INDEX TO VOL. XI.

Acid, hydriodic, action of, upon man- nite, 447.
—, influence of an, in producing saccharine urine, 335.
—, laricin, 405.
—, perchloric, and its hydrates, 493.
—, terephthalic, 112.
Acids, reproduction of non-nitrogenous, from amide acids, 266.
—, succinic and pyrotartaric, on the synthesis of, 150.
Acoustics, papers on, 48.
Address of condolences to the Queen, 500.
Adriatic, physical, geological and botanical researches on the shores of the, 50.
Agassiz (L.), Copley Medal awarded to, 461.
Alloys, lead-zinc and bismuth-zinc, 430; gold-tin, 433.
Amide acids, reproduction of non-nitrogenous acids from, 266.
Analysis, liquid diffusion applied to, 243.
Anniversary Meeting, Nov. 30, 1860, 1; Nov. 30, 1861, 455.
Annual Meeting for election of Fellows, June 1861, 233.
Annulosa, notes on the generative organs of, 117; on the formation of the egg in, 118.
Aqueous vapour, distribution of, in upper parts of the atmosphere, 182.
Arbogast's method of derivations, on an extension of, 42.
Arctic winter, great fluctuations of temperature in, 309.
Aromatic diamines, 518.
Arsammonium series, 65.
Arsenic bases, researches on, 62.
Atmosphere, distribution of aqueous vapour in upper parts of the, 182.
Atmospheric pressure, influence of, on combustion, 366.
Bakerian Lecture,—On the absorption and radiation of heat by gases and vapours, and on the physical connexion of radiation, absorption, and conduction, 100.
Barometer, lunar semi-diurnal variation of, 297.
Barry (Sir C.), obituary notice of, i.
Birds, development of striped muscular fibre in, 513.
Bismuth-zinc alloys, 431.
Body, weight of, 573.
Bones, venous, ethmoid, and intermaxillary, on the relations of, 168.
Bovey Tracey, fossil flora of, 453.
—, lignites and clays of, 449.
Bowditch (W. R.), on coal-gas, 25.
Bowerbank (J. S.), on the anatomy and physiology of the Spongidae (Part II.), 372.
Boyd (R.), tables of the weights of the human body and the internal organs in the same and insane of both sexes at various ages, 124.
Brain, notes of researches on the intimate structure of, 359.
Brinton (W.), experiments and observations on the structure and function of the stomach in the vertebrate class, 357.
Brisbane (Sir T. M.), obituary notice of, iii.
Brodie (B. C.), note on the oxidation and dissociation effected by the peroxide of hydrogen, 442, 446.
Bromide of carbon, on, 257.
Broun (J. A.), on the lunar semi-diurnal variation of the barometer, 297.
—, on the law of disturbance and the range of the diurnal variation of magnetic declination near the magnetic equator, with reference to the moon's hour-angle, 298.
Brown-Séquard (C. E.), on the relations between muscular irritability, cadaveric rigidity, and putrefaction, 204.
Bunsen (R. W.), Copley Medal awarded to, 14.
Calculus of functions, on the, 447, 487.
Calculus of symbols, on, with applications to the theory of differential equations, 54; second memoir, 556.

