

INDEX TO VOL. IX.

- ACTINIADÆ**, poison apparatus in 125.
- Actinæ*, electrical nature of the power of, 103, 478.
- , power exercised by, in killing their prey, 478.
- , means by which they kill their prey, 722.
- Alison (S. S.) on the differential stethophone, and some new phenomena observed by it, 196.
- on the intensification of sound through solid bodies by the interposition of water between them and the distal extremities of hearing tubes, 649.
- Amphistegina*, 334.
- Amylamine, action of bisulphide of carbon on, 591.
- Amylaniline, action of nitrous and nitric acid on, 635.
- Andrews (T.), second note on ozone, 606.
- Aneroid barometer, use of, as orometer, 143.
- Aniline, action of nitrous acid on, 118.
- , action of chloroform on, 229.
- , action of binoxide of manganese and sulphuric acid on, 637.
- Animals, experimental inquiry into the composition of, 348.
- Annelids, on the structure and homology of the reproductive organs of, 72.
- Anniversary Meeting, Nov. 30, 1857, 23; Nov. 30, 1858, 497.
- Annual Meeting for election of Fellows, 247.
- Antimony, on the molecular properties of, 70.
- , electro-deposited, 304.
- Arc, English, effect of local attraction on, 496.
- Archer (C.) on the adaptation of the human eye to varying distances, 331.
- Atmosphere, disturbance of, by heated terrestrial surfaces, 227.
- Auscultation, on the theories of, 223.
- Bakerian Lecture.—On the stratifications and dark bands in electrical discharges as observed in Torricellian vacuums, 146.
- Beaufort (Sir F.), obituary notice of, 524.
- Bennett (J. J.), letter containing a statement of facts relative to the discovery of the composition of water by the Hon. H. Cavendish, 642.
- Blakiston (Lieut.), magnetic observations made at York Fort, 81.
- Boghead coal, products of, 102.
- Booth (Rev. J.) on tangential co-ordinates, 175.
- on the logocyclic curve, and the geometrical origin of logarithms, 256.
- Brodie (B. C.) on the formation of the peroxides of the radicals of the organic acids, 361.
- (Sir B.), inaugural address, 564.
- Brooke (H. J.), obituary notice of, 41.
- Brown (R.), obituary notice of, 527.
- Brown-Séguard (E.), summary of a paper on the spinal cord as a leader for sensibility and voluntary movements, 1.
- on the resemblance between the effects of the section of the sympathetic nerve, &c., 1.
- , experimental researches on the influence of efforts of inspiration on the movements of the heart, 1.
- on the influence of oxygen on the vital properties of the spinal cord, &c., 2.
- on the power possessed by motor and sensitive nerves of retaining their vital properties, &c., 2.
- Buckton (G. B.) on the isolation of the radical mercuric methyl, 91.
- , further remarks on the organo-metallic radicals, &c., 309.
- , further remarks on the organo-metallic radicals mercuric, stannic, and plumbic ethyl, No. III., 685.
- Bunsen (R. W.) elected foreign member, 487.

