Electromotive force in solutions.
- 565 Conductivity of electrolytes.
- 568 Concentration cells.
- 571 Electrode phenomena. Polarization, etc.
- (581) Chemical constitution determined electrically.
- 585 Other special.
- 591 **Magnetochemistry.**
- 601 **Photochemistry.** *Y*
- See also TR 200, Photographic chemistry. *Medicals and Societies*
- 651 **Optical properties of chemical substances.** *X-ray*

CRYSTALLOGRAPHY.

See also QE 372, Descriptive mineralogy.

- 901 PERIODICALS, SOCIETIES, ETC.
- 902 Dictionaries and Nomenclature.
- 903 History.
- 905 General works.
- 908 Tables, etc.
- 911 **Geometrical and Mathematical Crystallography.**
- 913 Diagrams, etc.
- 915 Goniometric measurements.
- 921 Crystal structure and growth. Liquid crystals.
- 931 **Physical Properties of Crystals.**
- 933 Cohesion, elasticity, cleavage, hardness.
- 935 Etching.
- 937 Thermal properties.
- 939 Electric properties.
- See also QC 595, Pyro- and Piezo-electricity.
- 941 Optical properties.
- See also QC 445, Polarization. *QD F 451 X-ray pattern*
- 951 **Chemical Crystallography.**
- 999 Miscellany and curiosa.

QE: GEOLOGY

(INCLUDING MINERALOGY, PETROLOGY, AND
PALEONTOLOGY)

CLASS QE

GEOLOGY

Economic geology and mineral resources in TN.

- 1 PERIODICALS, SOCIETIES, ETC.
- 3 COLLECTED WORKS (non-serial).
- 5 DICTIONARIES.
- 7 Nomenclature.
- HISTORY.
- 11 General.
- 13 Local (by countries, A-Z).
- BIOGRAPHY OF GEOLOGISTS.
- 21 Collective.
- 22 Individual.
 - e. g., .D26 Dana.
 - .L3 Lyell.
 - .M5 Miller.
 - .M8 Murchison.
- 23 Directories. Yearbooks. Calendars.
- 25 EARLY WORKS TO 1800.
 - See also QE 362, 709, 710.
- 26 GENERAL TREATISES.
- 28 Elements.
- 29 Rudiments.
- 31 Popular Descriptive Works.
- 33 General special. Miscellaneous.
 - e. g., Use of geological maps.
- 35 ESSAYS, LECTURES, ADDRESSES, ETC.
- 40 STUDY AND TEACHING.
- 41 Outlines, syllabi, etc.
- 43 Models, diagrams, etc.
- 45 Field work.
- 49 Laboratories.
- 51 Museums (catalogs, guides, descriptions).
 - See also QE 386, 716.
- 55 Dealers' catalogs of specimens.
- 61 Surveys (History, organization, etc.).
 - Geographical Divisions.**
 - Official publications stand at the head of each division.
- 70 Arctic Regions. Greenland.

Geographical Divisions—Continued.

- 71 North America.
 United States.
- 73 Surveys, before 1861. *See also 74*
- 74 Surveys, 1865-1879.
 United States Geological Survey.
- 75 General publications of the Survey, A-Z.
- 76 Works about the Survey.
- 77 Miscellaneous.
 Special regions.
- 78 Lake region and St. Lawrence.
78. 3 North. Northeast. East.
78. 5 South and Southeast.
78. 7 Central. Mississippi Valley.
- 79 Western states. Rocky Mountains.
79. 5 Southwest.
- 80 States, Collectively.
- By States: *See also 81-132* *for state official special publications*
- The second number assigned to each State is used for special localities (i. e., counties or physiographic divisions) arranged alphabetically.
- 81- 82 Alabama.
- 83- 84 Alaska.
- 85- 86 Arizona.
- 87- 88 Arkansas.
- 89- 90 California.
- 91- 92 Colorado.
- 93- 94 Connecticut.
- 95- 96 Delaware.
- 97- 98 District of Columbia.
- 99-100 Florida.
- 101-102 Georgia.
- 103-104 Idaho.
- 105-106 Illinois.
- 109-110 Indiana.
- 111-112 Iowa.
- 113-114 Kansas.
- 115-116 Kentucky.
- 117-118 Louisiana.
- 119-120 Maine.
- 121-122 Maryland.
- 123-124 Massachusetts.
- 125-126 Michigan.
- 127-128 Minnesota.
- 129-130 Mississippi.
- 131-132 Missouri.

Geographical Divisions.

North America.

United States.

By States—Continued.

133-134	Montana.
135-136	Nebraska.
137-138	Nevada.
139-140	New Hampshire.
141-142	New Jersey.
143-144	New Mexico.
145-146	New York.
147-148	North Carolina.
149-150	North Dakota.
151-152	Ohio.
153-154	Oklahoma.
155-156	Oregon.
157-158	Pennsylvania.
159-160	Rhode Island.
161-162	South Carolina.
163-164	South Dakota.
165-166	Tennessee.
167-168	Texas.
169-170	Utah.
171-172	Vermont.
173-174	Virginia.
175-176	Washington.
177-178	West Virginia.
179-180	Wisconsin.
181-182	Wyoming.
185	Canada.
186	Alberta.
187	British Columbia.
188	Manitoba.
189	New Brunswick.
190	Nova Scotia.
191	Ontario.
192	Prince Edward Island.
193	Quebec.
194	Saskatchewan.
195	Yukon and Mackenzie.
196	Other northern territories, A-Z. e. g. .F7 Franklin. .K4 Kewatin. .L3 Labrador. .N7 Northwest Territories. .U6 Ungava.
199	Newfoundland.

Geographical Divisions.

North America—Continued.

- 201 Mexico.
 - General.
 - 203 Local.
- 210 Central America.
 - 211 British Honduras.
 - 212 Costa Rica.
 - 213 Guatemala.
 - 214 Honduras.
 - 215 Nicaragua.
 - 216 Panama.
 - 217 Salvador.
- 220 West Indies.
 - 221 Bahamas.
 - 222 Cuba.
 - 223 Haiti.
 - 224 Jamaica.
 - 225 Porto Rico.
 - 226 Other.
- 229 Bermudas.
- 230 South America.
 - 231 Argentine Republic. Patagonia.
 - 233 Bolivia.
 - 235 Brazil.
 - 237 Chile.
 - 239 Colombia.
 - 241 Ecuador.
 - 243 Guiana.
 - 245 Paraguay.
 - 247 Peru.
 - 249 Uruguay.
 - 251 Venezuela.
 - 257 Falkland Islands.
- 260 Europe.
 - 261 Great Britain. England.
 - 262 England and Wales (alphabetically by districts).
 - 264 Scotland.
 - 265 Ireland.
 - 266 Austria. Bohemia. Hungary.
 - 268 France.
 - 269 Germany.
 - 271 Greece.
 - 272 Italy.

Geographical Divisions.

Europe—Continued.

- 273 Netherlands (Holland).
 274 Belgium.
 275 Luxembourg.
 276 Russia.
 276. 3 Finland.
 276. 5 Poland.
 277 Scandinavia.
 278 Denmark.
 279 Iceland.
 281 Norway.
 282 Sweden.
 283 Spain.
 284 Portugal and Azores.
 285 Switzerland. Alps.
 287 Turkey and Balkan States.
 289 Asia.
 290 Afghanistan.
 291 Arabia.
 292 Baluchistan.
 294 China.
 295 India. Ceylon.
 296 Indo-China.
 301 Indonesia.
 302 Philippines.
 304 Japan.
 305 Korea.
 307 Persia.
 315 Siberia. Turkestan.
 316 Turkey in Asia.
 317 Armenia.
 318 Palestine. Syria.
 320 Africa.
 321 Abyssinia.
 British.
 322 Cape of Good Hope.
 323 Natal.
 324 Transvaal. Orange Free State.
 325 Central and South.
 326 East Africa.
 327 Other possessions alphabetically.
 328 Egypt.
 French.
 329 Algeria. Tunis.
 330 Madagascar.
 331 Other.

Geographical Divisions.

Africa—Continued.

- 332 German.
- 334 Italian.
- 335 Kongo.
- 337 Portuguese.
- 338 Spanish.
- 339 Other countries, A-Z.
- 340 Australia.
- 341 New South Wales.
- 342 New Zealand.
- 343 North Australia.
- 344 Queensland.
- 345 South Australia.
- 346 Tasmania.
- 347 Victoria.
- 348 Western Australia.
- 349 Pacific islands, A-Z.
- 350 Antarctic.

MINERALOGY.

Crystallography in QD 901-999.

- 351 PERIODICALS, SOCIETIES, ETC.
- 353 COLLECTED WORKS (non-serial).
- 355 DICTIONARIES. NOMENCLATURE.
- 359 HISTORY.
- 361 BIOGRAPHY OF MINERALOGISTS.
Dana, see QE 22.D26.
- 362 EARLY WORKS.
- 363 TREATISES—GENERAL.
- 364 GENERAL SPECIAL.
e. g., Mineralogical chemistry.
- 365 ELEMENTS AND POPULAR WORKS.
- 366 STUDY AND TEACHING.
- Determinative Mineralogy.**
See also QD 87, Blowpipe; Assaying in TN.
- 367 General works (including tables).
- 369 Miscellaneous special topics.
See subdivisions of QE 389 for reactions of individual groups.
- Descriptive Mineralogy.**
- 372 General.
- GEOGRAPHICAL DIVISIONS.**
- 373 North America.
- 375 United States.
- 376 Canada.
- 377 Mexico and Central America.¹

¹.A1, General; .A3-Z, Special countries.

Descriptive Mineralogy.

GEOGRAPHICAL DIVISIONS—Continued.

- 378 West Indies.¹
 379 South America.¹
 381 Europe.¹
 382 Asia.¹
 383 Africa.¹
 384 Australia and New Zealand.²
 385 Pacific islands.
- 386 MUSEUMS (Description and catalogs).
 387 Dealers' catalogs of specimens.
 388 Classification.
 389 Special groups of minerals (Descriptive and determinative).
- . 1 Native elements.
 - . 2 Sulphides, selenides, tellurides, arsenides, antimonides.
 - . 3 Sulpho-salts (sulpharsenites, sulphantimonites, sulpho-bismuthites).
 - . 4 Haloids (chlorides, bromides, iodides, fluorides).
 - . 5 Oxides.
 - . 6 Oxygen salts.
 - . 61 Carbonates.
 - . 62 Silicates, titanates.
 - . 63 Niobates, tantalates.
 - . 64 Phosphates, arsenates, vanadates, antimonates, nitrates.
 - . 65 Borates, uranates.
 - . 66 Sulphates, chromates, tellurates.
 - . 67 Tungstates, molybdates.
 - . 7 Salts of organic acids; oxalates, mellates, etc.
 - . 8 Hydrocarbon compounds.
- 391 Descriptions of special minerals. A-Z
 e. g., .F3, Feldspar.
 .Q2, Quartz.
 .T7, Tourmaline.
 .V5, Vesuvianite.
- Precious stones.**
 See also TS 750-757, Jewelry manufacture; NK 7300-7695, Art;
 TN 980-997, Mining.
- 392 General works.
 393 Diamonds.
 394 Other precious stones (alphabetically).
 395 **Meteorites.**
 See also QB 755
 399 Miscellany.

¹ .A1, General; .A3-Z, Special countries, islands, etc.

² .A1, General; .N-W, Special colonies.

PETROLOGY.

See also Building stones in TN.

- 421 COLLECTED WORKS (non-serial).
 425 NOMENCLATURE AND CLASSIFICATION.
 427 HISTORY.
 431 TREATISES AND TEXTBOOKS.
 433 LABORATORY MANUALS.
 434 Microscopic analysis of rocks.
 435 Instruments and technique.
 438 Chemical analysis of rocks.
 GEOGRAPHICAL DIVISIONS.
 443 North America.
 445 United States.
 446 Canada.
 447 Mexico and Central America.
 448 West Indies.
 449 South America.¹
 451 Europe.¹
 452 Asia.¹
 453 Africa.¹
 454 Australia and New Zealand.
 455 Pacific Islands.
 461² Igneous rocks, volcanic ash, tuff, etc.
 471² Sedimentary rocks (including clay).
 475² Crystalline schists and Metamorphic rocks.
 495 Other.
 499 Miscellany.

DYNAMIC AND STRUCTURAL GEOLOGY.

(Physical and tectonic.)

- 501 GENERAL WORKS.
 (Including physical history of the earth.)
 505 Essays and miscellany.
 506 Geological cosmogony.
 507 Deluge, etc.
 508 Age of the earth. Geologic time.
 509 Interior of the earth (temperature, etc).
 511 Earth's crust.
 515 Geochemistry (and chemical geology).

¹ .A1 General; .A3-Z, Special countries, islands, etc.

² To be subdivided later; (1) General; (2) Special, A-Z.

Volcanoes and earthquakes.

- 521 General.
VOLCANOES. 521.5
 522 General.
 523 Individual (alphabetically).
 524 Western hemisphere (including Hawaii).
 527 Eastern hemisphere.
 528 Geysers, hot springs, etc.
 529 Miscellany.
EARTHQUAKES. SEISMOLOGY.
 Building construction in volcanic regions, TH 1095.
 531 Periodicals. Societies.
 Serial publications limited to observations, in QE 532.
 532 Observations (i. e., Observatory publications).
 533 Early works before 1800.
 534 General works since 1800.
 Special.
 535 Western hemisphere.
 536 Eastern hemisphere—Europe.
 537 Eastern hemisphere—Asia, etc.
 539 Miscellaneous topics.
 540 Observatories.
 .A2, General: .A5-Z, Special.
 541 Instruments. Seismometry.
 Including tables, calculations, etc.
 565 **CORAL ISLANDS AND REEFS.**
 571 **Erosion and deposition.** 571
 See also Physical geography, GB.
 576 **GLACIERS AND GLACIAL ACTION.**
 See also Glacial epoch, QE 697.
 578 Moraines.
 581 Aqueous erosion. Sedimentation and deposition. 581
 597 Aerial erosion.
 599 Landslides.
 .A2A-Z, General.
 .A5-Z, By country.
 cf. GB 488.
 For descriptive works, disasters, etc., see DA-F.
Structural geology.
 601 **GENERAL WORKS.**
 602 Stratification.
 605 Jointing and cleavage.
 606 Faulting and folding.
 608 Metamorphism.
 611 Veins, dikes, necks, bosses, etc. 611
 See also Ore deposits, TN 263.
 621 Mountain building.

STRATIGRAPHIC GEOLOGY.

Prefer stratigraphical to geographical classification.

- 651 General works.
- 653 Archean. Laurentian.
- Paleozoic.**
- 654 General.
- 655 Algonkian. Huronian. Pre-Cambrian in general.
- 656 Cambrian.
- 661 Silurian.
- 662 Lower (Ordovician).
- 663 Upper (Silurian). Monroe and Niagara formations.
- 665 Devonian (Old red sandstone).
- 671 Carboniferous.
- 672 Lower.
- 673 Middle. Coal measures, Pennsylvanian, etc.
See also Coal in TN.
- 674 Upper (Permian, Dyas).
- Mesozoic.**
- 675 General.
- 676 Triassic.
- Lower.
- 678 Middle.
- 679 Upper (Rhætic, Infra-liassic, Avicula contorta).
- 681 Jurassic.
- Lower (Lias).
- 683 Middle (Oolites).
- Upper.
- 685 Cretaceous (Greensand, Gault, Wealden beds).
- Lower.
- Middle.
- 688 Upper. Laramie formation.
- 690 **Cenozoic (Tertiary and Quaternary).**
- TERTIARY.**
- 691 General.
- 692 Eocene.
- 693 Oligocene.
- 694 Miocene.
- 695 Pliocene.
- QUATERNARY.**
- 696 General and Pleistocene.
- 697 Glacial epoch. Drift. Loess.
- 698 Cause of the glacial epoch.
- 699 Recent.
(Including works on surface strata of the present.)