VOL. XI.
Calculus of symbols, internal and external division in, 557.
Campbell, motions of, on the surface of water, 575.
Carbonic acid, liquid, on the properties of, 55.
Carpenter (W. B.), Royal Medal awarded to, 464.
Cayley (A.) on an extension of Ar-}
boi-
gast's method of derivations, 42.
— the equation for the product of the
differences of all but one of the roots of a given equation, 69.
— on the porism of the in-and-circum
cumscribed polygon, 151.
— on a new auxiliary equation in the
theory of equations of the fifth order, 134.
—, a seventh memoir on quantities, 142.
— on the double tangents of a curve of
the fourth order, 304.
— on Tschirnhausen's transformation, 487.
Cerebrum of the Quadrumanua, observations on, 376, 508.
Cervical sympathetic nerves, on the functions of, 302.
Chemical composition, liquid transpiration in relation to, 381.
Chloroacetie ether, action of, on triethyl-
amine and triethylphosphine, 525.
Chloride of iodine, action of, on iodide
of ethylene and propylene gas, 590.
Circle, ratio of circumference of, to its
diameter, a series for calculating the,
489.
Clarke (J. L.), notes of researches on the intimate structure of the brain (second series), 359.
— on the development of striated muscular fibre in man, mammalia, and birds, 513.
Clarkson (A.) on a series for calculating the ratio of the circumference of a circle to its diameter, 489.
Cleland (J.) on the relations of the vomer, ethmoid, and intermaxillary bones, 163.
Coal-gas, on, 25.
—, sulphur compounds in, purified, 31.
Colloids, substances of low diffusibility, 243.
Combustion, influence of atmospheric pressure on some phenomena of, 366.
Committee on Indian arc, report of, 595.
Compass, deviation of, by the length and arrangement of the needles, 179.
—, new mode of correcting, 181.
Copley Medal awarded to R. W. Bunsen, 14—to L. Agassiz, 461.
Copper and its alloys, electric conducting power of, 126.
Cotton, chemical and physical conditions of the culture of, 340.
—, soil, Alabama, general deductions from examination of, 346.
—, mechanical treatment of, as practised in Alabama, 350.
Coturnine, composition of, 57.
—, action of nitric acid on, 59.
Croonian Lecture.—On the relations between muscular irritability, cadaveric rigidity, and putrefaction, 204.
Crystallization and liquefaction, as influenced by stresses tending to change of form in the crystals, 473.
Crystallized substances, determination of the optical constants of, 235.
Crystalloids, a diffusive class of substances, 243.
Crystals, change of form in, as influenced by stresses, 473.
— of gold and tin, 435.
—, uniaxial, on internal radiation in, 193.
Curtis (A. H.) on the gyroscope, 40.
Curve of the fourth order, on the double
tangents of, 304.
Curves, contact of, 446.
Cutaneous sensibility of the hand and foot in different parts of the surface, as tested by the galvanic current, 356.
Cyanate of ethyl, action of, on urea, 273.
Darkness, influence of, on the tadpole and frog, 536.
Davidson (J.) on the action of dibrom-
ide of ethylene on pyridine, 261.
De la Rue (W.) and Müller (H.) on
terephthalic acid and its derivatives, 112.
Dialysis, action of, 245.
Diamines, ureas of, 268; diagnosis of,
278; aromatic, 518.
Diarsenious series, 64.
Diatomic compounds, isomerism of, 271.
Dibromide of ethylene, action of, on
pyridine, 261.
Dicyanodon reptilia, on, 583.
Dicythylamine, action of dibromide of ethylene on, 425.
Dogs, experiments on the irritability of,
209.
Earth-currents and magnetic calms, on, 578.
Echinus, on the structure and growth of the tooth of, 166.
Electric conducting power of metals, influence of temperature on, 516.
Electric resistance, on the measurement of, 313.
Electrical accumulation on coated glass, law of exploding distance of, 247.
Electro-dynamic balance, general remarks on testing by, 321.
Electrolysis, production of vibrations and sounds by, 491.
Electro-physiological researches (11th series), 384.
Ellis (A. J.) on an application of the theory of scalar and clinal radical loci, 141, 393.
Equation, on the, for the product of the differences of all but one of the roots of a given equation, 69.
Equations of the fifth order, on a new auxiliary equation in the theory of, 134.
Ethyl-bases, separation of, 66.
Ethylamine, action of dibromide of ethylene on, 427.
Ethylene, preparations of, 258, 259.
Ethylene-dichloride of platinum, note on, 509.
Ethylene-urea, 268.
Everest (Sir G.), letter to the Council on the expediency of re-examining the southern portion of the Great Indian are of the meridian, and report of a committee thereon, 591.
Fairbairn (W.), Royal Medal awarded to, 16.
Fiji Islands, magnetic declination, dip, and force at, in 1860 and 1861, 481.
Flower (W. H.), observations on the posterior lobes of the cerebrum of the Quadrumana, with a description of the brain of a Galago, 376.
Food, effect of, on the system, 574.
Fossil flora of Bovey Tracey, 453.
Fossil remains brought by H.R.H. Prince Alfred from South Africa, 583.
Foster (G. C.): see Matthiessen (A.), 55.
Frankland (E.) on combustion in rarefied air, 137.
—— on the influence of atmospheric pressure upon some of the phenomena of combustion, 366.
Fritsch (K.), meteorological investigations, 47.
Frog, influence of physical agents in the development of the, 532.
Galago, description of the brain of a, 376.
Gaseous matter, absorption and radiation of heat by, 100, 558.
Gassiot (J. P.) on the heat which is developed at the poles of a voltaic battery during the passage of luminous discharges in air and in vacuo, 329.
Glaciers, on the descent of, 168.
Gladstone (J. H.), notes on the atmospheric lines of the solar spectrum, and on certain spectra of gases, 305.
Gold-tin alloys, 483.
Gompertz (B.), supplement to two papers published in the Philosophical Transactions (1820 and 1825) on the science connected with human mortality, 390.
Gore (G.) on the properties of liquid carbonic acid, 85.
——, preliminary note on the production of vibrations and musical sounds by electrolysis, 177.
—— on the production of vibrations and sounds by electrolysis, 491.
Graham (T.) on liquid diffusion applied to analysis, 243.
—— on liquid transpiration in relation to chemical composition, 381.
Griess (P.) on a new class of organic bases, in which nitrogen is substituted for hydrogen, 263.
——, reproduction of non-nitrogenous acids from amide acids, 266.
Gyroscope, on the, 40.