- Calvert (F. C.) on the relative power of metals and their alloys to conduct heat, 169.
- Carbon, action of bisulphide of, on triethylphosphine, 290.
- Carpenter (W. B.), researches on the Foraminifera, Part III.—on the genera *Peneroplis*, *Operculina*, and *Amphistegina*, 334.
- Cauchy (A.), obituary notice of, 44.
- Cayley (A.) on certain formulæ for differentiation, 93.
- on the theory of matrices, 100.
- on the automorphic linear transformation of a bipartite quadric function, 101.
- , a fourth memoir on quantics, 165.
- , a fifth memoir on quantics, 166.
- , a sixth memoir on quantics, 589.
- on the surface which is the envelope of planes through the points of an ellipsoid at right angles to the radius vectors from the centre, 171.
- on the tangential of a cubic, 167.
- on the conic of five-pointic contact at any point of a plane curve, 702.
- on the double tangent of a plane curve, 724.
- Chevreul (M. E.), Copley Medal awarded to, 35.
- Chloroform, action of, upon aniline, 229.
- Chondrosteus*, an extinct genus of fish, 233.
- Cinchona alkaloids, researches on, 5.
- —, on the optical and chemical characters of the iodo-sulphates of, 10.
- —, additional researches on, 316.
- Cinchonine, cinchonidin, and cinchonine, 5.
- Clarke (Capt.), note on Archdeacon Pratt's paper on the effect of local attraction on the English Arc, 496.
- (J. L.), further researches on the grey substance of the spinal cord, 337.
- Claudet (A.) on the stereomonoscope, a new instrument by which an apparently single picture produces the stereoscopic illusion, 194.
- Cleavage, &c. of old red sandstone of Waterford, 108.
- Coccus hesperidum*, on the digestive and nervous systems of, 480.
- Cod-liver oil, effects of, on the red corpuscles of the blood, 474.
- Colour-blindness, 716.
- Comatula rosacea*, on the embryogeny of, 600.
- Conybeare (Rev. W. D.), obituary notice of, 50.
- Copley Medal awarded to M. E. Chevreul, 35; Sir C. Lyell, 511.
- Corps innominé, un organe placé dans le cordon spermatique, 231.
- Courants induits, les, et le pouvoir moteur de l'électricité, 321.
- Croonian Lecture.—On the theory of the vertebrate skull, 381.
- Crustacea, structure and functions of the hairs of, 215.
- Cubic, on the tangential of a, 167.
- Currey (F.) on the existence of amorphous starch in a new tuberaceous fungus, 119.
- Curves of the third order, on, 333.
- Darkness, influence of on nutrition, 644.
- Debus (H.), researches on the action of ammonia on glyoxal, 297.
- on the oxidation of glycol, and on some salts of glyoxylic acid, 711.
- Deep-sea soundings, on, 189.
- De Morgan (C.) on the structure and functions of the hairs of the Crustacea, 215.
- Diamides, history of, 274.
- Diazodinitrophenol, &c., 595.
- Diethylaniline, action of nitric acid, manganese, and sulphuric acid on, 636, 637.
- Differentiation, on certain formulæ for, 93.
- Dimorphodon*, 703.
- Diposponium compounds, 651.
- Dobell (H.) on the influence of white light, of the different coloured rays, and of darkness, on the development, growth, and nutrition of animals, 644.
- Earnshaw (S.) on the mathematical theory of sound, 590.
- Eclipse, effects of, on animal and vegetable kingdom, 215.
- Egerton (Sir P.) on *Chondrosteus*, an extinct genus of fish allied to the Sturionidæ, 233.
- Egypt, geological history of alluvial land of, 128.
- Electric conductivity in metallic wires, effect of pressure on, 615.
- Elliptic integrals, higher theory of, 704.
- Ellis (G. V.), researches into the nature of the involuntary muscular tissue of the urinary bladder, 573.
- Ethyl compounds, new, containing the alkali metals, 341.
- Ethylaniline, action of nitric acid on, 637.
- Ethylene, action of bibromide of, upon triethylphosphine, 287; on trimethylamine, 293.