- (700) Geological climate. Paleoclimatology.
See QC 884, QE 698.

PALEONTOLOGY.

- 701 PERIODICALS, SOCIETIES, ETC.
702 COLLECTED WORKS (non-serial).
703 DICTIONARIES.
705 HISTORY.
707 BIOGRAPHY OF PALEONTOLOGISTS.
e. g., .M4 Marsh.
.Z8 Zittel.
- GENERAL WORKS.
Early works.
709 Before 1790.
710 1790-1830.
Works since 1830.
711 General (including stratigraphic).
713 Systematic (both Zoological and Botanical).
714 Pictorial works (Icones).
715 Study and Teaching.
716 Museum guides and catalogs of collections, general.
Special catalogs are classified with the special subject, e. g.,
British Museum catalog of fossil fishes in QE 851.
- 718 Collecting and Preservation.
721 Miscellaneous aspects of Paleontology.
(Biological laws, Evolution, etc.)
See also QH 365-368, Evolution (General biology).
- 723 Addresses, essays, lectures, etc.
- Stratigraphic Divisions** (general and zoological).
See also corresponding classes in Stratigraphic geology, QE 651-699.
- 724 Archean (*Eozoon canadensis*).
725 PALEOZOIC.
726 Cambrian.
727 Silurian, Ordovician, Helderbergian, etc.
728 Devonian.
729 Carboniferous.
730 Permian.
- 731 MESOZOIC.
732 Triassic (Rhætic, etc.).
733 Jurassic.
734 Cretaceous.

Stratigraphic Divisions—Continued.

- 735 CENOZOIC.
 736 Tertiary.
 737 Eocene.
 738 Oligocene.
 739 Miocene.
 740 Pliocene.
 741 Quaternary (Pleistocene, Glacial, Recent).
 742 Amber fauna and flora.
 cf. QE 932.
- 743 **Geographical Divisions** (general and zoological.)
 Prefer the stratigraphic divisions, QE 724-741.
- 744 Arctic. *Arctic*
 745 North America.
 United States.
 746 General.
 747 By States, A-W.
 748 Canada.
 749 Mexico.
 750 West Indies.
 751 Central America.
 752 South America (by countries, A-Z).
 753 Europe.
 754 Great Britain.
 755 Continental countries (A-Z).
 756 Asia (by countries, A-Z).
 757 Africa. *(" " " ")*
 758 Australia and New Zealand.
 759 Pacific islands, A-Z.
 760 Antarctic.

PALEOZOOLOGY.

- 761 TREATISES.
 763 Popular works.
- INVERTEBRATES. *767 Fossiliferous*
- 770 General.
Protozoa.
 771 General (including works on the Infusoria).
 772 Foraminifera.
 773 Radiolaria. *774*
 775 Porifera (sponges). *776*
 777 Cœlenterata.
 778 Corals (Anthozoa).
 779 Graptolites, etc. (Hydrozoa).
 Including Stromatoporoids.

Invertebrates—Continued.

- 781 **Echinodermata.**
 782 Crinoidea.
 783 Other subdivisions, alphabetically:
 e. g., .A7 Asteroidea (Starfishes).
 .B6 Blastoidea.
 .C9 Cystoidea.
 .E2 Echinoidea.
 .II7 Holothuroidea.
 .O6 Ophiuroidea.
- 791 **Vermes.**
 795 **Molluscoidea.**
 Brachiopoda.
 General.
 796 Subdivisions, alphabetically:
 797 e. g., .D6 Discinidæ.
 .L7 Lingulidæ.
 .O2 Obolidæ.
 .P9 Productidæ.
 .R5 Rhynchonellidæ.
 .S7 Spiriferidæ.
 .S9 Strophomenidæ.
 .T3 Terebratulidæ.
 .T8 Trimerellidæ.
 .V9 Volborthia.
- Polyzoa (Bryozoa).**
 798 General.
 799 Subdivisions, alphabetically.
- 801 **Mollusca (Fossil shells).**
 (802, 803, 804 may be used later for stratigraphic subdivisions, viz, Paleozoic, Mesozoic, Cenozoic.)
- 805 **Amphineura.**
 806 **Cephalopoda.**
 807 Subdivisions, alphabetically:
 e. g., .A5 Ammonites.
 .B4 Belemnites.
 .C65 Clymenia.
 .G56 Glyphioceras.
 .L7 Liparoceratida.
 .L98 Lytoceras.
 .O8 Orthoceras.
 .P69 Placentioceras.
- 808 **Gasteropoda.**
 809 Subdivisions, alphabetically:
 e. g., .N9 Nucleobranchiata (or Heteropoda).
 .O6 Opisthobranchiata.
 .P7 Prosobranchiata.
 .P8 Pteropoda.
 .P9 Pulmonata.
 .Z9 Zonites.

Invertebrates.

Mollusca—Continued.

- 811 Lamellibranchiata (Pelecypoda, Acephala, Bivalves)
 812 Subdivisions, alphabetically:
 e.g., .C5 Chondrodonta.
 .C9 Cypricardia.
 .L6 Leptonacea.
 .M7 Modiola.
 .N15 Naiadites.
 .O8 Ostrea.
 .P4 Pecten.

813 Scaphopoda.

815 **ARTHROPODA.**816 **Crustacea.**

- 817 Subdivisions, alphabetically:
 .A6 Amphipoda.
 .A7 Arthrostraca.
 .C5 Cirripedia (Barnacles).
 .C7 Copepoda.
 .C9 Cumacea.
 .D2 Decapoda, Macrura (Lobsters, prawns, etc.).
 .D3 Decapoda, Brachyura (Crabs). (Lobsters, Crabs, etc.)
 .I8 Isopoda.
 .L5 Leptostraca.
 .O8 Ostracoda.
 .P5 Phyllopoda.
 .S3 Schizopoda.
 .S8 Stomatopoda.

821 **Trilobites.**

823 Allied groups, alphabetically.

- .E8 Eurypterida.
 .L7 Linguatulida.
 .P2 Pantopoda.
 .T2 Tardigrada.
 .X7 Xiphosura.

825 **Arachnida.**

826 Subdivisions, alphabetically:

- .A2 Acarida (or Acari).
 .A6 Araneida.
 .C5 Chernetida (or Psuedoscorpiones).
 .P3 Pedipalpi.
 .P5 Phalangida (or Opiliones).
 .S4 Scorpionida.
 .S6 Solifugae.

828 **Myriapoda.**

829 Subdivisions, alphabetically:

831 **Insects.**

832 Subdivisions, alphabetically:

- .C6 Coleoptera.
 .D6 Diptera.

Invertebrates.**Insects.**

Subdivisions, alphabetically—Continued.

- .H4 Hemiptera.
- .H9 Hymenoptera.
- .L5 Lepidoptera.
- .N5 Neuroptera.
- .O7 Orthoptera.
- .T8 Trichoptera.

VERTEBRATES.

841 General.

845 Fossil footprints (Ichnology).

Fishes.

851 General.

852 Subdivisions, alphabetically:

- .A7 Arthrodira.
- .C8 Cyclostomi.
- .D5 Dipnoi.
- .G2 Ganoidei.
- .H7 Holocephali.
- .O5 Ostracodermi.
- .P5 Placodermi.
- .P6 Plagiostomi (sharks, etc.).
- .T2 Teleostei.

852

Reptiles.

861 General.

862 Subdivisions, alphabetically:

- .A6 Anomodontia.
- .C5 Chelonia (tortoises and turtles).
- .C7 Cotylosauria.
- .C8 Crocodilia.
- .D5 Dinosauria.
- .I2 Ichthyosauria.
- .L2 Lacertilia (lizards).
- .O6 Ophidia (snakes).
- .O7 Ornithosauria (or Pterosauria).
- .P4 Plesiosauria.
- .P8 Pythonomorpha.
- .R4 Rhiptoglossa.
- .R5 Rhynchocephalia.

Batrachia. Amphibia.

867 General.

868 Subdivisions, alphabetically:

- .A6 Apoda.
- .C2 Caudata (or Urodela).
- .E2 Ecaudata (or Anura).
- .S8 Stegocephala (or Labyrinthodontia).

Vertebrates—Continued.

Birds.

871

General.

872

Subdivisions, alphabetically:

- e. g., .A1 Accipitres.
 .A2 Æpyornithes. (Rocs).
 .A3 Alcæ.
 .A4 Alectorides, *see* Gruiformes.
 .A5 Anisodactylæ (including Podargidæ and Steatornis).
 .A6 Anseres (including Phænicopteri and Palamediidæ).
 .A7 Aptyryges.
 .A8 Archæornithes (Archæopteryx).
 .A9 Ardeiformes.
 .C3 Casuarii.
 .C6 Coccyges.
 .C7 Columbæ. (Dodo.)
 .C8 Crypturi.
 .C9 Cypseli.
 .D5 Dinornithes.
 .F9 Fulicariæ.
 .G1 Gallinæ.
 Gaviæ, *see* Lariformes.
 .G8 Gruiformes.
 Herodiones, *see* Ardeiformes.
 Impennes, *see* Sphenisciformes.
 .L3 Lariformes.
 .L7 Limicolæ.
 .O2 Odontolcæ.
 .O4 Odontormæ.
 .O6 Opisthocomi.
 .P2 Passeres.
 .P5 Pici.
 .P6 Podargi.
 .P7 Psittaci.
 .P8 Pterocles.
 .P9 Pygopodes.
 .R4 Rheæ.
 Saururæ, *see* Archæornithes.
 .S4 Sphenisciformes.
 .S5 Steatornithes.
 .S6 Steganopodes.
 .S7 Stereornithes.
 .S8 Striges.
 .S9 Struthiones.
 .T8 Tubinares.

875

Fossil eggs.

Mammals.

881

General.

882

Subdivisions, alphabetically:

- .C1 Carnivora.
 .C4 Carnivora-Pinnipedia.
 .C5 Cetacea.

Vertebrates.**Mammals.**

Subdivisions, alphabetically—Continued.

- .C8 Chiroptera.
- .E2 Edentata.
- .I5 Insectivora.
- .M3 Marsupialia.
- .M6 Monotremata.
- .M8 Multituberculata.
- .P7 Primates.
- .R6 Rodentia.
- .S6 Sirenia.
- .T5 Tillodontia.
- Ungulata:
 - .U2 General.
 - .U3 Artiodactyla (Ruminants, Cattle, etc.).
 - .U6 Perissodactyla (Horse, Rhinoceros, etc.).
 - .U7 Proboscidea.
 - .U8 Other.

899 Fossils of doubtful affinity or origin.

PALEOBOTANY.

901 PERIODICALS, SOCIETIES, ETC.

903 NOMENCLATORS.

904 History.

905 TREATISES AND TEXTBOOKS.

907 Pictorial works (Icones).

908 Catalogs and Descriptions of Collections.

911 Essays, Lectures, Addresses.

Stratigraphic Divisions.

915 PALEOZOIC.

916 Cambrian.

917 Silurian.

918 Devonian.

919 Carboniferous.

920 Permian.

921 MESOZOIC.

922 Triassic.

923 Jurassic.

924 Cretaceous.

925 CENOZOIC.

926 Tertiary.

927 Eocene.

928 Oligocene.

929 Miocene.

930 Pliocene.

931 Quaternary (Pleistocene, Glacial, Recent).

932 Amber flora.

Geographic Divisions.

- 934 Arctic.
 935 North America.
 United States.
 936 General.
 937 By States, A-W.
 938 Canada.
 939 Mexico.
 940 West Indies.
 941 Central America.
 942 South America.
 943 Europe.
 944 Great Britain.
 945 Continental countries, A-Z.
 946 Asia (by countries, A-Z).
 947 Africa.
 948 Australia and New Zealand.
 949 Pacific islands.
 950 Antarctic.

Systematic Divisions.

- 955 ALGÆ.
 958 FUNGI (including Lichens).
 959 MOSSES.
 960 PTERIDOPHYTES.
 961 Ferns.
 965 Calamariæ.
 Equisetæ.
 Calamites.
 971 Lycopods.
 Lepidodendron.
 Sigillaria.
 Selaginella. *Pre-1050-1000. Cycas-fallaces.*
 975 GYMNOSPERMS.
 976 Cycadaceæ.
 977 Coniferæ. *975, 976, 977, 978, 979, 980, 981, 982, 983, 984, 985, 986, 987, 988, 989, 990, 991, 992, 993, 994, 995, 996, 997, 998, 999, 1000.*
 980 ANGIOSPERMS.
 981 Monocotyledons.
 983 Dictyledons.
 989 Plants of unascertained position.
 991 Fossil woods. Fossil trees. *fossil part*
 995 Fossil fruits and seeds.

QH: NATURAL HISTORY

(INCLUDING MICROSCOPY AND
GENERAL BIOLOGY)

CLASS QH
NATURAL HISTORY

PERIODICALS, SOCIETIES, ETC. (by language).

- 1 English.
- 3 French.
- 5 German.
- 7 Other.

9 COLLECTED WORKS (non-serial).

11 VOYAGES AND EXPEDITIONS.

See also Q 115, Scientific expeditions; QK 5, Botanical results;
QL 5, Zoological results; G 150-420, General Voyages and Expeditions.

13 DICTIONARIES AND ENCYCLOPEDIAS.

HISTORY.

- 15 General.
- 21 Local (by countries, A-Z).

BIOGRAPHY OF NATURALISTS.

- 26 Collective.
- 31 Individual.

e. g., .A2 Agassiz, Louis.
.D2 Darwin.
.H9 Huxley.

Linnaeus, see QH 44.

41 PRE-LINNEAN WORKS (before 1735).

See also QK 41; QL 41.

43 WORKS OF LINNÆUS.

44 LINNÆANA.

45 POST-LINNEAN GENERAL WORKS.

(Including popular works.)

46 PICTORIAL WORKS (Icones).

47 SCHOOL TEXTBOOKS.

48 RUDIMENTS. JUVENILE LITERATURE.

51 STUDY AND TEACHING.

53 Outlines, syllabi, etc. Nature study manuals.

60 Technique.

COLLECTING AND PRESERVATION.

61 General.

63 Apparatus.

68 Aquariums.

.A1-5 Periodicals and Societies.

See also QL 78-79, Aquariums (zoology); QH 275, Aquatic organisms.

MUSEUMS.¹

70 General.

71 Individual (alphabetically).

¹ Descriptions and catalogs only; serial publications in QH 1-7, 301.

At 11-11
with G.H. no
as indicated

- 72 Commercial lists, catalogs, etc.
 75 Natural monuments.
 81 **ESSAYS, LECTURES, ADDRESSES, ETC., "Outdoor" books,**
 Nature study.
 Cf. SK 601, Camping, Outdoor life; QH 53, School manuals of nature
 study.
 82 Natural history of the Bible.
 83 **CLASSIFICATION, NOMENCLATURE, TERMINOLOGY.**
 Geographical distribution.
 84 General works.
 . 1 Arctic regions.
 . 2 Antarctic regions.
 . 3 Temperate regions.
 . 5 Tropical regions.
 Physiographic divisions.
 LAND.
 85 Islands.
 86 Forests.
 87 Mountains.
 88 Plains. Deserts.
 89 Caves.
 (Including subterranean waters.)
 90 **WATER (GENERAL).**
 Cf. QH 68 Aquariums.
 QH 275 Microscopy.
 91 **OCEAN.**
 92 Atlantic.
 93 Mediterranean.
 94 Indian.
 95 Pacific.
 Arctic and Antarctic, see QH 199.
 96 **FRESH WATER.**
 97 Streams.
 98 Lakes.
 99 Springs.
 Topographical Divisions.
 101 America.
 102 North America.
 104 United States. *(M.C.)*
 105 By States, A-W. *Mississippi Valley*
 106 Canada. *Rocky Mts.*
 107 Mexico. *South west*
 va West
 108 Central America.
 109 West Indies, A-Z.