Hand and foot, cutaneous sensibility of, as tested by the galvanic current, 356.
Harley (R.) on the method of symmetric products, and on certain circular functions connected with that method, 43.
Harris (Sir W. S.) on some new phenomena of residuary charge, and the law of exploding distance of electrical accumulation on coated glass, 247.
Heat developed at the poles of a voltaic battery during the passage of luminous discharges in air and in vacuo, on, 329.
——, radiation of, by gases and vapours, 100, 558.
Heer (O.) on the fossil flora of Bovey Tracey, 453.
Hicks (J. B.) on the homologies of the eye and of its parts in the Invertebrata, 81.
Higginbottom (J.), additional observations and experiments on the influence of physical agents in the development of the tadpole and the frog, 532.
Hofmann (A. W.), notes of researches on the poly-ammonias: No. XI. isomerism of diatomic compounds, 271; No. XII. action of cyanate of ethyl on urea, 273; No. XIII. derivatives of the...
phenyl series, 275; No. XIV. diagnosis of diamines, 275; No. XV. monatomic polyamines, 281; No. XVI. triatomic ammonias, 413, 446; No. XVII. mixed triammonias containing monatomic and diatomic radicals, 420, 446; No. XVIII. tetrammonium compounds, 425, 456; No. XIX. aromatic diamines, 518.

Hofmann (A. W.), researches on the phosphorus bases: No. XIII. sulphurized derivatives of triethyl phosphine, 286; No. XIV. action of triethylphosphine on the substitution-compounds of marsh-gas, 290.

———, researches on the arsenic bases, 62.

———, contributions towards the history of the monamines: No. IV. separation of the ethyl-bases, 66; No. V. action of chloroactic ether on triethylamine and triethylphosphine, 525.

Holyhead, experiments made at, on the transit-velocity of waves through rock formations, 352.

Human body and internal organs, tables of the weights of, in the same and insane of both sexes at various ages, 124.

Indian arch, on the expediency of re-examining the southern portion of, 591.

———, report of committee on, 595.

Invertebrata, homologies of the eye and of its parts in the, 51.

Iron and steel, on the magnetization of, 53.

Irritability, muscular, on the relations between, and cadaveric rigidity and putrefaction, 204.

Joule (J. P.) on the surface-condensation of steam, 44.

Kew declinometer, conclusions derived from the photographic records of, 1858-1861, 585.

Kew Observatory, magnetic disturbance recorded by photography at, 407.

Kirkman (T. P.) on the theory of the polyedra, 218.

Larixin acid, a crystallizable volatile principle found in the bark of the larch-tree, 405.

Lead-zinc alloys, 430.

Leake (Lieut.-Col. W. M.), obituary notice of, vii.

Lennox (C. W.) on the bromide of carbon, 257.

Light, influence of, on the ovum of the frog, 532; on the tadpole, 535.

———, intensity of, reflected from or transmitted through a pile of plates, 545.

Lignite and clays of Bovey Tracey, 449.

Linear indeterminate equations and congruences, on systems of, 87.

Liquid diffusion applied to analysis, 243.

Liver, contributions to the physiology of, the, 90, 395.