- Everest (G.), rectification of logarithmic errors in the measurements of two sections of the meridional arc of India, 620.
- Excretine, additional observations on, 306.
- Eye, adaptation of, to varying distances, 331.
- Fairbairn (W.) on the resistance of tubes to collapse, 234.
- Farr (W.) on the construction of life-tables, illustrated by a new life-table of the healthy districts of England, 717.
- Fats, action of bile on, 306.
- Film of liquid, on the thermal effect of, 255.
- Fishes, osseous, different types in the microscopic structure of, 656; classification of, with and without bone-corpuscles, 662.
- Five-point contact, conic of, 702.
- Fluids, thermal effects of compressing, 496.
- Foraminifera, researches on, Part III., 334.
- Frankland (E.), Royal Medal awarded to, 37.
- , note on sodium ethyl and potassium ethyl, 345.
- , remarks on organo-metallic bodies, 4th memoir, 672.
- Friction in fluids, theory of, 223.
- Gases, on the measurement of, in analysis, 218.
- Gassiot (J. P.) on the stratifications and dark bands in electrical discharges as observed in Torricellian vacuums, 146.
- on the stratifications in electrical discharges, as observed in Torricellian and other vacua, second communication, 601.
- on an experiment in which the stratifications in electrical discharges are destroyed by an interruption of the secondary circuit, 671.
- Gilbert (J. H.), experimental inquiry into the composition of some of the animals fed and slaughtered as human food, 348.
- J Giralès (F.), note sur un organe, placé dans le cordon spermatique, &c., 231.
- Glacier, comparative velocities of, 246.
- Glaciers, physical phenomena of, 668.
- Gladstone (J. H.) on the chemical action of water on soluble salts, 66.
- on the influence of temperature on the refraction of light, 328.
- Glycol, oxidation of, 711.
- , action of acids on, 725.
- Glyoxal, action of ammonia on, 297.
- Glyoxylic acid, on some salts of, 711.
- Gore (G.) on the molecular properties of antimony, 70.
- on the properties of electro-deposited antimony, 304.
- Gosse (P. H.), researches on the poison-apparatus in the *Actiniadae*, 125.
- Griess (P.) on new nitrogenous derivatives of the phenyl and benzoyl series, 594.
- Gulf-stream, influence of, 324.
- Gunpowder, fired, nature of the action of, 586.
- Hall (Dr. Marshall), obituary notice of, 52.
- Hall (V.), notice of researches on the sulphocyanide and cyanate of naphthyl, 365.
- Hancock (A.), Royal Medal awarded to, 518.
- Hargrave (C. J.) on the problem of three bodies, 265.
- Houghton (Rev. S.) on the physical structure of the old red sandstone of the county of Waterford, &c., 108.
- Heart, influence of efforts of inspiration on the, 1.
- Heat, power of metals and alloys to conduct, 169.
- Hennessy (H.) on the influence of the Gulf-stream on the winters of the British Islands, 324.
- Heptylene, 103.
- Herapath (W. B.), researches on the cinchona alkaloids, 5.
- , preliminary notice of additional researches on the cinchona alkaloids, 316.
- Hexylene, 103.
- Himalayas, attraction of, 701.
- Hofmann (A. W.), notes of researches on the poly-ammonias, No. I., 150; No. II., 229; No. III., 274. *v.* 254
- , researches on the phosphorus bases, 287; No. II., 290; No. III. phosphoretted ureas, 487; No. IV. diphosphonium compounds, 651.
- , contributions towards the history of the monamines, 293, 591.
- , notice of researches on the sulphocyanide and cyanate of naphthyl, 365.
- , notice of researches on a new class of organic bases, 616.
- , new volatile organic acids from the berry of the mountain ash, 681.

Hopkins (T.) on the daily fall of the barometer at Toronto, 124.

— on the influence of heated terrestrial surfaces in disturbing the atmosphere, 227.

Horner (L.), researches near Cairo, upon the geological history of the alluvial land of Egypt (Part II.), 128.

Hunt (T. S.) on the probable origin of some magnesian rocks, 159.

Huxley (T. H.) on the theory of the vertebrate skull, 181.

Hyperbolic arcs, comparison of, 708.

Ice, on some physical properties of, 76; influence of pressure on, 79.

—, on the interior melting of, 141.

—, stratification of, by pressure, 209.

— observations, 609.

—, veined structure of, 669.

Insects, ova and pseudova of, 574.

Jamin (J. C.), Rumford Medal awarded to, 514.

Jago (J.), ocular spectres, structures, and functions, mutual exponents, 2.

— on the functions of the tympanum, 134.

Joule (J. P.) on the expansion of wood by heat, 3.

— on some thermodynamic properties of solids, 254.

— on the thermal effects of compressing fluids, 496.

Kirkman (Rev. T. P.) on the partitions of the *r*-pyramid, being the first class of *r*-gonous *x*-edra, 4.

Kölliker (A.), observations on the poison of the *Upas Antiar*, 72.