Topographical Divisions—Continued.

- 110 Bermudas.
- 111 South America.
- 113 Argentine Republic.
- 115 Bolivia.
- 117 Brazil.
- 119 Chile.
- 121 Colombia.
- 123 Ecuador.
- 125 Guiana.
- 127 Paraguay.
- 128 Peru.
- 129 Uruguay.
- 130 Venezuela.
- 135 Europe.
- 137 Great Britain.
- 137 General.
- 138 England (localities A-Z).
- 141 Scotland.
- 143 Ireland.
- 145 Austria.
- 147 France. Riviera.
- 149 Germany.
- 151 Greece.
- 152 Italy.
- 154 Netherlands.
- 157 Belgium.
- 159 Holland.
- 161 Russia.
- 162 Poland.
- Scandinavia.
- 165 Denmark.
- 166 Iceland.
- 168 Norway.
- 169 Sweden.
- 171 Spain.
- 173 Portugal.
- 175 Switzerland. Alps.
- 177 Turkey and the Balkan States, A-Z.
- 179 Asia.
- 181 China.
- 183 India. Ceylon.
- 184 Indo-China (not divided by country).
- 179 Other Islands, etc.

Topographical Divisions.

Asia—Continued.

- Indonesia. Malay Archipelago. *Indo. Ocean*
 186 Dutch East Indies.
 187 Philippines.
 188 Japan.
 189 Persia.
 191 Siberia.
 192 Turkey in Asia.
 193 Other special, A-Z.
 Africa.
 194 General.
 195 Countries and regions, A-Z.
 197 Australia, New Zealand and adjacent islands.
 198 Pacific islands.
 199 Arctic and Antaretic Regions.

MICROSCOPY.

- 201 PERIODICALS, SOCIETIES, ETC. *Collected from the periodicals*
 203 DICTIONARIES.
 205 HANDBOOKS AND COMPREHENSIVE TREATISES.
 207 MICROSCOPICAL METHODS, CULTURE, ETC.
 211 **Apparatus. Microscopes (general).**
 See also QC 371, Optical instruments.
 213 Accessories and their use.
 215 Illuminating apparatus.
 217 Apparatus for polarization.
 219 Commercial publications and trade lists.
 221 Microchemistry.
 See also QK 53, Laboratory manuals (Botany).
 231 **Preparation and mounting of objects. Paraffin baths, etc.**
 233 Microtome.
 235 Fixation.
 237 Staining.
 239 Mounting.
 245 Photography (of natural objects in general).
 See also TR, Photography.
 251 **Photomicrography.** *251 photomicrography*
 261 Pictorial works.
 GENERAL MICROSCOPIC OBSERVATIONS.
 271 To 1800.
 273 After 1800. *Micro. 181-185 for ...*
 275 **AQUATIC ORGANISMS.** *Micro. 181-185 for ...*
 See also QH 68, Aquariums (general); QL 78-79, Aquariums (Zoology);
 QH 91-99, Aquatic animals and plants; QL 120-149, Aquatic
 animals; QK 916, 930-935, Aquatic plants.
 277 Popular works. Recreations.

GENERAL BIOLOGY.

- 301 PERIODICALS, SOCIETIES, ETC.
- 302 COLLECTED WORKS (non-serial).
- 305 HISTORY. *See also QH 361.*
See also QH 201-251, Microscopy.
- 306 EARLY WORKS TO 1860.
- 307 GENERAL WORKS SINCE 1860.
- ~~308~~ 308 TEXTBOOKS. *See also QH 307.*
- 309 POPULAR WORKS.
- 310 TABLES, ETC.
- 311 ESSAYS, LECTURES, ADDRESSES, ETC.
- 313 Miscellaneous speculations.
- 315 STUDY AND TEACHING.
- 317 Laboratory manuals.
- 321 Laboratories.
- 323 Biological stations.
 (Descriptive, administrative reports, etc.)
 Scientific contributions (serial) in QH 301.
- 324 Methods of research; apparatus. Biological chemistry.
 See also QH 201-251, Microscopy.
- 324.5 Catalogs of apparatus and supplies.
- Life.**
- 325 Origin and beginnings.
 Spontaneous generation, etc.
- 331 Nature and properties of living substance (including early
 works on protoplasm).
- 335 Molecular structure.
- 341 Vital force, etc.
- 343 Comparative study of living and non-living matter.
 (Response, etc.)
- 345 Chemical properties. *See also QD 415, Chemistry of vital products; QP 501-801,*
Physiological chemistry.
- 347 Differences and resemblances between plants and animals.
- 349 Miscellaneous.
- 351 General morphology.
 See also QK 641, Plant morphology; QL 799, Animal morphology.
- Theory of descent. Evolution. Origin of species.**
 Paleontological works in QE.
- 361 History.
- 363 Works before Darwin.
- 365 WORKS OF DARWIN (alphabetically by title).
- 366 GENERAL TREATISES (since 1859).
- 367 Popular works. Essays, lectures, addresses, etc.
- 368 DESCENT OF MAN. Man's place in nature.

- Theory of descent. Evolution. Origin of species—Continued.**
- 369 Miscellaneous criticisms and speculations.
- 371 Miscellaneous special topics.
e. g., Extinction; Phylogeny.
- 401 **Variation.**
- 405 Statistical methods.
Special results.
- 406 Plants.
- 408 Animals.
- 411 Experimental study.
- 421 **Hybridization.** *See also SF 105, Breeding (Animal industry).*
- 423 Plants.
See also SB 123, Breeding, crossing, selection, etc. (Horticulture).
- 425 Animals.
See also SF 105, Breeding (Animal industry).
- 431 **Heredity.**
- 471 **Reproduction.**
See also QK 825-827 925-929, Plants; QP 251-273, Animals.
- 475 Asexual.
- 477 Fission.
- 479 Budding.
- 481 Sexual.
- 485 Fertilization.
- 487 Parthenogenesis.
- 489 Alternation of generations.
- 491 **Development.**
See also QK 665, Plants; QL 951-979, Animals.
- 499 **Regeneration.**
- 501 **General physiology (of the individual).** *See also QK 731, 771, Plants; QP 301, Animals.*
- 511 Interchange of energy.
Growth, movements, performance of work in general.
See also QK 731, 771, Plants; QP 301, Animals.
- 521 **Metabolism.**
Food, assimilation, respiration, etc.
See also QK 881-898, Plants; QP 171, Animals.
- 531 **Miscellaneous topics.**
- 541- **General Ecology.** *See also QK 901-929, Ecology (Botany).* *1940 for 10 island societies.*
- 543 **Acclimatization.** *See also QK 901-929, Ecology (Botany).* *By type 4 environments A-Z.*
- 544 Phenology.
- 546 **Adaptation.**
Protective mechanisms, mimicry, etc.
- 548 Symbiosis.
- 549 Colonies
- 556 Degeneration.
- 558 Senescence.

- 559 Death.
See also QP 87.
- The Cell.** General cytology.
See also QK 725, The vegetable cell and tissues.
- 581 General works.
- 591 Protoplasm.
Cf. QH 331.
- 595 Nucleus.
- 597 Centrosome.
- 599 Chromatin.
- 601 Cell membrane.
- 605 Cell division. Karyokinesis.
- 611 Physical properties.
- 615 Osmosis.
See also QD 543. Theory of solution.
- 621 Turgescence.
- 631 Physiological properties.
- 635 Production of heat.
- 641 Production of light. Phosphorescence.
- 645 Production of electricity.
- 647 Irritability (of the cell alone).
- 650 Influence of physical and chemical agencies.
See also QK 731-759, Growth (Plant physiology).
- 651 Light. Phototropism.
- 653 Temperature.
- 655 Electricity.
- 657 Gravity.
- 659 Chemicals.
- 671 Pathological changes; death.
See also QH 559.
- Economic Biology.**
Cf. S-SK, Agriculture.
- 705 General works.
Genetics, plant and animal breeding, see S 494.
Economic botany, see SB 107-109.
Economic zoology, see SB 801-999.

QK: BOTANY

CLASS QK
BOTANY

Horticulture in SB; Forestry in SD.

- 1 PERIODICALS, SOCIETIES, ETC.
- 3 COLLECTED WORKS (non-serial).
- 5 VOYAGES AND EXPEDITIONS.
- 7 ENCYCLOPEDIAS.
- 9 DICTIONARIES.
- 11 INDEXES. NOMENCLATORS.
- 13 INDEXES OF POPULAR NAMES.
HISTORY.
- 15 General.
- 21 Local (by countries, alphabetically).
BIOGRAPHY OF BOTANISTS.
- 26 Collective.
- 31 Individual.
e. g., .C2 Candolle.
.G8 Gray.
.T7 Torrey.
- 35 DIRECTORIES.
- 41 EARLY WORKS (before 1753).
See also QH 41.
WORKS AFTER 1753.
Systematic botany, see QK 91-97.
- 45 General works.
- 46 General special.
- 47 Textbooks.
- 48 Compendis.
- 49 Rudiments.
- 50 Popular works.
Flora of special countries, see QK 110-174.
- 51 STUDY AND TEACHING.
- 52 Outlines, syllabi, etc.
- 53 Laboratory manuals.
See also QK 673.
- 55 Charts.
- 57 Plant analysis blanks.
- 61 COLLECTING AND PRESERVATION.
BOTANICAL GARDENS.¹
See also QK 479, Arboreta.
- 71 General.
- 73 Individual.

¹ Descriptions, catalogs and administrative reports only; other serial publications in QK 1.

- HERBARIA.¹
- 75 General.
- 77 Individual.
- 78 LABORATORIES.¹
- 79 MUSEUMS.¹
- 81 ESSAYS, LECTURES, ADDRESSES, ETC.
- 83 Plant lore. Plants of the Bible.
- 84 Floral emblems. Language of flowers.
- 85 National flowers.
- 87 Curiosa.
- 91 WORKS OF LINNÆUS (botany only).
See also QH 43, General works of Linnaeus.
- 92 LINNÆAN SYSTEM—MINOR WORKS.
- NATURAL SYSTEMS.
- 93 General.
- 94 Minor works.
- 95 Discussion and comparison of systems.
- 96 Nomenclature. Check-lists.
- 97 COMPREHENSIVE SYSTEMATIC WORKS.
Cf., QK 45, General botany.
- 98 PICTORIAL WORKS (ICONES).
- 99 MEDICAL BOTANY (General only).
See also RS 164-165, Drugs of the vegetable kingdom.
- 100 Poisonous plants.
.A1-3, General; .A5-Z, Special countries.
Geographical Distribution (Plant geography).
- 101 General works.
- 103 Marine flora. *103 Several parts of the world e.g. the British Empire.*
- 105 Fresh-water flora.
Cf., Physiographic regions, QK 901-976. *105 A. ...*
- Topographical Divisions.**
- 110 North America.
- 112 Illustrations of North American flora
(Not systematically arranged.)
- 115 United States.
By regions:
- 117 Northeastern.
- 118 Popular handbooks.
- 121 New England.
- 125 Southeastern.
- 139 Rocky Mountains, Sierras and Plateaus.
- 141 Great Basin.
- 142 Southwest.
- 143 Pacific coast.

¹ Descriptions, catalogs and administrative reports only; other serial publications in QK 1.

Topographical Divisions.

North America.

United States—Continued.

By States:

145	Alabama.
146	Alaska.
147	Arizona.
148	Arkansas.
149	California.
150	Colorado.
151	Connecticut.
152	Delaware.
153	District of Columbia.
154	Florida.
155	Georgia.
156	Idaho.
157	Illinois.
159	Indiana.
160	Iowa.
161	Kansas.
162	Kentucky.
163	Louisiana.
164	Maine.
165	Maryland.
166	Massachusetts.
167	Michigan.
168	Minnesota.
169	Mississippi.
170	Missouri.
171	Montana.
172	Nebraska.
173	Nevada.
174	New Hampshire.
175	New Jersey.
176	New Mexico.
177	New York.
178	North Carolina.
179	North Dakota.
180	Ohio.
181	Oklahoma.
182	Oregon.
183	Pennsylvania.
184	Rhode Island.

Topographical Divisions.

North America.

United States.

By States—Continued.

- 185 South Carolina.
- 186 South Dakota.
- 187 Tennessee.
- 188 Texas.
- 189 Utah.
- 190 Vermont.
- 191 Virginia.
- 192 Washington.
- 193 West Virginia.
- 194 Wisconsin.
- 195 Wyoming.
- 201 Canada.
- 211 Mexico.
- 215 Central America.
- 216 British Honduras.
- 217 Costa Rica.
- 218 Guatemala.
- 219 Honduras.
- 220 Nicaragua.
- 221 Panama.
- 222 Salvador.
- 225 West Indies.
- 226 Bahamas.
- 227 Cuba.
- 228 Haiti.
- 229 Jamaica.
- 230 Porto Rico.
- 231 Other. [A-Z]
- 232 Bermudas.
- 241 South America.
- 261 Argentine Republic.
- 262 Bolivia.
- 263 Brazil.
- 264 Chile.
- 265 Colombia.
- 266 Ecuador.
- 267 Guiana, British.
- 268 Guiana, Dutch.
- 269 Guiana, French.

Topographical Divisions.

South America—Continued.

- 270 Paraguay.
 271 Peru.
 272 Uruguay.
 273 Venezuela.
 Adjacent islands in Pacific, see QK 473.
 275 Atlantic islands.
 281 Europe.
 Zone and physiographic divisions.
 297 Alpine plateaus.
 303 Other.
 By countries.
 306 Great Britain. England.
 307 Ireland.
 308 Scotland.
 309 Wales.
 310 Austria-Hungary.
 313 France. Riviera.
 313. 5 Monaco.
 314 Germany.
 315 Greece.
 316 Italy.
 317 Netherlands.
 318 Belgium.
 319 Luxembourg.
 320 Holland.
 321 Russia.
 322 Poland.
 323 Finland.
 Scandinavia.
 324 General (including Lapland).
 325 Denmark.
 326 Norway.
 327 Sweden.
 Spain and Portugal.
 329 Spain.
 330 Portugal.
 331 Switzerland.
 332 Turkey and Balkan States.
 333 Bulgaria.
 334 Montenegro.
 335 Roumania.
 336 Servia.
 339 Other European.

Topographical Divisions--Continued.

- 341 Asia.
- 352 Afghanistan.
- 353 Arabia.
- 354 Baluchistan.
- 355 China.
- 358 India.
- 359 Ceylon.
- 360 Indo-China.
- 361 French Indo-China (not divided by country).
(Annam, Cambodia, Cochin-China, Tonkin.)
- 364 Siam.
- 365 Straits Settlements.
- 366 Indonesia. Malay Archipelago.
- 367 Dutch East Indies (not divided by country).
- 368 Philippines.
- 369 Japan.
- 370 Korea.
- 371 Persia.
- 372 Russia in Asia.
- 374 Central.
- 375 Siberia.
- 376 Turkey in Asia.
- 377 Armenia.
- 378 Palestine.
- 379 Syria.
- 381 Africa.
- 391 Tropical Africa.
- 393 West Africa.
- 395 Abyssinia.
- British.
- 396 General and South.
- 397 Cape of Good Hope.
- 398 Natal.
- 399 Transvaal. Orange Free State.
- 400 Central.
- 401 East.
- 402 Other special, A-Z.
e. g., .N5 Nigeria.
.U2 Uganda.
- 403 Egypt.
- French.
- 405 Algeria and Tunis.
- 407 Madagascar.
- 408 Senegambia.

Topographical Divisions.

Africa.

French—Continued.

- 409 Sahara.
 410 Other, A-Z.
 e. g., R4, Réunion.

German.

- 411 East.
 412 Kamerun.
 413 Southwest.

Italian.

- 414 Eritrea.
 415 Somali.
 416 Kongo.