———, influence of alkalies on, 90.

Lobb (H.) on the cutaneous sensibility of the hand and foot in different parts of the surface, as tested by the continuous galvanic current, 356.

Locke (J.), obituary notice of, ix.

Lorenz (Prof.), physical, geological, and botanical researches on the shores of the Adriatic, 50.

Lubbock (J.), notes on the generative organs, and on the formation of the egg in the Anomala (Part I.), 117.

Macaulay (Lord), obituary notice of, xi. Magnetic calms and earth-currents, on, 578.

Magnetic declination, lunar-diurnal variation of, the obtained from the Kew photographs, 73.

———, law of disturbance and range of diurnal variation of, 298.

———, dip, and force, at the Fiji Islands, in 1860 and 1861, determination of, 481.

———, dip in London, on the secular change in, between the years 1821 and 1860, 144.

———, disturbance, great, of Aug. 28 to Sept. 7, 1869, as recorded by photography at Kew Observatory, 407.

———, storms and earth-currents, on, 105.

Mallet (J. W.) on the chemical and physical conditions of the culture of cotton, 340.

Mallet (R.), account of experiments made at Holyhead (North Wales) upon the transit-velocity of waves through the local rock formations, 352.

Mammalia, development of striped muscular fibre in, 513.

Man, development of striped muscular fibre in, 513.

Mannite, action of hydriodic acid on, 447.

Matteucci (C.), electro-physiological researches (11th series):—on the secondary electromotor power of nerves, and its application to the explanation of certain electro-physiological phenomena, 384.

Matthiessen (A.) on the electric conducting power of copper and its alloys, 126.