—, some remarks on the physiological action of the *Tanghinia venenifera*, 173.

— on the different types in the microscopic structure of the skeleton of osseous fishes, 656.

Kreil (K.) on his magnetic observations, 585.

Lamont (J.) on his magnetic observations, 584.

Lassell (W.), Royal Medal awarded to, 519.

Lava, formation of continuous tabular masses of, 248.

Lawes (J. B.), experimental inquiry into the composition of some of the animals fed and slaughtered as human food, 348.

Life-table, new, 717.

Life-tables, on the construction of, 717.
Light, effects of diminution of, during eclipse, 213.

Light, influence of, on the nutrition of animals, 644.

Lindley (J.), Royal Medal awarded to, 39.

Lister (J.), preliminary account of an inquiry into the functions of the visceral nerves, &c., 367.

Liver, alleged sugar-forming function of, 300.

Lizard, gigantic, 273.

Logarithms, geometrical origin of, 256.

Logocyclic curve, on the, 256.

Lowe (E. J.), an account of the weather in various localities during the 15th of March 1858, &c., 213.

Lubbock (J.) on the digestive and nervous systems of *Coccus hesperidum*, 480.

— on the ova and pseudova of insects, 574.

Lyell (Sir C.), on the formation of continuous tabular masses of stony lava on steep slopes, &c., 248.

—, Copley Medal awarded to, 511.

Macdonald (J. D.) on the anatomy of *Tridacna*, 1.

M'Donnell (R.) on the electrical nature of the power possessed by the *Actinia* of our shores, 103.

—, further observations on the power exercised by the *Actinia* of our shores in killing their prey, 478.

MacGrigor (Sir J.), obituary notice of, 532.

Magnesian rocks, probable origin of, 159.

Magnetic phenomena, 30.

Magnetic observations made at York Fort, 81.

Magnetic and meteorological observations, report on, 457.

Mahistre (M.) sur les limites de la pression dans les machines travaillant à la détente du maximum d'effet, &c., 110.

Marcet (W.) on the action of bile upon fats, with additional observations on excretine, 306.

Matrices, on the theory of, 100.

Matthiessen (A.) on the electric-conducting power of the metals, 95.

— on the thermo-electric series, 97.

— on the action of nitrous acid on aniline, 118.

— on the action of nitric acid and of binoxide of manganese and sulphuric acid on the organic bases, 635.