417 Liberia.

418 Morocco.

Portuguese.

- 419 East.
 420 West.

Spanish.

422 Canaries.

423 Rio Oro.

424 Tripoli.

Australia.

- 445 New South Wales.
 447 New Zealand and adjacent islands.
 451 North Australia.
 453 Queensland.
 455 South Australia.
 457 Tasmania.
 459 Victoria.
 461 Western Australia.

Pacific islands.

- 471 General.
 473 Individual groups, A-Z.
 474 Arctic and Antarctic.
 474.5 Tropical regions.

SPERMATOPHYTA.

General works, see General Botany.

Trees and Shrubs.

See also SD 435, Timber trees.

- 475 General works.
 477 General special.

Spermatophyta.

Trees and Shrubs—Continued.

- 479 Arboreta. Fruticeta.
Local.
- 481 Sylvas of North America and United States.
- 482 Popular handbooks.
- 484 United States. Special states, A-W.
- 486 Other American (by countries, A-Z).
- 487 Europe.
- 488 Great Britain.
- 489 Other European, A-Z.
- 490 Asia (by countries, A-Z). *.12 seven works.*
- 491 Africa (by countries, A-Z).
- 492 Australia and New Zealand.
- 493 Pacific islands, A-Z.
- 494 Miscellaneous special topics.
- 495 Systematic divisions, A-Z.

.A.-Aceraceae	e.g., .C11,	Cactaceae. .P76	Filices .P100	aceae	.S79	Stapelieae	
.C29 Cucurbitaceae	2 fig. unless	otherwise on list	.C74,	Compositae. .Pal	Poplar	.V59	Vernonieae
.C97 Cycadaceae	Lil Lobeliae	.C75,	Coniferae. .P73	Poplar			
.E84 Eschscholtzia	.L52	Leguminosae	.G74,	Gramineae. .R93	Rubaceae		
.E86 Eucalyptus	.M.-	Malvaceae	.L72,	Liliaceae. .S24	Sarraceniacae	ae	
.J93 Juglandaceae	.M.-	Melastomataceae	.L72,	Liliaceae. .S27	Saxifragaceae		
.G74 Grasses	.N14	Naiadaceae	.P17,	Palmae. .S47	Scyphoidae		
.G9 Gymnosperms	.C58	Onagraceae					
	.064	Orchids					

CRYPTOGAMIC BOTANY.

- 505 General.
- 507 Systematic and descriptive works. Classification.
Local (divided by country only as specified).
- 509 North America.
- 511 United States.
- 512 Other American, A-Z.
Europe.
- 513 Great Britain.
- 514 Other European, A-Z.
- 515 Asia.
- 516 Africa.
- 517 Australia and New Zealand.
- 518 Pacific islands, A-Z.
- 519 Arctic and Antarctic.
- Pteridophyta. Ferns, etc.
- 520 Periodicals, societies, etc.
- 521 Biology. Anatomy, physiology, etc.
- 523 General systematic and descriptive works. Classification.
- 524 Systematic divisions, A-Z.

- e. g., .E6, Equisetum.
- .I9, Lycopodium.
- .P7, Polypodium.
- .S46, Selaginella.

Cryptogamic botany.

Pteridophyta. Ferns, etc.—Continued.

Local (divided by country only as specified).

- 525, United States (and North America in general).
 526 Other American, A-Z.
 .A1 General (including works on South America,
 Central America, or West Indies).
 .A5-Z Special countries, A-Z.
 Europe.
 527 Great Britain.
 528 Other European, A-Z.
 529 Asia.
 530 Africa.
 531 Australia and New Zealand.
 532 Pacific islands, A-Z.

Musci. Mosses.

- 534 Periodicals, societies, etc.
 535 Biology. Anatomy, physiology, etc.
 537 General systematic and descriptive works. Classification.
 539 Systematic divisions, A-Z.
 e. g., .M68, Mniaceae.
 .P7, Polytrichaceae.
 .S75, Sphagnaceae.

Local (divided by country only as specified).

- 541 United States (and North America in general).
 542 Other American, A-Z.
 Europe.
 543 Great Britain.
 544 Other European, A-Z.
 545 Asia (by countries, A-Z).
 546 Africa (by countries, A-Z).
 547 Australia and New Zealand.
 548 Pacific islands, A-Z.
 549 Arctic and Antarctic.

Hepaticae. Liverworts.

- 551 Biology. Anatomy, physiology, etc.
 553 General, systematic, and descriptive works. Classification.
 555 Systematic divisions, A-Z.
 e. g., .J9, Jungermanniaceae.
 .M2, Marchantiaceae.
 .R5, Ricciaceae.

Local (not divided by country).

- 556 United States (and North America in general).
 557 Other American.
 Europe.
 558 Great Britain.
 559 Other European.

Cryptogamic botany.**Hepaticae.** Liverworts.

Local—Continued.

- 560 Asia.
 561 Africa.
 562 Australia and New Zealand.
 563 Pacific islands.

Algae.

- 564 Periodicals, societies, etc.
 565 Biology. Anatomy, physiology, etc.
 567 General, systematic, and descriptive works. Classification.
 569 Systematic divisions, A-Z.

e. g., Bacillaria, see Diatomaceae.

- .B2, Bangiaceae.
 .C4, Ceramiaceae.
 .C47, Characeae.
 .C6, Chlorophyceae.
 .C8, Corallinaceae.
 .D46, Desmidiaceae.
 .D54, Diatomaceae.
 .F95, Fucaceae.
 .L2, Laminariaceae.
 .P5, Phaeophyceae.
 .P94, Protococcaceae.
 .R4, Rhodophyceae.
 Spirogyra, see QK 569.Z8.
 .V9, Volvocaceae.
 .Z8, Zygnemaceae.

Local (divided by country only as specified).

- 571 United States (and North America in general).
 572 Other American, A-Z.
 Europe.
 573 Great Britain.
 574 Other European, A-Z.
 575 Asia (by countries, A-Z).
 576 Africa (by countries, A-Z).
 577 Australia and New Zealand.
 578 Pacific islands, A-Z.
 580 Arctic and Antarctic.

Lichens.

- 581 Biology. Anatomy, physiology, etc.
 583 General, systematic, and descriptive works. Classification.
 585 Systematic divisions, A-Z.
 e. g., .G8, Graphidacei.
 .P2, Parmeliacei.
 .S8, Stictacei.

Cryptogamic botany.**Lichens—Continued.**

Local (divided by country only as specified).

- 587 United States (and North America in general).
 588 Other American, A-Z.
 589 Europe. (see 587)
 Great Britain.
 590 Other European, A-Z.
 591 Asia.
 592 Africa.
 593 Australia and New Zealand.
 594 Pacific islands, A-Z.
 597 Arctic and Antarctic.

Fungi.

See also SB601, Fungus diseases.

- 600 Periodicals, societies, museums.
 601 Biology. Anatomy, physiology, etc.
 603 General, systematic and descriptive works. Classification.
 604 Miscellaneous.

Local.

Prefer QK 617 for popular works on "Mushrooms."

- 605 United States. (see 617)
 606 Other American, A-Z.
 Europe.
 607 Great Britain.
 608 Other European, A-Z.
 609 Asia (by country, A-Z).
 610 Africa (by country, A-Z).
 611 Australia and New Zealand.
 612 Pacific islands, A-Z. (see 617)
 617 Edible and poisonous fungi. Mushrooms (Popular works).
 See also SB 353, Mushroom culture.

Systematic divisions.

Under 621-629:

.A1, General; .A2-Z, Special, alphabetically.

621 Phycomycetes.

- e. g., .M94, Mucoraceae.
 .P45, Peronosporaceae.
 .S24, Saprolegniaceae.

623 Ascomycetes.

- e. g., .A8, Ascololaceae.
 .A9, Aspergillaceae.
 .D6, Discomycetes.
 .E7, Erysiphie.
 .P4, Penicillium.
 .P5, Pezizaceae.
 .P9, Pyrenomycetes.
 .T8, Tuberaceae (Truffles).
 Saccharomyces, see QR151.

Cryptogamic botany.

Fungi.

Systematic divisions—Continued.

- 625 Fungi imperfecti.
e. g., .M74, Monilia.
.O3, Oidium.
- 626 Lower Basidiomycetes.
- 627 Uredinaceae (Rusts).
e. g., .G9, Gymnosporangium.
.P97 Puccinia.
- 628 Ustilaginaceae (Smuts).
e. g., .T5, Tilletia. *628.5 Ustilaginaceae, A-2*
.U8 Ustilago. *e.g. Auriculariaceae (Helicoglossa), etc.*
- 629 Higher Basidiomycetes.
e. g., .A4, Agaricaceae.
Boletus, see Polyporaceae.
.C61, Clavariaceae.
.G2, Gasteromycetes.
.H9, Hymenomycetes.
.L9, Lycoperdaceae.
.N5, Nidulariaceae.
.P6, Phallaceae.
.P7, Polyporaceae.
.T7, Tremellaceae.
- 633 Myxobacteriaceae.
- 635 Myxomycetes.
Schizomycetes or Bacteria, see QR.

MORPHOLOGY, ANATOMY AND EMBRYOLOGY.

Cf. QK 671-703. See also QH 351, General morphology.

- 641 General.
- 643 Individual groups (alphabetically). *Spermatophytes .G99*
- Vegetative organs.
- 644 Root and modifications. Root tubercles.
Bacteriology of root nodules, see QR 113.
- 645 Shoot (including buds, growing points, etc.).
- 646 Stem (including bulbs, rhizomes, types of branching).
- 647 Wood.
- 648 Bark.
- 649 Leaf and modifications. Stipules.
- 650 Appendages. Trichomes, thorns, spines, tendrils, scales, hairs, etc.
- 651 Thallus.
- 652 Reproductive organs of spermatophytes.
- 653 Flower and inflorescence.
- 654 Receptacle.
- 655 Perianth.
- 656 Calyx.
- 657 Corolla (including nectaries).

Morphology, Anatomy and Embryology.

Reproductive organs of spermatophytes.

Perianth—Continued.

658 Androecium (Stamens, pollen, etc.).

659 Gynoecium (Pistils, ovary, etc.).

660 Fruit and seed.

661 Seed.

662 Reproductive organs of cryptogams.

663 Alternation of generations.

664 **Teratology.**665 **Embryology** (embryos, embryo-sacs, spermatogenesis, etc.).

667 Phylogeny.

669 Nomenclature of color as applied to plant description.

ANATOMY AND HISTOLOGY.

Cf. QK 641-662. See also QH 581-601, The cell (General biology);

QK 725, The vegetable cell and tissues.

N. B. The subdivisions in curves have been discontinued. See QK 641-663.

671 General.

673 Laboratory manuals, technique, microscopy, photomicrography.

See also QH 201-251, Microscopy.

(683) Individuals groups (alphabetically).

Individual parts.

(684) Root.

(685) Shoot.

(686) Stem.

(687) Wood.

(688) Bark.

(689) Leaf.

(690) Types of branching.

(691) Inflorescence.

(692) Flower.

(693) Receptacle.

(694) Perianth.

(695) Calyx.

(696) Corolla.

(697) Androecium.

(698) Gynoecium.

(699) Fruit.

(701) Seed.

(703) Appendages. Trichomes, thorns, etc.

705 Anatomical classification of plants.

707 Anatomy and development of tissues.

PLANT PHYSIOLOGY.

See also QH 501-531, General physiology..

- 711 General works.
- 715 Apparatus.
- PHYSICAL.
- 720 Physiology of the vegetative organs.
- 725 The vegetable cell and tissues.
See also QH 581-671, The cell (General biology.)
- 731 **Growth.**
- 740 Germination.
- 745 Factors influencing growth.
- Chemical agents affecting plants.
- 746 General (including nutritive matter, etc.).
- 751 Poisons, gases, etc.
- Physical agents affecting plants.
- 755 Heat (including heat production in plants).
- 756 Freezing.
- 757 Light.
- 758 Electricity.
- 759 Mechanical forces.
- 761 Periods of development.
- 763 Shedding of leaves and other organs. Abscission.
- 769 Miscellaneous special topics. *Effect of poisons*
- 771 **Movements.** Irritability in plants (general).
Movements affecting growth.
- 773 Nutation. Torsion.
Climbing plants, tendrils, etc.
- 776 Miscellaneous induced movements.
Geotropism, heliotropism, effect of light, etc.
- 791 Movements of variation (not affecting growth).
Spontaneous periodic movements.
Nyctitropism.
Irritability of mature organs.
- 825 **Reproductive processes.**
See also QH 471-489, Reproduction (General biology);
QH 423, Hybridization.
- 826 Vegetative propagation.
- 827 Sexual reproduction.
Fecundation. Fertilization. Sterility.
- 840 **Reparative processes. Regeneration in plants.**
Cf. SB 763, Tree surgery, etc.
- 358 **CHEMICAL.** *Electrophysiology*
- 861 General works.
- 865 Chemical composition of plant body.
- 866 Chemical analysis of individual plants (alphabetically).
See also S 587, Agricultural chemistry, analyses; QD 421, Alkaloids.

Plant Physiology.**Chemical—Continued.**

- 867 **Nutrition.** Plant food. Assimilation of nitrogen.
- 871 Absorption of fluids. Wilting.
- 873 Transpiration.
- 881 **Metabolism.**
- 882 Photosynthesis. Assimilation and utilization of carbon dioxide.
- 887 Formation of new organic matter.
- 891 Respiration.
- 896 Fermentation. Enzymes, Diastase, etc.
- 897 Miscellaneous products.
- 898 **Special plant constituents, A-Z.**
 e. g., .A2, Albumen.
 .A4, Alkaloids.
 .C2, Calcium oxalate.
 .C3, Carbohydrates.
 .C5, Chlorophyll. Cf. QK 882.
 .T2, Tannin, Tannic acid.
- 899 **Miscellaneous special topics.**
 e. g., Color, Pigments, Crystals.

ECOLOGY.

See also QH 541-549, General ecology.

- 901 **General works.**
- 903 **Ecological discussion of areas.**
 Prefer QK 939-976.
- 909 **Illustrations of flora of regions.**
- 911 **Vegetative interrelation.**
- 913 **Acclimatization.**
 Phenology, see QH 544.
- 915 **Nutritive adaptation.**
- 916 **Aquatics, ice plants, dew plants.**
- 917 **Insectivorous plants.**
- 918 **Parasites, saprophytes, symbionts.**
- 921 **Protective adaptations.**
- 922 **Epiphytes, salt-marsh and desert plants.**
- 923 **Spines, secretion, raphides.**
- 924 **Myrmecophilism, acarophilism.**
- 925 **Reproductive interrelation.**
- 926 **Pollination.**
- 929 **Dissemination.**
- Physiographic regions.**
- 930 **Water.**
- 931 **Marine.**
- 932 **Fresh water.**

Ecology.

Physiographic regions.

Water—Continued.

933

Plankton.

Cf. QL 123, 143; QK 916.

934

Marine.

935

Fresh water.

Land.

General, see QK 101 and 901.

936

Tropics.

937

Alpine flora.

938

Other special, A-Z.

e. g., .D4, Deserts; .D9, Dunes; .M3, Marshes; .P7, Prairies.

Special country divisions.

939

North America.

940

United States.

941

States.

942

Cities.

America other than United States.

946

Canada.

947

Mexico.

950

Other special, A-Z.

955

Europe.

956

Special countries, A-Z.

960

Asia.

961

Asia Minor.

962

Special countries, A-Z. *tu... [unclear]*

965

Africa.

966

Special countries, A-Z.

970

Australia and New Zealand.

971

Special, A-Z.

975

Oceania.

976

Special, A-Z.

Evolution of plants.

980

General.

981

Heredity.

(983)

Variation, see QH 406.

985

Natural and artificial selection.

987

Degeneration.

(989)

Phylogeny, see QK 667.

Variation in plants, see QH 406.