———, on the influence of temperature on the electric conducting power of the metals, 516.
Matthiessen (A.) and von Bose (M.) on some gold-tin alloys, 433, 446.
— on the lead-zinc and bismuth-zinc alloys, 430, 446.
Matthiessen (A.) and Foster (G. C.), preliminary notice of researches into the chemical constitution of narcotine and of its products of decomposition, 55.
Maxwell (J. C.), Rumford Medal awarded to, 19.
May (C.), obituary notice of, x.
Metal, motion of a plate of, on an inclined plane, on, 168.
Meteorological investigations in the Austrian empire, 47.
Methods of inquiry, remarks on the most correct, in reference to pulsation, respiration, urinary products, weight of the body, and food, 561.
Miller (W. H.), notice of recent scientific researches carried on abroad, 45, 53, 233.
Mollusks, lamellibranchiate, aquatic and oviducal system in, 411.
Monacid polyamines, 281.
Monamines, contribution towards the history of, 66, 525.
Monarsonium series, 62.
Mortality, human, on the science connected with, 390.
Moseley (H.) on the motion of a plate of metal on an inclined plane, when dilated and contracted, and on the descent of glaciers, 168.
Murphy (J. J.) on great fluctuations of temperature in the arctic winter, 509.
Narcotine, composition of, 55.
—, researches into the chemical constitution of, 55.
Nebulae, further observations on, 375.
Nerves, secondary electromotor power of, 384.
Nitrogen substituted for hydrogen in a new class of organic bases, 263.
Opiate acid, decompositions of, 57.
Organic bases, new class of, 263.
Owen (R) on the dicynodont reptilia, with a description of some fossil remains brought by H.R.H. Prince Alfred from South Africa in November 1860, 593.
Oxidation and disoxidation effected by peroxide of hydrogen, 442.
Pavy (F. W.), contributions to the physiology of the liver: influence of alkalies, 90.
Pavy (F. W.), contributions to the physiology of the liver: influence of an acid in producing saccharine urine, 335.
Pengelly (W.), the lignites and clays of Bovey Tracey, Devonshire, 449.
Perchloric acid and its hydrates, 493.
Peroxide of hydrogen, oxidation and disoxidation effected by, 442.
Phenyl-series, derivatives of, 275.
Phenylene-diamine, 522.
Phosphorus-bases, researches on: No. XIII., 286; No. XIV., 290.
Photographic records of Kew declinometer, 1858–61, 585.
Plane triangles, general forms of the symmetrical properties of, 509.
Poinsot (L.), obituary notice of, xxxvi.
Pollock (Sir F.) on Fermat’s theorem of the polygonal numbers, 197.
Polyamines, monacid, 28.
Poly-ammonias, notes of researches on: No. XI., 271; No. XII., 273; No. XIII., 275; No. XIV., 275; No. XV., 281; No. XVI., 413; No. XVII., 420; No. XVIII., 423; No. XIX., 518.
Polyhedra, on the theory of, 218, 556.
Polygon, in-and-circumscribed, on the perim of the, 131.
Polygonal numbers, on Fermat’s theorem of, 197.
Port Leopold, diurnal tides of, 507.
Powell (Rev. B.), obituary notice of, xxxvi.
Pyridine, action of dibromide of ethylene on, 261.
Pyrotartaric acid, formation of, 191.
Quadruped, observations on the posterior lobes of the cerebrum of, 376, 508.
Quantics, seventh memoir on, 142.
Queen, the, address of condolence to, 500.
Rabbits, experiments on the irritability of, 208.
Radiation, absorption, and conduction, on the physical connexion of, 100, 558.
Radiation, internal, note on, 597.
Radical leci, scalar and clinant, on an application of the theory of, 141, 393.
Rarified air, on combustion in, 137.
Rathke (H.), obituary notice of, xxxvi.
Refrigeration of ulnar nerve, sensory, motory, and vaso-motory symptoms resulting from, 436.
Regulation, note on Prof. Faraday’s recent experiments on, 198.
Respiration, charge on some new phenomena of, 247.
Respiration, quantity of air inspired, 565; of carbonic acid expired, 567.
Rolliston (G.) and Robertson (C.) on the aquiferous and ovidual system in the lamellibranchiate mollusks, 411, 446.
Roscoe (H. E.) on perchloric acid and its hydrates, 493.
Rosse (Earl of), further observations upon the nebulae, with practical details relating to the construction of large telescopes, 375.
Royal Medal awarded to W. Fairhaim, 16; Dr. A. Waller, 17; W. B. Carpenter, 464; J. J. Sylvester, 467.
Rumford Medal awarded to J. C. Maxwell, 19.
Russell (W. H. L.) on the calculus of symbols, with applications to the theory of differential equations, 84.
— on the calculus of functions, 487.
— on the calculus of symbols (second memoir), 556.
Sabine (E.) on the lunar-diurnal variation of the magnetic declination obtained from the Kew photographs in the years 1858, 1859, and 1860, 73.
— on the secular change in the magnetic dip in London, between the years 1821 and 1860, 144.
—, notices of some conclusions derived from the photographic records of the Kew declinometer in the years 1858, 1859, 1860, and 1861, 585.
Salter (S. J. A.) on the structure and growth of the tooth of Echinus, 166.
Schaub ( ), tide observations in the harbour of Trieste, 49.
Schauf (A.), determination of the optical constants of crystallized substances (first and second series), 235.
Scientific researches, notice of recent, carried on abroad, 45, 53, 233.
Shaw (W. T.), description of a new optical instrument called the stereotrope, 70.
Sievier (R. W.), readmission of, 489.
Simms (W.), obituary notice of, xxix.
Simpson (M.) on the synthesis of succinic and pyrotaartic acids, 190.
— on the action of chloride of iodine on iodide of ethylene and propylene gas, 590.
Smith (A.) and Evans (F. J.) on the effect produced on the deviation of the compass by the length and arrangement of the compass needles; and on a new mode of correcting the quadrantal deviation, 179.
Smith (E.) on the elimination of urca and urinary water, in their relation to the period of the day, season, exertion, food, and other influences acting on the cycle of the year, 192, 214.
Smith (E.), remarks on the most correct methods of inquiry in reference to pulsation, respiration, urinary products, weight of the body, and food, 561.
Smith (H. J. S.) on systems of linear indeterminate equations and congruences, 87.
Smythe (W. J.), determination of the magnetic declination, dip, and force, at the Fiji Islands, in 1860 and 1861, 481.
Sounds and vibrations, production of, by electrolysis, 491.
Spectra of gases, on certain, 305.
Spectrum, solar, atmospheric lines of 305.
Spence (W.), obituary notice of, xxx.
Spongiadæ, anatomy and physiology of (Part II.), 372.
Spottiswoode (W.) on the contact of curves, 446.
— on the calculus of functions, 447.
— on internal and external division in the calculus of symbols, 557.
Steam, on the surface-condensation of, 44.
Stenhouse (J.) on some varieties of tannin, 401, 445.
— on larinic acid, a crystallizable volatile principle found in the bark of the larch-tree (Pinus Larix, Linn.), 405, 445.
Stereotrope, a new optical instrument, description of, 70.
Stewart (B.) on internal radiation in uniaxial crystals, 193.
— on the great magnetic disturbance of August 28 to September 7, 1859, as recorded by photography at the Kew Observatory, 407, 446.
Stokes (G. G.), note on internal radiation, 537.
— on the intensity of the light reflected from or transmitted through a pile of plates, 545.
Stomach, structure and function of, in the vertebrate class, 357.
Strachey (R.) on the distribution of aqueous vapour in the upper parts of the atmosphere, 182.
Stripped muscular fibre, development of, in man, mammalia, and birds, 513.
Succinic acid, on the synthesis of, 190.
Sulphide of hydrogen, action of, upon clay and lime, 37.
Sylvester (J. J.), Royal Medal awarded to, 467.
Symmetric products, method of, on
INDEX.