Vegetable pathology, see SB 621-791.

QL: ZOOLOGY

CLASS QL
ZOOLOGY

Animal culture in SF.

- 1 PERIODICALS, SOCIETIES, ETC.
- 3 COLLECTED WORKS (non-serial).
- 5 VOYAGES AND EXPEDITIONS.
See also Q 115; QH 11; G 150-420.
- 7 ENCYCLOPEDIAS.
- 9 DICTIONARIES.
Cf. QL 353-5, Nomenclature.
- HISTORY.
- 15 General.
- 21 Special countries, A-Z.
- BIOGRAPHY OF ZOOLOGISTS.
- 26 Collective.
- 31 Individual.
e. g., .A9, Audubon.
.C9, Cuvier.
.O9, Owens.
.W7 Wilson, Alexander.
- 35 DIRECTORIES.
- 41 EARLY WORKS (BEFORE 1758).
See also QH 41.
- 45 COMPREHENSIVE WORKS ON THE ENTIRE ANIMAL KINGDOM.
- 46 Pictorial works (Icones).
- TEXTBOOKS.
- 47 Advanced.
- 48 Elementary.
- 49 Rudiments.
- 50 POPULAR WORKS.
Stories and anecdotes in QL 791-795.
- 51 STUDY AND TEACHING.
- 52 Outlines, syllabi, etc.
- 53 Laboratory manuals.
See also QL 812.
- 57 Use of pictures, lantern slides, etc.
- COLLECTING AND PRESERVATION.
See also QL 465, Insects—Collecting and preservation.
- 61 General.
- 62 Collecting.
Alluring (Bait, Light, etc.), Hunting, Nets, Killing,
Exchange, Purchase, Rearing, Transporting.

COLLECTING AND PRESERVATION—Continued.

- 63 Taxidermy.
- 67 Arrangement of specimens in museums; cabinets, labels.
Preservation: museum pests, pestifuges; prevention of moisture; retention of colors.
- 69 LABORATORIES.¹
- 71 MUSEUMS.¹
See also QL 814, Museums of comparative anatomy. Special catalogs are classified by subjects.
- 72 Commercial lists.
- 73 MENAGERIES.
ZOOLOGICAL GARDENS.¹
- 76 General.
- 77 Individual.
- AQUARIUMS (for animals).¹
See also QH 68.
- 78 General.
- 79 Individual.
- 81 ESSAYS, LECTURES, ADDRESSES, ETC.
- 83 Bible zoology
- 87 Animals in the ancient world.
- 89 ANIMAL LORE.
- 99 MEDICAL ZOOLOGY. *poisoned animals* IP 941 Venom.
Geographical distribution.
- 101 General.
- 104 Arctic and Antarctic.
- 105 Arctic regions.
- 106 Antarctic regions.
- 107 Temperate regions.
- 109 Tropical regions.
Physiographic divisions.
- LAND.
- 111 Islands.
- 112 Forests.
- 113 Mountains.
- 115 Plains.
- 116 Deserts.
- 117 Caves.
- 118 Subterranean waters.
- 120 WATER (GENERAL).
- 121 OCEAN.
- 122 Popular works.
- 123 Plankton.
- 124 Animal ecology of the ocean.

¹ Descriptions, catalogs, etc. See QL 1 for serial publications.

Geographical distribution.

Physiographic divisions.

OCEAN—Continued.

- 126 Arctic and Antarctic oceans.
 127 Atlantic Ocean.
 128 North Atlantic. North Sea, etc.
 131 Baltic.
 133 Mediterranean.
 134 Gulf of Mexico.
 135 South Atlantic.
 137 Indian Ocean. Red Sea.
 138 Pacific Ocean.
 141 FRESH WATER.
 143 Plankton.
 145 Streams.
 146 Lakes.
 147 Springs.
 148 Wells.
 149 Stagnant water.

Topographical divisions (faunas).

- 151 NORTH AMERICA.
 155 United States.
 159 Alabama.
 161 Alaska.
 162 Arizona.
 163 Arkansas.
 164 California.
 165 Colorado.
 166 Connecticut.
 167 Delaware.
 168 District of Columbia.
 169 Florida.
 171 Georgia.
 172 Idaho.
 173 Illinois.
 175 Indiana.
 176 Iowa.
 177 Kansas.
 178 Kentucky.
 179 Louisiana.
 181 Maine.
 182 Maryland.
 183 Massachusetts.
 184 Michigan.
 185 Minnesota.

Topographical divisions.

NORTH AMERICA.

United States—Continued.

- 186 Mississippi.
- 187 Missouri.
- 188 Montana.
- 189 Nebraska.
- 191 Nevada.
- 192 New Hampshire.
- 193 New Jersey.
- 194 New Mexico.
- 195 New York.
- 196 North Carolina.
- 197 North Dakota.
- 198 Ohio.
- 199 Oklahoma.
- 201 Oregon.
- 202 Pennsylvania.
- 203 Rhode Island.
- 204 South Carolina.
- 205 South Dakota.
- 206 Tennessee.
- 207 Texas.
- 208 Utah.
- 209 Vermont.
- 211 Virginia.
- 212 Washington.
- 213 West Virginia.
- 214 Wisconsin.
- 215 Wyoming.
- 219 Canada.
- 221 By provinces, A-Z.
- 225 Mexico.
- 227 Central America.
- 229 West Indies.
- 234 Bermudas.
- 235 South America.
- 239 Argentine Republic.
- 241 Bolivia.
- 242 Brazil.
- 243 Chile.
- 244 Colombia.
- 245 Ecuador.
- 246 Guiana.
- 247 Paraguay.

Topographical divisions.

South America—Continued.

- 248 Peru.
- 249 Uruguay.
- 251 Venezuela.
- 253 Europe.
- 255 Great Britain.
- 257 Ireland.
- 259 Scotland.
- 261 Austria-Hungary.
- 263 France.
- 265 Germany.
- 271 Greece.
- 273 Italy.
- 275 Netherlands. Holland.
- 277 Belgium.
- 278 Luxembourg.
- 281 Russia.
- 284 Poland.
- 285 Finland.
- 286 Scandinavia.
- 287 Denmark.
- 288 Iceland.
- 289 Norway.
- 291 Sweden.
- 293 Spain and Portugal.
- 294 Portugal.
- 296 Switzerland.
- 297 Turkey and the Balkan States.
- 300 Asia.
- 304 Afghanistan.
- 305 Arabia.
- 306 Baluchistan.
- 307 China.
- 309 India.
- 312 Indo-China.
- 313 Annam.
- 314 Cambodia.
- 315 Cochin China.
- 316 Tonkin.
- 317 Siam.
- 318 Straits Settlements.
- 319 Indonesia. Malay Archipelago.
- 321 Dutch East Indies (not divided by country).
- 323 Philippines.

Topographical divisions.

Asia—Continued.

- 325 Japan.
- 327 Korea.
- 329 Persia.
- 331 Asiatic Russia. Siberia.
- 333 Asiatic Turkey.
 - Armenia.
 - Palestine. Syria.
- 336 Africa.
 - 337 By countries, A-Z.
- 338 Australia and New Zealand.
 - 339 By colonies, A-Z.
- 340 New Zealand and adjacent islands.
- 345 Pacific islands, A-Z.

CLASSIFICATION.

- 351 Principles.
- 352 Systems.

NOMENCLATURE.

- 353 General works. Principles.
- 354 Nomenclators and check lists.
- 355 Popular names.

INVERTEBRATES.

- 362 General treatises.
- 363 Anatomy, morphology.
- 364 Physiology.
- 365 Animalcules. Early works on Infusoria.

Protozoa.

See also QR 251, Pathogenic protozoa.

- 366 General treatises.
- 367 Geographical distribution (not divided by countries).
 - .1 North America (United States and Canada).
 - .2 Mexico, Central America, and West Indies.
 - .3 South America.
 - .4 Europe.
 - .5 Asia.
 - .6 Africa.
 - .7 Australia and New Zealand.
 - .8 Pacific islands.
 - .9 Arctic and Antarctic.
- 368 Systematic list (subdivisions, A-Z).
 - e. g., .A5, Amoebaea.
 - .C5, Ciliata.
 - .C7, Coccidiidea.
 - .D6, Dinoflagellata. Peridiniaceae.

Invertebrates.

- 368 **Protozoa—Continued.**
 e. g., .F5, Flagellata.
 .F6, Foraminifera.
 .G8, Gregarinidea.
 .H5, Heliozoa.
 Infusoria, *see* 365, 368.C5, 368.F5, etc.
 .R2, Radiolaria.
 .R4, Rhizopoda.
 .S9, Suctoria.
- 369 **Anatomy, morphology, biology.**
- Porifera (sponges).**
- 371 **General treatises.**
- 372 **Geographical distribution (not divided by countries).**
 .1 North America.
 .2 Mexico, Central America, and West Indies.
 .3 South America.
 .4 Europe.
 .5 Asia.
 .6 Africa.
 .7 Australia and New Zealand.
 .8 Pacific islands.
 .9 Arctic and Antarctic.
- 373 **Systematic list (subdivisions, A-Z).**
 e. g., .C2, Calcarea.
 .H6, Hexactinellida.
 .K4, Keratosa.
 .M7, Monaxonida.
 .T4, Tetractinellida.
- 374 **Anatomy, morphology, physiology, biology.**
- Cœlenterata.**
- 375 **General treatises.**
- 376 **Geographical distribution (not divided by countries).**
 .1 North America.
 .2 Mexico, Central America, and West Indies.
 .3 South America.
 .4 Europe.
 .5 Asia.
 .6 Africa.
 .7 Australia and New Zealand.
 .8 Pacific islands.
 .9 Arctic and Antarctic.
- 377 **Systematic list (subdivisions, A-Z).**
 e. g., .C5, Corals (Anthozoa).
 .C6, Alcyonaria.
 .C7, Zoantharia.
 .C8, Ctenophora.
 .H9, Hydrozoa or Hydromedusae.
 .S4, Scyphozoa or Scyphomedusae.
- 378 **Anatomy, morphology, physiology, biology.**
- 379 **ZOOPHYTA (old sense).**

Invertebrates—Continued.

Echinodermata.

- 381 General treatises.
 382 Classification, check-lists, catalogs, collections.
 383 Geographical distribution (not divided by countries).
 .1 North America.
 .2 Mexico, Central America, and West Indies.
 .3 South America.
 .4 Europe.
 .5 Asia.
 .6 Africa.
 .7 Australia and New Zealand.
 .8 Pacific islands.
 .9 Arctic and Antarctic.
- 384 Systematic list (subdivisions, A-Z).
 e. g., .A8, Asteroidea (Starfish).
 .C8, Crinoidea.
 .E2, Echinoidea (Sea-urchins).
 .H7, Holothuroidea (Sea-cucumbers).
 .O6, Ophiuroidea (Brittle-stars).
- 385 Anatomy, morphology, physiology, biology.

Vermes.

- 386 General treatises.
 387 Classification, check-lists, catalogs, collections.
 388 Geographical distribution (not divided by countries).
 .1 North America.
 .2 Mexico, Central America, and West Indies.
 .3 South America.
 .4 Europe.
 .5 Asia.
 .6 Africa.
 .7 Australia and New Zealand.
 .8 Pacific islands.
 .9 Arctic and Antarctic.
- 391 Systematic list (subdivisions, A-Z).
 e. g., .A2, Acanthocephala.
 .A6, Annelida.
 .A8, Archiannelida.
 .C4, Cestoda (Tapeworms).
 .C6, Chaetognatha.
 .G5, Gephyrea. Echiuroidea, etc.
 .H6, Hirudinea (Leeches).
 .N4, Nematoda.
 .N5, Nematomorpha.
 .N6, Nemertinea.
 .O4, Oligochaeta (Earthworm, etc.).
 .P5, Phoronidea.
 .P7, Platyhelminthia.
 .P9, Polychaeta.
 .P95, Pterobranchia.
 .R8, Rotifera.
 .T7, Trematoda.
 .T9, Turbellaria.

Invertebrates.**Vermes—Continued.**392 **ENTOZOA.**

See also QL 757, Parasites; RC 220-248, Diseases caused by Parasites.

393 Anatomy, morphology.

394 Physiology, biology.

Brachiopoda.

395 General works.

395. 1 Classification, check-lists, catalogs, collections.

Geographical distribution (not divided by countries).

. 2 North America.

. 23 Mexico, Central America, West Indies.

. 25 South America.

. 3 Europe.

. 4 Asia.

. 5 Africa.

. 6 Australia and Pacific islands.

. 7 Arctic and Antarctic.

. 8 Systematic list (subdivisions A-Z).

e. g., .L7, Lingulidae.

.T4, Terebratulidae.

. 9 Anatomy, morphology, physiology, biology.

Polyzoa or Bryozoa.

396 General works.

396. 5 Classification, check-lists, catalogs, collections.

397 Geographical distribution (not divided by countries).

. 1 North America.

. 2 Mexico, Central America and West Indies.

. 3 South America.

. 4 Europe.

. 5 Asia.

. 6 Africa.

. 7 Australia and New Zealand.

. 8 Pacific islands.

. 9 Arctic and Antarctic.

398 Systematic list (subdivisions, A-Z).

e. g., .C5, Chilostomata.

.C8, Ctenostomata.

.C9, Cyclostomata.

.E2, Ectoprocta.

.E6, Entoprocta.

.G9, Gymnolaemata.

.P6, Phylactolaemata.

399 Anatomy, morphology, physiology, biology.

Invertebrates.

Mollusca (Mollusks, Shells, Conchology);

See also SH 365-379, Oyster culture and fisheries.

- 401 Periodicals, Societies, etc.
 402 Collected works (non-serial).
 403 General works.
 404 Pictorial works (Icones).
 405 Popular and juvenile. Shell collecting.
 406 Classification, check-lists, catalogs, collections.
 Geographical distribution.
 407 Land and Fresh-water.
 408 Marine.
- Topographical divisions (divided by country only as specified.)
- 411 North America.
 413 Canada.
 414 United States.
 415 By States (land and fresh-water).
 416 Atlantic Coast.
 417 Pacific Coast.
 418 Islands.
 419 Gulf Coast.
 421 Mexico.
 422 Central America.
 423 West Indies.¹
 424 South America.
 425 Europe.¹
 .M5, Mediterranean.
 426 Asia.¹
 427 Africa.
 428 Australia and New Zealand.
 428.5 Pacific islands.¹
 429 Arctic and Antarctic.
- Systematic list.
- 430.1 Amphineura (not subdivided).
 .2 Cephalopoda (general and orders).
 .3 By families, alphabetically.
 e. g., .N4, Nautilidae.
 .O2, Octopodidae.
 .4 Gasteropoda (general and orders).
 .5 By families, alphabetically.
 e. g., .A2, Achatinellidae.
 .C5, Chitonidae.
 .H4, Helicidae.
 .H45, Helicinidae.

¹ .A1, General; .A3-Z, Special countries, islands, or regions.

Invertebrates.**Mollusca.**

Systematic list.

Gasteropoda.

430. 5 By families—Continued.

- e. g., .L4, Limacidae.
- .L55, Limnaeidae.
- .M4, Melaniidae.
- .M9, Muricidae.
- .N3, Nassidae.
- .P9, Pupidae.
- .V7, Viviparidae.

430. 6 Lamellibranchiata (general and orders).

. 7 By families, alphabetically.

- e. g., .C9, Cyprinidae.
- .M9, Myidae.
- .O9, Ostreidae.
- .P3, Pectinidae.
- .T4, Teredinidae.
- .U6, Unionidae.
- .V5, Veneridae.

. 8 Scaphopoda (not subdivided).

431 Anatomy, morphology, physiology, biology.

432 Miscellaneous.

434 **ARTHROPODA.****Crustacea.**

435 General treatises.

436 Pictorial works (Icones).

437 Popular and juvenile.

438 Classification, check-lists, catalogs, collections.

441 Geographical distribution (not divided by countries).

. 1 North America.

. 2 Mexico, Central America, and West Indies.

. 3 South America.

. 4 Europe.

. 5 Asia.

. 6 Africa.

. 7 Australia and New Zealand.

. 8 Pacific islands.

. 9 Arctic and Antarctic.

444 Systematic list (subdivisions, A-Z).

- e. g., .A5, Amphipoda.
- .A7, Arthrostraca.
- .B8, Branchiopoda.
- .C5, Cirrepedia (Barnacles).
- .C6, Cladocera.
- .C7, Copepoda.
- .C9, Cumacea.
- .D3, Decapoda (Lobsters, crabs, crayfish, shrimps, etc.).

Invertebrates.**Crustacea.**

- 444 Systematic list—Continued.
 e. g., .E6, Entomostraca.
 .I8, Isopoda.
 .L6, Leptostraca (Phyllocarida).
 .O8, Ostracoda.
 .P5, Phyllopoda.
 .S3, Schizopoda.
 .S8, Stomatopoda.
 .T5, Thoracostraca.
- 445 Anatomy, morphology, physiology, biology.
- 447 **Pantopoda, Pentastomida, Tardigrada, Xiphosura.**
 .P2 Pantopoda or Pycnogonida.
 .P4 Pentastomida (Linguatula, etc.).
 .T2 Tardigrada.
 .X7 Xiphosura (King-crabs).
- 448 **Prototracheata. Onychophora. Peripatus.**
- 449 **Myriapoda.** (Millepedes, Centipedes, etc.)
Arachnida. (Spiders.)
 Special families and genera of spiders to be classed QL 458.A6.
- 451 General treatises.
- 452 Popular and juvenile.
- 453 Classification, check-lists, catalogs, collections.
- 457 Geographical distribution (not divided by countries).
 .1 North America.
 .2 Mexico, Central America, and West Indies.
 .3 South America.
 .4 Europe.
 .5 Asia.
 .6 Africa.
 .7 Australia and New Zealand.
 .8 Pacific islands.
 .9 Arctic and Antarctic.
- 458 Systematic list (subdivisions, A-Z).
 e. g., .A2, Acarina (Mites, Ticks, etc.).
 .A6, Araneae (special families and genera only).
 .P3, Pedipalpi.
 .P5, Phalangidea.
 .S4, Scorpionidea.
 .S7, Solifugae.
- 459 Anatomy, morphology, physiology, biology.

Insects.

See also SB 823-987, Economic entomology; SF 541-559, Silkworms.

- 461 Periodicals, Societies, etc.
- 462 Collected works (non-serial)
- 463 General works. ⁴⁶³ *Lictiones. Glossaria. Terminology*
- 464 Field and laboratory manual
- 465 Collecting and preservation.

Invertebrates.**Insects—Continued.**

- 466 Pictorial works (Icones).
 467 Popular and juvenile.
 468 Classification, check-lists, catalogs, collections.
 469 Geographical distribution (divided by country only as specified.)
 473 North America.
 474 United States.
 475 By States, A-W.
 476 Canada.
 477 Mexico.
 478 Central America.
 479 West Indies.¹
 481 South America.¹
 482 Europe.¹
 483 Asia.¹
 485 Africa.
 487 Australia and New Zealand.
 489 Pacific islands.¹
 491 Arctic and Antarctic.
 494 Anatomy, morphology.
 495 Physiology.
 496 Biology, Metamorphosis, Social life, Instinct.
 497 Miscellaneous.

Aptera.

- 501 General treatises.
 502 Geographical distribution (not divided by countries).
 .1 North America.
 .2 Mexico, Central America, and West Indies.
 .3 South America.
 .4 Europe.
 .5 Asia.
 .6 Africa.
 .7 Australia and New Zealand.
 .8 Pacific islands.
 .9 Arctic and Antarctic.
 503 Systematic list (subdivisions, A-Z).
 e. g., .A6, Anoplura (Lice).
 .A7, Aphaniptera (Fleas).
 .C6, Collembola.
 .M2, Mallophaga (Bird-lice, etc.).
 .T5, Thysanoptera (Thrips).
 .T6, Thysanura.
 504 Anatomy, morphology, physiology, biology.

¹ .A1, General; .A3-Z, Special countries, islands, or regions.

Invertebrates.

Insects—Continued.

- Orthoptera.** (Grasshoppers, locusts, etc.,
 506 General treatises.
 507 Geographical distribution (not divided by countries).
 .1 North America.
 .2 Mexico, Central America, and West Indies.
 .3 South America.
 .4 Europe.
 .5 Asia.
 .6 Africa.
 .7 Australia and New Zealand.
 .8 Pacific islands.
 .9 Arctic and Antarctic.
- 508 Systematic list (subdivisions, A–Z).
 e. g., .A2, Acridiidae (True locusts and grasshoppers).
 .B6, Blattidae (Cockroaches).
 .F7, Forficulidae (Earwigs).
 .G8, Gryllidae (Crickets).
 .L8, Locustidae (Longhorned grasshoppers or green grass-
 hoppers; katydids).
 .M2, Mantidae (Praying insects).
 .P5, Phasmidae (Walking-sticks, etc.).
- 509 **Anatomy, morphology, physiology, biology.**
- Neuroptera.** (Dragon flies, etc.)
- 511 General treatises.
 512 Geographical distribution (not divided by countries).
 .1 North America.
 .2 Mexico, Central America, and West Indies.
 .3 South America.
 .4 Europe.
 .5 Asia.
 .6 Africa.
 .7 Australia and New Zealand.
 .8 Pacific islands.
 .9 Arctic and Antarctic.
- 513 Systematic list (subdivisions, A–Z).
 e. g., .E6, Embiidae.
 .E7, Ephemeriidae (May-flies).
 .H5, Hemerobiidae.
 .O2, Odonata (Dragon-flies).
 .P4, Perlidae.
 .P7, Planipennia.
 .S6, Sialidae. \
 .T3, Termitidae (White ants).
- 514 **Anatomy, morphology, physiology, biology.**
- Trichoptera. Phryganeidae.** (Caddis-flies.)
- 516 General treatises.
 517 Geographical distribution (not divided by countries).
 .1 North America.
 .2 Mexico, Central America, and West Indies.

Invertebrates.**Insects.****Trichoptera. Phryganeidae.**

- 517 Geographical distribution—Continued.
 .3 South America.
 .4 Europe.
 .5 Asia.
 .6 Africa.
 .7 Australia and New Zealand.
 .8 Pacific islands.
 .9 Arctic and Antarctic.

519 Anatomy, morphology, physiology, biology.

Hemiptera. (Bugs.)

- 521 General treatises.
 522 Geographical distribution (not divided by countries).
 .1 North America.
 .2 Mexico, Central America, and West Indies.
 .3 South America.
 .4 Europe.
 .5 Asia.
 .6 Africa.
 .7 Australia and New Zealand.
 .8 Pacific islands.
 .9 Arctic and Antarctic.

523 Systematic list (subdivisions, A-Z).

- e. g., .A3, Aleurodidae.
 .A6, Aphididae (Plant-lice, Phylloxera, etc.).
 .C2, Capsidae.
 .C5, Cicadidae (Cicadas, etc.).
 .C6, Cimicidae (Bedbug, etc.).
 .C7, Coccidae (Scale-insects, etc.).
 .F9, Fulgoridae.
 .H6, Heteroptera.
 .H7, Homoptera.
 (J2), Jassidae (Leaf-hoppers).
 .L9, Lygaeidae (Chinch-bug, etc.).
 .P5, Pentatomidae.
 .P8, Psyllidae.

524 Anatomy, morphology, physiology, biology.

Diptera. (Flies, etc.)

- 531 Comprehensive works.
 532 Pictorial works (Icones).
 533 Popular and juvenile.
 534 Classification, check-lists, catalogs, collections.
 535 Geographical distribution (not divided by countries).
 .1 North America.
 .2 Mexico, Central America, and West Indies.
 .3 South America.
 .4 Europe.
 .5 Asia.
 .6 Africa.

Invertebrates.

Insects.

Diptera.

- 535 Geographical distribution—Continued.
 .7 Australia and New Zealand.
 .8 Pacific islands.
 .9 Arctic and Antarctic.
- Systematic list.
- 536 Mosquitoes. (Culicidae.)
 537 Other subdivisions, A–Z.
 e. g., .B7, Blepharoceridae.
 .C4, Cecidomyiidae.
 .E5, Empidae.
 .M6, Muscidae Acalyptratae.
 .M7, Muscidae Calyptratae (House-flies, Tsetse flies,
 etc.).
 .O3, Oestridae. *No ant*
 .P8, Pupipara. *Phoridae*
 .T2, Tabanidae.
 .T3, Tachinidae.
 .T6, Tipulidae.
- 538 Anatomy, morphology, physiology, biology.
 Lepidoptera. (Butterflies and moths.)
- 541 Periodicals, Societies, etc.
 542 Comprehensive works.
 543 Pictorial works (Icones).
 544 Popular and juvenile.
 545 Classification, check-lists, catalogs, collections.
 546 Geographical distribution (divided by country only as
 specified).
- 548 North America.
 549 United States.
 551 By States, A–W.
 552 Canada.
 553 Mexico, Central America, and West Indies.
 554 South America.
 555 Europe.¹
 556 Asia.
 557 Africa.
 558 Australia and New Zealand.
 559 Pacific islands.¹ *560 Arctic and Antarctic*
 561 Systematic list (subdivisions, A–Z).
 e. g., .B6, Bombycidae.
 .G6, Geometridae.
 .H5, Hesperidae.
 .N7, Noctuidae.

¹ .A1, General; .A3–Z, Special countries, islands, regions.

Invertebrates.**Insects.****Lepidoptera.**

- 561 Systematic list—Continued.
 e. g., .N9, Nymphalidae.
 .P2, Papilionidae.
 .P9, Pyralidae.
 .S2, Saturniidae.
 .S7, Sphingidae.
 .T7, Tineidae.
 .T8, Tortricidae.
- 562 Anatomy, morphology, physiology, biology.
- Hymenoptera.** (Ants, bees, wasps, etc.)
 See also SF 521-533, Bee culture.
- 563 Comprehensive works.
- 564 Pictorial works (Icones).
- 565 Popular and juvenile.
- 566 Classification, check-lists, catalogs, collections.
- 567 Geographical distribution (not divided by countries).
 .1 North America.
 .2 Mexico, Central America and West Indies.
 .3 South America.
 .4 Europe.
 .5 Asia.
 .6 Africa.
 .7 Australia and New Zealand.
 .8 Pacific islands.
 .9 Arctic and Antarctic.
- 568 Systematic list (subdivisions, A-Z).
 e. g., .A2, Aculeata.
 .A6, Apidae or Anthophila (Bees).
 .C4, Chalcidae.
 .C9, Cynipidae (Gall-flies).
 (.E8) Eumenidae (Solitary wasps), see .V5.
 .F7, Formicidae (Ants).
 .I2, Ichneumonidae.
 Petiolata, see QL 563-567.
 .P9, Proctotrypidæ.
 (.S4) Scoliidae, see .V5.
 .T3, Tenthredinidae (Saw-flies).
 .T9, Tubulifera.
 .V5, Vespidae, Eumenidae, and other wasps.
- 569 Anatomy, morphology, physiology, biology.
- Coleoptera.** (Beetles.)
- 571 Periodicals, Societies, etc.
- 572 Collected works (non-serial).
- 573 Comprehensive works.
- 574 Compendis.
- 575 Pictorial works (Icones).

Invertebrates.

Insects.

Coleoptera—Continued.

- 576 Popular and juvenile.
 577 Classification, check-lists, catalogs, collections.
 578 Geographical distribution (divided by country only as specified).
 581 North America.
 583 United States.
 584 By States, A-W.
 585 Canada.
 586 Mexico.
 587 Central America.
 588 West Indies.
 589 South America.¹
 591 Europe.¹
 592 Asia.
 593 Africa.
 594 Australia and New Zealand.
 595 Pacific islands.¹
 596 Systematic list (subdivisions, alphabetically).
 e. g., .C15, Cantharidae.
 .C2, Carabidae.
 .C5, Chrysomelidae.
 .C56, Cicindelidae.
 .C9, Curculionidae (Weevils).
 .M2, Malacodermidae (Fireflies, etc.).
 .P5, Phytophaga.
 .S3, Scarabaeidae.
 .S75, Staphylinidae.
 .T2, Tenebrionidae.
- 597 Anatomy, morphology, physiology, biology.

599 Strepsiptera.

600 *Meccoptera***VERTEBRATES.**

- 605 General works.
 Anatomy, morphology, etc., see QL 805.
 607 Classification; check-lists, etc.
 610 PROCHORDATA.
 611 Amphioxus. Leptocardii.
 612 Enteropneusta.
 613 Tunicata. Ascidia. (Synascideae, Salpidae, etc.)
Fishes. Ichthyology.
 Fish-culture, Fisheries and Angling in SH.
 614 Collections.
 615 General works.
 616 Pictorial works (Icones).

¹ .A1, General; .A3-Z, Special countries, islands, regions.

Vertebrates.

Fishes—Continued.

- 617 Popular and juvenile works.
- 618 Classification, nomenclature, check-lists, catalogs, collections.
618. 5 Study and teaching.
- 619 Geographical distribution.
- 620 Ocean.
- 621 Atlantic.
- 622 Indian.
- 623 Pacific.
- 624 Fresh-water.
- Topographical divisions.
(Divided by country, province, etc., only as specified.)
- 625 North America.
- 626 Canada.
- 627 United States.
- 628 By States, A-W.
- 629 Mexico.
- 630 Central America.
- 631 West Indies.¹
- 632 South America.¹
- 633 Europe.¹
- 634 Asia.¹
- 635 Africa.¹
- 636 Australia and New Zealand.
636. 5 Pacific islands.¹
- 637 Arctic and Antarctic.
- Systematic list.
- 638 Teleostei (subdivisions, A-Z).
- e. g., .A1 General.
- .A4 Ammodytidae.
- .A55 Anguillidae (Eels).
- .A7 Apodes.
- .B6 Blenniidae.
- .C3 Centrarchidae (Bass, sunfish, etc.).
- .C8 Cottidae.
- .C94 Cyprinidae (Carp, goldfish, etc.).
- .E2 Echeineidae (Remora, etc.).
- .E4 Elopidae (Tarpon, etc.).
- .G2 Gadidae (Cod, haddock, etc.).
- .G85 Gymnodontes.
- .G9 Gymnotidae (Electric eel, etc.).
- .P4 Percidae (Perch).
- .P7 Pleuronectidae (Flatfishes).
- .S2 Salmonidae (Salmon, trout, etc.).

¹ .A1, General; .A3-Z, Special countries, islands, regions.

Vertebrates.

Fishes.

Systematic list.

- 638 Teleostei subdivisions—Continued.
 e. g., .S35 Scombridae (Mackerel, etc.).
 .S6 Siluridae (Catfishes).
 .S9 Syngnathidae (Sea-horse, pipe-fish, etc.).
 .Z4 Zeidae.
638. 1 Cyclostomi (Lampreys, myxinidae, etc.).
 638. 3 Dipnoi (Lung-fishes).
 638. 5 Ganoidei (Sturgeons, garpike, etc.).
 638. 7 Holocephali (Chimaeridae).
 638. 9 Plagiostomi (Sharks, dogfish, rays).
 639 Anatomy, morphology, physiology, biology.
- 641 **Reptiles, Batrachia.**
 641 Comprehensive works.
 643 Pictorial works (Icones).
 644 Popular and juvenile works.
 645 Classification, check-lists, catalogs, collections.
 648 Geographical distribution (divided by country only as specified).
- 651 North America.
 652 United States.
 653 By States, A-W.
 654 Canada.
 655 Mexico.
 656 Central America. West Indies.
 657 South America.
 658 Europe.¹
 661 Asia.
 662 Africa.
 663 Australia and New Zealand.
 664 Pacific islands.¹
- 666 Systematic list (subdivisions, A-Z).
 Reptiles.
 e. g., .C5, Chelonia (Tortoises, turtles).
 .C9, Crocodilia.
 .L2, Lacertilia (Lizards).
 .O6, Ophidia (Snakes).
- 668 Batrachia. Amphibia.
 e. g., .A6, Apoda or Coeciliae. Limbless Amphibia.
 .C2, Caudata or Urodela. Tailed Amphibia (Salamanders, Newts, etc.).
 .E2, Ecaudata or Anura. Tailless Amphibia (Frogs and Toads).
- 669 Anatomy, morphology, physiology, biology.