Tadpole, influence of physical agents in the development of the, 532.
Tammin, on some varieties of, 401.
Telescopes, large, practical details relating to the construction of, 376.
Temperature, great fluctuations of, in arctic winter, 308.
Terephthalic acid and its derivatives, on, 112.
Tetrammonium compounds, 423.
Tides, diurnal, of Port Leopold, 507.
Toluylene-diamine, 523.
Tomlinson (C.) on the motions of camphor on the surface of water, 575.
Thompson (T.), obituary notice of, xxxi.
Thomson (J.), note on Prof. Faraday's recent experiments on regulation, 198.
—— on crystallization and liquefaction, as influenced by stresses tending to change of form in the crystals, 473.
Thomson (W.) on the measurement of electric resistance, 313.
Todd (R. B.), obituary notice of, xxxii.
Transpiration, liquid, relation to chemical composition, 381.
Triammonias, mixed, containing monatomic and diatomic radicals, 420.
Triatomic ammonias, 413.
Trieste, tide observations in the harbour of, 49.
Triethylamine, action of chloroacetic ether on, 526.
Triethylphosphine, sulphuretted derivatives of, 286.
——, action of, on the substitution-compounds of marsh-gas, 290.
——, action of chloroacetic ether on, 530.
Tschirnhausen's transformation, on, 487.
Tyndall (J.) on the absorption and radiation of heat by gases and vapours, and on the physical connexion of radiation, absorption, and conduction, 100; second memoir, 558.

Ulnar nerve, refrigeration of, sensory, motory, and vaso-motory symptoms resulting from, 436.

Uniaxal crystals, on internal radiation in, 193.
Urea, elimination of, in relation to period of the day, season, exertion, food, and other influences, 192, 214.
——, action of cyanate of ethyl on, 273.
—— and urinary water, on, 570.
Ureas of the diamines, on, 268.
Urinary water, elimination of, in relation to period of the day, season, exertion, food, and other influences, 192, 214.
Urine, saccharine, influence of an acid in producing, 335.

Vagus, experimental researches on the functions of the, 302.
Volhard (J.) on the urases of the diamines, 268.
Voltacic battery, heat developed at the poles of, during the passage of luminous discharges in air and in vacuo, 329.
—— currents, note on the nature and quantities of, 504.

Walker (C. V.) on magnetic storms and earth-currents, 105.
—— on magnetic calms and earth-currents, 578.
Wallor (A.), Royal Medal awarded to, 17.
——, experimental researches on the functions of the vagus and the cervical sympathetic nerves in man, 302.
—— on the sensory, motory, and vaso-motory symptoms resulting from the refrigeration of the ulnar nerve, 436, 446.
Wanklyn (J. A.) and Elenmeyer (Dr.) on the action of hydriodic acid upon mannite, 447.
Water, motions of camphor on the surface of, 575.
Waves, transit-velocity of, through rock-formations, 352.
Wiedemann (Prof.) on the magnetization of iron and steel, 53.
Wilson (H. H.), obituary notice of, xxxv.
Zantedeschi (Prof.), papers on acoustics, 48.

END OF THE ELEVENTH VOLUME.

Printed by Taylor and Francis, Red Lion Court, Fleet Street