¹ .A1, General; .A3-Z, Special countries, islands, regions.

Vertebrates.

Birds.

- 671 Periodicals, Societies, etc.
 672 Collected works (non-serial).
 673 General works.
 674 Pictorial works (Icones).
 675 Birds' eggs and nests.
 676 Popular and juvenile works.
 676. 5 Methods of attracting birds. Bird houses, etc.
 Cf. SK 351-579, Game protection.
 677 Classification. Nomenclature. Check-lists, catalogs, collections.
 . 5 Study and teaching.
 . 7 Collection and preservation.
 Geographical distribution (divided by country only as specified).
 678 General.
 679 Zone divisions.
 681 North America and United States.
 United States.
 683 Special regions.
 684 States, A-W.
 685 Canada.
 686 Mexico.
 687 Central America.
 688 West Indies.¹
 689 South America.¹
 690 Europe.¹
 691 Asia.¹
 692 Africa.
 693 Australia and New Zealand.
 694 Pacific islands.¹
 695 Arctic and Antarctic.
 696 Systematic list (subdivisions, A-Z).
 c. g., .A2, Accipitiformes (Eagles, hawks, etc.).
 .A3, Alciiformes (Auks, puffins).
 Alectorides, *see* Gruiformes.
 .A5, Anseriformes (Geese, ducks, etc.).
 .A6, Apteryges.
 .A7, Ardeiformes (Herons, storks, etc.).
 .C2, Caprimulgi (Night-hawks, etc.).
 .C3, Casuariiformes (Cassowaries).
 .C4, Charadriiformes, *see* also subdivision .L7.
 .C5, Cocyges (Cuckoos, etc.).
 See also subdivision .M9.

¹.A1, General; .A3-Z, special countries, islands, regions.

Vertebrates.

Birds.

Systematic list—Continued.

- e. g.. C6, Columbiformes (Pigeons).
 .C7, Coraciiformes, see also subdivisions .C2, .C9, .H3, .M5
 .C9, Cypseli (Swifts).
 .G2, Galliformes (Game-birds).
 Gaviae, *see* Lariformes.
 .G8, Gruiformes (Cranes, rails, etc.).
 .H3, Halcyones (Kingfishers).
 Herodiones, *see* Ardeiformes.
 Impennes, *see* Sphenisciformes.
 .L3, Laroiformes (Gulls, terns, etc.).
 .L7, Limicolae (Shore-birds, plovers, snipe, etc.).
 .M5, Meropes (Bee-eaters).
 .M9, Musophagi.
 .P2, Passeriformes.
 (.P21-299) Special, A-Z (not used at present).
 .P4, Pelecaniformes.
 .P5, Pici (Woodpeckers).
 .P6, Procellariiformes (Petrels).
 .P7, Psittaciformes (Parrots).
 .P9, Pygopodes (Loons, grebes, etc.).
 .R3, Rhamphastidae (Toucans).
 .R4, Rheiformes (Rheas).
 .S3, Seansores.
 .S5, Sphenisciformes (Penguins).
 .S6, Steganopodes (Gannets, Cormorants, etc.).
 .S8, Strigiformes (Owls).
 .S9, Struthioniformes (Ostriches).
 .T6, Trochili (Humming-birds).
 .T7, Trogones (Trogons).
- 697 Anatomy, morphology.
 698 Physiology, biology, migration, etc.
 699 Miscellaneous (Birds of the Bible, etc.).
- Mammals.**
- 701 Collected works (non-serial).
 703 Comprehensive works.
 704 Compendis.
 705 Pictorial works (Icones).
 706 Popular and juvenile works.
 708 Classification, check-lists, catalogs, collections.
 711 Geographical distribution (divided by country only as specified).
 715 North America.
 717 United States.
 719 By States, A-W.
 721 Canada.
 722 Mexico.
 723 Central America.

Vertebrates.

Mammals.

Geographical distribution—Continued.

- 724 West Indies.¹
 725 South America.¹
 726 Europe.
 727 Great Britain.
 728 Other countries, A-Z.
 729 Asia.¹
 731 Africa.
 733 Australia and New Zealand.
 735 Pacific islands.¹
 736 Arctic and Antarctic.
 737 Systematic list (subdivisions, A-Z).
 .C2 Carnivora.
 .C4 Cetacea (Whales, Dolphins, Porpoises, etc.).
 Whale fishery in SH381-387.
 .C5 Chiroptera (Bats).
 .E2 Edentata (Ant-eaters, Sloths, Armadillos).
 .I5 Insectivora (Moths, Shrews, Hedgehogs, etc.).
 .M3 Marsupialia (Kangaroos, Opossums, etc.).
 .M7 Monotremata.
 .M9 Multituberculata.
 .P6 Pinnipedia (Seals, Seal-lions, etc.).
 .P9 Primates (Lemurs, Monkeys, Apes, etc.).
 .R6 Rodentia (Beaver, Guinea-pig, Porcupine, Rabbits and
 hares, Rats and mice, Squirrel, etc.).
 .S6 Sirenia (Manatees and Dugongs).
 Ungulata.
 .U4 General.
 .U5 Artiodactyla.
 e. g., Hippopotamus, Pig.
 Ruminantia:
 Antelope, Camel, Chevrotain, Deer, Giraffe,
 Goat, Llama, Okapi, Oxen, Sheep, etc.
 .U6 Perissodactyla.
 e. g., Horse, Rhinoceros, Tapir.
 .U7 Hyracoidea (Hyrax).
 .U8 Proboscidea (Elephants).
 738 Miscellaneous.
 739 Anatomy, morphology.
 See also QL805.

¹ .A1, General; A3-Z, special countries, islands, regions.

ETHOLOGY.

(Habits, behavior, etc.)

- 750 Periodicals. Societies. Collections.
 751 General works.
 Cf. QH 541-559, General ecology.
 Special topics.
 753 Seasonal habits.
 See also QH 544, Phenology.
 754 Migration.
 Cf. QL 698.
 755 Hibernation.
 756 Food and shelter.
 757 Parasitism.
 See also QL 392, Entozoa.
 761 Sexual relations.
 765 Voice: sound production.
 767 Color phenomena.
 See also QH 546, Adaptation.
 775 Social relations.
 Gregariousness.
 781 Instinct.
 785 Psychology. *Psychology*
- STORIES AND ANECDOTES.
- 791 General.
 795 Special (alphabetically by common name of animal).
 799 General morphology.

R4 Bears
 .85 Beavers
 .D3 Deer
 .E4 Elephant
 .K6 Dog.

ANATOMY.

Here are classified general works on comparative anatomy and special works on the anatomy of individual organs; for works on the anatomy of special groups of animals, see the preceding systematic divisions. Human anatomy in QM.

- 801 PERIODICALS, SOCIETIES, ETC.
 803 COLLECTED WORKS (non-serial).
 805 GENERAL WORKS.
 806 PICTORIAL WORKS; ATLASES.
 807 COMPARATIVE HISTOLOGY.
 Special tissues, see QM 559-575.
 808 Essays, lectures, addresses, etc.
 812 Study and teaching; Laboratory manuals. *811 - Study + teaching. 812 - ... syllabj etc.*
 814 Museums.
 821 Skeleton. Osteology.
 Histology, see QM 569.
 823 Catalogs of specimens.
 825 Articulations.
 827 Ligaments.

- 831 **Muscles.**
Vascular system.
- 835 Blood vessels.
838 Heart.
841 Lymphatics.
845 **Organs involved in the process of Respiration.**
846 Branchiæ (gills).
847 Tracheæ (of arthropoda).
848 Lungs.
849 Pleura.
851 Diaphragm.
852 Respiratory passages.
853 Larynx.
854 Trachea. Bronchi.
855 Air sacs, swimming bladders, etc.
856 **Organs involved in the process of Nutrition.**
857 Mouth.
858 Teeth.
861 Pharynx; esophagus.
862 Stomach.
863 Intestines.
864 Peritoneum. Mesentery and Omentum.
Glands.
865 Salivary glands.
866 Pancreas.
867 Liver.
868 The ductless glands.
(Spleen, Thyroid, Thymus, Suprarenal, Pineal gland, Pituitary body.)
- 871 **Urogenital system.**
872 Excretory organs.
Nephridia.
Kidneys.
Ducts.
Bladder.
- 876 Reproductive organs.
878 Male.
881 Female.
- Nervous system.**
See also QM 451-471, Nervous system (Human anatomy); QM 575,
Nerve tissues (Histology); QP 361-381, Nervous system (Physiology).
- 921 Periodicals, societies, etc.
923 Collections.
925 General works.
927 Laboratory manuals; neurological technique.
931 Nervous elements; cells, fibers, supporting structures, etc.
Prefer QM 575 for general histology.

Nervous system—Continued.

Central nervous system.

933 General.

Special types.

935 Invertebrate.

937 Vertebrate.

939 Peripheral nervous system.

940 *Organs of defense and offense. Arms, weapons.*

941 Integument. Skin.

942 Hair, scales, nails, hoofs, horns.

943 Skin glands. *Usuriteria, glands.*

944 Mammæ.

945 Sense organs.

946 Tongue.

947 Nose.

948 Ear.

949 Eye.

950 Topographical and regional anatomy.

. 1 General.

. 2 External form of the body.

. 3 Trunk.

. 4 Neck.

. 5 Head.

. 6 Tail.

. 7 Limbs.

. 9 Segmental anatomy.

EMBRYOLOGY.

Works on the development of special types of organisms are to be classed 958 or 959; works on the development of special embryonic parts (e. g. germinal layers, primitive streak, notochord, etc.) and works on the later development of embryos are to be classed 971. In the case of special organs preference is to be given to comparative anatomy, 821-950, with added entry in 958 or 959.

See also QM 601-611, Human embryology.

- 951 Collected works. *458 H 577*
- 955 General works.
- 957 Laboratory manuals.
- Special types.
- 958 Invertebrate.
- 959 Vertebrate.
- Special topics. *171 Exce...*
- 965 Oogenesis and ovum.
- 966 Spermatogenesis and spermatozoon.
Fertilization, see QH 485.
- 971 Development of embryo.
- 973 Allantois; placenta. *1 = An...*
- 981 Metamorphosis. *977 Chr...*
- 991 Teratology.

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QM: HUMAN ANATOMY

CLASS QM
HUMAN ANATOMY

Comparative anatomy in QL 801-949; Physical anthropology in GN.

- 1 PERIODICALS, SOCIETIES, ETC.
- 5 COLLECTED WORKS (non-serial).
- 11 HISTORY.
- 16 BIOGRAPHY OF ANATOMISTS.
e. g., .A2, Collected biography.
.V5, Vesalius.
- 21 WORKS BEFORE 1800.
- 23 TREATISES AND TEXTBOOKS (general and descriptive).
- 24 Comparative anatomy of man.
Cf. QL 805 Comparative anatomy of animals.
QH 368 Descent of man. Man's place in nature.
- 25 PICTORIAL WORKS. ATLASES.
- 26 Elements. Popular-works.
cf See also QP 36-38.
- 27—General morphology:
-Cf. GN 60.
- 30 STUDY AND TEACHING.
- ~~28~~—Compend.
- 31 Outlines, syllabi, etc.
- 32 Examinations, questions, etc.
- 33 Charts, manikins, etc.
- DISSECTION.
- 34 Manuals of practical anatomy.
- 35 Outline guides.
- 39 Laboratory technique.
- 41 Laboratories. Schools of anatomy.
- 51 Museums.
- 71 Essays, lectures, addresses, etc.
- 81 Terminology.
- 101 **The Skeleton.**
- 105 Skull.
See also GN 71-131, Craniology.
- 111 Vertebral column.
- 113 Ribs and sternum.
- 115 Hip bone and pelvis.
- 117 Bones of the extremities.
- 131 **The Articulations.**
- 141 Ligaments.

- 151 **The Muscles.**
 155 Of the head and neck.
 161 Of the trunk.
 165 Of the limbs.
 178 **Vascular System.**
 181 Heart.
 Pericardium.
 191 Arteries and Veins. *Capillaries*
 197 Lymphatics.
 251 **Organs of Respiration and Voice.**
 255 Larynx.
 257 Trachea. Bronchi.
 261 Lungs. Pleura. *267 Diaphragm*
 301 **Organs of Digestion.**
 306 Mouth.
 311 Teeth.
 325 Salivary glands.
 See also QP 191, Salivary secretion.
 331 Pharynx. Esophagus. Tonsils.
 341 Stomach.
 345 Intestines.
 351 Liver.
 353 Pancreas.
 367 Peritoneum. Mesentery and omentum.
 368 Glands (general).
 371 The ductless glands.
 (Spleen, Thyroid, Thymus, Suprarenal, Pineal gland, Pituitary body.)
 401 **Urinary and Reproductive Organs.**
 404 Kidneys.
 408 Ureters.
 411 Bladder.
 413 Urethra.
 416 Male organs of generation.
 421 Female organs of generation.
 431 Perineum.
 451 **Nervous System.**
 455 Brain.
 465 Spinal cord.
 469 Meninges.
 471 Peripheral system. Cranial nerves, etc.
 481 **Integument.**
 484 External skin.
 485 Bursæ mucosæ.
 488 Hair. Nails.
 491 Skin glands.
 495 Mammæ.

- 501 Sense Organs.
- 503 Tongue.
- 505 Nose.
- 507 Ear.
- 511 Eye.

REGIONAL ANATOMY.

(Surgical and Topographical.)

- 531 General treatises.
- Special regions.
- 535 Head and neck.
- 541 Thorax.
- 543 Abdomen.
- Limbs.
- 548 Upper.
- 549 Lower.

NORMAL HISTOLOGY.

(Microscopic Anatomy.)

- 550 *Color plates*
- 551 Treatises and textbooks.
- 553 Outlines, syllabi, etc.
- 555 Laboratory manuals.
- Special tissues.
- 559 Pigment. *See Atlas. Histology.*
- 561 Epithelium.
- 563 Connective tissues.
- 565 Adipose tissues.
- 567 Cartilaginous tissues.
- 569 Bony tissues.
- 571 Muscular tissues.
- 575 Nerve tissues.

HUMAN EMBRYOLOGY.

- 601 General works.
- 611 Special topics.
- 691 Teratology.
- 699 Early works on monsters.



QP: PHYSIOLOGY

(INCLUDING PHYSIOLOGICAL PSYCHOLOGY,
PHYSIOLOGICAL CHEMISTRY, AND
EXPERIMENTAL PHARMACOLOGY)

CLASS QP
PHYSIOLOGY

- 1 PERIODICALS, SOCIETIES, ETC.
- 6 COLLECTED WORKS (non-serial).
- 11 DICTIONARIES.
- 21 HISTORY.
- BIOGRAPHY OF PHYSIOLOGISTS.
- 25 Collective.
- 26 Individual.
 - e. g., .B5, Claude Bernard.
 - .H3, Harvey.
- 29 WORKS BEFORE 1800.
- 31 COMPREHENSIVE TREATISES.
- 33 Elementary comparative physiology. *2* *specia*
eg. Tra d ...
- HUMAN PHYSIOLOGY.
- 34 Treatises and advanced textbooks.
- 36 School textbooks of physiology and hygiene.
 - Cf. RA 420.
- 36.5 Textbooks for girls.
- 37 Juvenile literature. Rudiments of hygiene.
 - (Including textbooks for primary grades.)
- 38 Popular works.
- 39 STUDY AND TEACHING.
- 40 Quiz-compends, examination manuals.
- 41 Outlines, syllabi, etc.
 - Experimental physiology. Laboratory manuals.
- 42 Elementary.
- 44 Advanced.
- 45 Vivisection.
 - Cf. RD 61, Surgery.
 - Controversial literature, see HV 4905-4959.
- LABORATORIES.
- 51 General.
- 53 Individual.
- 55 Apparatus.
- 71 ESSAYS, LECTURES, ADDRESSES, ETC.
- 77 Miscellaneous speculations. Curiosa.
- 81 General phenomena of animal life.
- 82 Influence of environment (high altitudes, etc.).

General phenomena of animal life—Continued.

- 84 Changes during life (growth, puberty, periodic phenomena, etc.).
- 85 Duration of life. Longevity.
- 86 Senescence.
- 87 Death.
See also QH 559.
- 88 **Physiology of the tissues in general.**
(Including physical and chemical properties.) *effects of physical agents*
- 89 Transplantation. *882 Er.*
- 91 **Blood.** *90 1. ...* *883 Skin*
- 95 White corpuscles. *883 Hair*
See also QR 181, Immunity.
- 101 **Circulation.**
Blood pressure, velocity, pulse, etc.
- 111 Heart. Blood vessels.
- 115 Lymph and the lymphatic system.
- 121 **Respiration.**
- 135 Animal heat.
- 141 **Nutrition.** *(Fastig) (E ...)*
See also TX 551, Food values; RM 211-236, Diet.
- 145 **Digestion of food.**
Physiology of the special organs.
(Including innervation, muscular mechanism, etc.).
- 146 Mouth; pharynx; esophagus.
- 151 Stomach.
- 156 Intestines.
- 159 Feces.
- 165 Absorption.
- 171 Metabolism.
- 177 Relation of oxygen to metabolism (Oxidation, etc.).
- 185 Liver.
- 186 Glands (general).
- 187 The ductless glands. *L -*
(Spleen, Thyroid, Parathyroid, Thymus, Suprarenal, Pineal gland
Pituitary body.)
- 190 **Secretions.**
Of the Digestive glands.
- 191 Saliva.
- 193 Gastric juice.
- 195 Pancreatic juice.
- 197 Bile.
- 211 **Of the Kidney or other renal apparatus.**
Urine. *2.5. ... muc s.*
- 221 **Of the Skin.**
Sweat.

Secretions—Continued.

- 231 Tears.
 235 Venom.
 246 Milk. Mammary and allied functions.
 251 **Reproduction. Physiology of Sex.**
 See also QH 471-489, HQ 753, RJ 91.
 255 Testis and semen.
 See also QL 966, Spermatogenesis.
 257 Accessory male organs.
 261 Ovary and ovulation.
 See also QL 965, Oogenesis.
 265 Accessory female organs.
 273 Fecundation.
 See also QH 485, Fertilization
 277 Physiology of the embryo.
 See also QL 951-973, Embryology (Zoology);
 QM 601-611, Human embryology.
 281 Gestation.
 See also Obstetrics in RG.

Movements.

- 301 General.
 (Including physiology of exercise.)
 303 Mechanics.
 306 Voice and speech.
 See also MT 821, Voice culture.
 311 Other special movements.
 321 **Muscle.**
 331 **Nerve.**
 341 Electro-physiology.
 348 Electrical organs.

NERVOUS SYSTEM AND THE SENSES, INCLUDING PHYSIOLOGICAL PSYCHOLOGY.

- 351 PERIODICALS, SOCIETIES AND COLLECTIONS. T.F. 11-11-11 11-11-11 11-11-11
 353 HISTORY. 11-11-11 11-11-11 11-11-11
 354 EARLY WORKS (to 1800).
 355 GENERAL WORKS.
 357 Laboratory manuals. 357 11-11-11 11-11-11
 359 Minor works. Miscellany.
Nervous system.
 361 General works.
 363 Miscellaneous general functions. The neuron. Nerve-cells.
 365 Inhibition (General).
 366 Cerebro-spinal nerves.
 368 Ganglionic nervous system (including sympathetic system).

Nervous system—Continued.

- 371 SPINAL CORD.
 372 Reflex actions.
 374 Other special topics. *375 Cerebrospinal Fluid*
 376 BRAIN.
 377 Medulla oblongata.
 378 Midbrain, etc.
 379 Cerebellum.
 381 Cerebral hemispheres.
 385 Localization of functions.
 Time relations of central processes, Reaction time, etc.,
 see BF 317.
 Cf. QP 372.
 Association of ideas, see BF 365-367.
 Memory, see BF 371.
 401 Emotions. Pleasure and pain.
 Cf. BF 511-593.
 405 Attention and volition.
 411 Consciousness, subconsciousness, and unconsciousness.
 421 Fatigue.
 Cf. QP 321, Muscle; BF 481, Psychology.
 425 Sleep. Hypnotic conditions, etc.

The Senses.

- 431 General works.
 435 Sensation (general).
 Cf. BF 237.
 441 Perceptual processes.
 443 Space.
 445 Time.
 Special senses:
 451 Touch and other cutaneous senses.
 454 Sense of movement.
 456 Taste.
 458 Smell.
 HEARING. PHYSIOLOGICAL ACOUSTICS.
 See also Q C 225, Sound; ML 3820-3838, Psychology of music.
 461 General.
 463 Limits of audition.
 465 Tone. Concord and discord.
 Rhythm. Melody.
 469 Localization of sound.
 471 Labyrinthine sense. Equilibration.

The Senses.

Special senses.

VISION. PHYSIOLOGICAL OPTICS.

See also RE, Ophthalmology.

474-
475

General.

476

Eyeball (including accommodation).

479

Retina (general).

481

Light and color sensations.

After-images, Contrast, Fatigue.

Persistence, Flicker, Recurrent image.

Intensity.

485

Movements of eyeball.

487

Binocular vision.

491

Visual space perception.

Form, solidity, size.

Movement.

495

Visual illusions.

499

Miscellaneous.

PHYSIOLOGICAL CHEMISTRY.

See also QD 415, Chemistry of vital products; QH. 345, Chemical properties of living matter; RS 403-407, Medical chemistry.

501 PERIODICALS, SOCIETIES, ETC.

509 COLLECTED WORKS (non-serial).

514 GENERAL TREATISES AND TEXTBOOKS.

519 Laboratory manuals.

Special works.

525

Colloids.

Inorganic substances.

531

General.

535

Special (alphabetically by chemical symbol of principal element, as in QD 181).

551

Proteids and allied substances.

601

Enzymes. Fermentation.

Cf. QK 896, QR 151.

631

Toxins and antitoxins.

See also QR 181-185, Immunization.

671

Pigments.

701

Carbohydrates.

751

Fats and allied substances.

See also TP 676, Animal fats and oils (chemical technology).

801

Miscellaneous organic substances (alphabetically).

e. g., .P7, Ptomaines and leucomaines.

.P8, Purin and its derivatives.

.V5, Vitamins.

EXPERIMENTAL PHARMACOLOGY.

(Physiological effects of chemical substances on the animal body.)

See also RA 1201-1260, Toxicology; RS, Pharmacy.

- 905 General works. Laboratory manuals.
- 909 Miscellaneous general topics.
Individual chemical substances.
- 911 Water.
- 912 Groups of inorganic compounds (alphabetically).
e. g., .A6, Alkalies.
- 913 Elements and inorganic compounds.
(Alphabetically by chemical symbol of active element, as in QD 181.)
- 915 Non-nitrogenous compounds of the fatty series (alphabetically.)
- 917 Non-nitrogenous compounds of the aromatic series (alphabetically.)
- 921 Alkaloids (alphabetically). *922 Sugars (alphabetically).*
- 925 Glucosides (alphabetically).
- 931 Resins.
.A1 General.
- 935 Proteids and albuminoids (alphabetically).
.A1 General.
.G5 Gelatin.
- 941 Toxins. Venom. Poisons.
Cf. RA 1260, Ptomaines.
- 951 Fluids and substances obtained from the animal body.
Other organic compounds.
- 971 General and miscellaneous.
e. g., Coal-tar products.
- 981 Special, A-Z.

ALPHABETICAL LIST OF ORGANIC AND CARBON COMPOUNDS IN
EXPERIMENTAL PHARMACOLOGY, QP 913-981.

- | | | | |
|----------|-----------------|---------|------------------------------------|
| 915. A2 | Acetic acid. | 921. C3 | Caffeine. |
| 921. A2 | Aconitine. | 917. C2 | Camphor, camphoric acid, etc. |
| 915. A3 | Alcohol. | 915. C3 | Cantharidin. |
| 925. A4 | Aloin. | 913. S1 | Carbon disulphide. |
| 981. A5 | Amyl nitrate. | 913. C1 | Carbon monoxide. |
| 925. A6 | Antiarin. | 921. C6 | Chinoidine. |
| 921. A75 | Aspidospermine. | | Chloracetic acid, see Acetic acid. |
| 921. A8 | Atropine. | | |
| 915. B7 | Bromoform. | 915. C5 | Chloral. |

915. C6	Chloroform. (as anesthetic, see RDS6.C5).	921. O2	Opium.
981. C3	Choline.	915. O8	Oxalic acid.
921. C7	Cocaine.	921. O9	Oxydimorphine.
981. C7	Copaiba.	981. P5	Picrotoxin.
921. C8	Curare.	921. P6	Pilocarpine.
		941	Poisons.
981. D5	Digitalis.	981. P8	Preservatives, Food.
		981. P85	Pulsatilla.
921. E6	Ergot, Ergotin, etc. Ether, see RDS6. Ethyl chloride, see RDS6.	917. P9	Pyrogallie acid.
		981. P9	Pyrrrol.
981. P8	Food preservatives.	921. Q3	Quinine.
		921. Q4	Quinidamine.
981. F7	Frangula.		Quinoidine, see Chinoidine.
		921. Q6	Quinoline.
917. G2	Gallic acid.	981. S2	Saccharin.
935. G5	Gelatin.	917. S2	Salicylic acid.
915. G5	Glycerin.	917. S3	Santonin.
981. H5	Hedonal.	921. S4	Scopolamine.
925. H5	Helleborein.	917. S7	Sodium benzoate.
981. H9	Hydrocyanic acid.	921. S6	Sophorine.
		921. S7	Sparteine.
915. I2	Ichthyol.		Stimulants and narcot- ics, see RM421.
915. L2	Lactic acid.	921. S8	Strychnine.
917. L8	Lupulinic acid.	915. S7	Sugars.
921. L8	Lycaconitine.	913. C15	Sulphocyanic acid.
921. M8	Morphine.	921. T3	Tephrosia toxicaria.
981. M9	Musk.	981. T5	Thuja.
		917. T9	Turpentine.
915. N2	Naphtha and nafalan.	921. V5	Veratrine.
981. N9	Nucleic acid.		

QR: BACTERIOLOGY

(INCLUDING YEASTS, MOULDS, AND
PATHOGENIC PROTOZOA)

CLASS QR
BACTERIOLOGY

Government laboratories in R108.

- 1 PERIODICALS, SOCIETIES, ETC.
- 6 COLLECTED WORKS (non-serial).
- 21 HISTORY.
- 31 BIOGRAPHY OF BACTERIOLOGISTS.
Pasteur, see Q 143. P2.
- 41 GENERAL TREATISES.
~~TEXTBOOKS AND MANUALS.~~
- 46 Medical and surgical.
Special topics in QR 175-251.
- 47 Dental. (Mycology of the mouth.)
- 49 Veterinary.
See also QR 301-325.
- 51 Agricultural.
See also QR 111, Bacteria in soil; QR 121, in dairy products; QR 351 in
plant diseases.
- 53 Technical.
Cf. QR 151.
- 56 POPULAR WORKS.
5- Essays, lectures, addresses, etc.
- 61 STUDY AND TEACHING.
Outlines, syllabi, etc.
- 63 Laboratory manuals.
- 64 Laboratories.
- 65 LABORATORY TECHNIQUE.
Cf. QR 81.
- 66 Special culture methods.
- 68 Special microscopical methods.
- 69 Miscellaneous topics.
e. g., Staining.
- 71 Apparatus; laboratory equipment.
- 75 MORPHOLOGY.
- 81 CLASSIFICATION. DIFFERENTIATION. CHECK-LISTS, ETC.
Cf. QR. 65.
- 82 Systematic list (subdivisions, alphabetically).
.B201-99 Bacillus a-o.
e. g., .B21 B. aureus foetidus.
.B23 B. coli communis.
.B27 B. lactis aërogenes.

- 82 Systematic list—Continued.
- .B301-99 Bacillus p.
 - e. g., .B36 prodigiosus.
 - .B37 B. proteus vulgaris.
 - .B38 B. pseudanthracis.
 - .B39 B. Pyocyaneus.
 - .B401-99 Bacillus q-z.
 - e. g., .B41 B. radicola.
 - .B48 B. violaceus.
 - .C7 Coccaceae (Micrococcus, etc.).
 - .S6 Spirillaceae.
 - .S7 Staphylococcus.
 - .S8 Streptococcus.
 - .S9 Streptothricheae.
- 84 PHYSIOLOGY. CHEMISTRY.
- Bacteria, etc., in relation to non-living surroundings.**
- 101 Air.
 - 105 Water. *Sea water*
 - 111 Soil.
 - 113 Root nodules.
 - Inoculation in agriculture, see S 652.
 - 115 Foods.
 - See also TX 601, Canning and preserving.
 - 117 Meat.
 - 119 Bread. Cereals. *Fig. 2 1-2 1950*
 - 121 Dairy products.
 - See also SF 253, Dairying.
 - 129 Others.
 - 145 Pathogenic fungi.
 - Cf. RL 765, Skin diseases.
 - 151 Micro-organisms of Fermentation. Yeasts, etc.
 - Diseases of wine and beer.
 - See also TP 570-581, Brewing.
 - 155 Yeasts and yeastlike fungi in the body.
 - Cf. QR 47, Dental mycology.
 - 171 Bacteria in the animal body. *16 Microorganisms of carbohydrates. [from L.C. 1950]*
 - Pathogenic bacteria.
 - General works, see QR 41-46.
 - See also RC 111-206, Infectious diseases.
 - 175 Pathogenic action in general.
- IMMUNITY AND IMMUNIZATION.
- See also Serum therapy, RM 741-797.
 - 181 General.
 - 183 Laboratory methods.
 - 185 Special topics *(not A L) Micro-organisms*.
 - e. g., Agglutination, Allergia, Anaphylaxis, Antigens and antibodies, Danysz effect, Hemolysis, Hypersusceptibility.
 - ~~AS-Agglutination~~

Pathogenic bacteria—Continued.

- 201 Bacteria of special diseases (alphabetically).
e. g., .A2, Actinomycosis; .A6, Anthrax; .C5, Cholera; .D5, Diphtheria; .G5, Glanders; .G7, Gonorrhea; .H7, Hog cholera; .L5, Leprosy; .M2, Malaria; .M4, Mastitis; .P5, Plague; .P7, Pneumonia; .S6, Smallpox; .S9, Syphilis; .T3, Tetanus; T6, Tuberculosis; .T9, Typhoid; .T95, Typhus; .Y8, Yellow fever.
- 241 Miscellaneous.
- 251 Pathogenic protozoa.
- 301 Bacteria of diseases in different classes of animals.
- 303 Mammals other than man.
See also SF 600-995.
- 311 Birds.
- 315 Reptiles and batrachia.
- 321 Fishes.
See also SH 171.
- 325 Invertebrates.
- 351 Bacteria of plant diseases.
See also SB 601-761.

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