- Matteucci (C.) sur la relation entre les courants induits et le pouvoir moteur de l'électricité, 321.
- Meat, non-flesh-forming material stored in, 357.
- Megalania prisca*, description of some remains of, 273.
- Mercuric ethyl, 685; isolation of, 309.
- Mer de Glace, observations on the, 245.
- Meridional arc of India, rectification of errors in, 620.
- Merrifield (C. W.) on the comparison of hyperbolic arcs, 708.
- Metals, electric-conducting power of, 95.
- Methyl, mercuric, isolation of, 91.
- Mollusks, aquiferous and oviductal systems in, 633.
- Monamines, contributions towards the history of, 293, 591.
- Moon (R.) on the theory of internal resistance and internal friction in fluids, and on the theories of sound and of auscultation, 223.
- Moorsom (W. S.) on the practical use of the aneroid barometer as an orometer, 143.
- Mount Etna, mode of origin of, 248.
- Muirhead (J. P.), letter relating to the discovery of the composition of water, 679.
- Müller (J.), obituary notice of, 556.
- Muscular action from an electrical point of view, 690.
- Muscular tissue of the urinary bladder, nature of, 573.
- Naphthyl, sulphocyanide and cyanate of, 365.
- Nerves, motor and sensitive, their power of retaining vital properties, 2.
- Nerves, inhibitory system of, 367.
- Newman (F. W.), the higher theory of elliptic integrals treated from Jacobi's functions as its basis, 704.
- Nile, annual alluvial deposit of, 133.
- Ninaphthylamine, 617.
- Operculina*, 334.
- Organic acids, peroxides of the radicals of, 361; new, from the berry of the mountain ash, 681.
- Organic bases, new class of, 616; action of nitric acid, binoxide of manganese, and sulphuric acid on, 635.
- Organo-metallic bodies, remarks on, 672.
- Organo-metallic radicals, further remarks on, 685.
- Orometer, aneroid barometer as an, 143.
- Owen (R.), description of the skull and teeth of the *Placodus laticeps*, 157.
- Owen (R.), description of some remains of a gigantic Land-lizard, *Megalania prisca*, 273.
- , fossil mammals of Australia, I. description of a mutilated skull of a large marsupial Carnivore, *Thylacoleo carnifer*, &c., 585.
- on the vertebral character of the order Pterosauria, as exemplified in the genera *Pterodactylus* and *Dimorphodon*, 703.
- Ozone, second note on, 606.
- Paris (J. A.), obituary notice of, 56.
- Partitions of the *r*-pyramid, 4.
- Pattinson (H. L.), obituary notice of, 534.
- Pavy (F. W.), an experimental inquiry into the alleged sugar-forming function of the liver, 300.
- Peacock (Very Rev. G.), obituary notice of, 536.
- Pelikan (E.), some remarks on the physiological action of the *Tanghinia venifera*, 173.
- Peneroplis*, 334.
- Phenyl, cyanate and sulphocyanide of, 274.
- Phenyl and benzoyl series, new derivatives of, 594.
- Phenylamine and nitrophenylamine, action of nitrous acid on, 597.
- Phosphoretted ureas, 487.
- Phosphorus bases, researches on, 287, 290, 487, 651.
- Pieramic acid, action of nitrous acid on, 594.
- Placodus laticeps*, description of skull and teeth of, 157; evidence of the Saurian nature of, 158.
- Plane-curve, double tangent of, 724.
- Platinized graphite batteries, 628.
- Plumbic diethyl, 689.
- Plumbic ethyl, isolation of, 309.
- Plumb-line, on the deflection of, in India, 493, 701; influence of the ocean on, 597.
- Poinsot (L.) elected foreign member, 487.
- Pole (W.) on colour-blindness, 716.
- Pollock (Sir F.) on some remarkable relations which obtain among the roots of the four squares into which a number may be divided, &c., 238.
- Poly-ammonias, notes of researches on, (No. I.) 150, (No. II.) 229, (No. III.) 274.
- Potassium-ethyl, 344, 345.
- Pratt (J. H.) on the deflection of the plumb-line in India, caused by the

- attraction of the Himalaya mountains, &c., 493.
- Pratt, (J. H.) on the influence of the ocean on the plumb-line in India, 597.
- , postscript to a paper on the deflection of the plumb-line in India, &c., 701.
- Pression, limites de la, dans les machines travaillant à la détente, &c., 110.
- Pterodactylus*, 703.
- Pterosauria*, vertebral character of, 703.
- Pullen (Capt.), letter on deep-sea soundings, 189.
- Quadric function, automorphic linear transformation of a bipartite, 101.
- Quantics, fourth memoir on, 165; fifth memoir, 166; sixth memoir, 589.
- Quinidin and quinicine, 5.
- Radcliffe (C. B.) on muscular action from an electrical point of view, 690.
- Rankine (W. J. M.) on the thermodynamic theory of steam-engines with dry saturated steam, and its application to practice, 626.
- Rays, influence of coloured, on the nutrition of animals, 644.
- Refraction of light, influence of temperature on, 328.
- Reid (Sir W.), obituary notice of, 543.
- Report of the Joint Committee of the Royal Society and the British Association, for procuring a continuance of the magnetic and meteorological observatories, 457.
- Respiration, inquiries into the phenomena of, 611; action of food on, 638.
- Rolleston (G.) on the aquiferous and oviductal systems in the Lamelli-branchiate Mollusks, 633.
- Roots of the four squares, remarkable relations among, 238.
- Royal Medal awarded to E. Frankland, 37; J. Lindley, 39; A. Hancock, 518; W. Lassell, 519.
- Royle (J. F.), obituary notice of, 547.
- Rue, constitution of the essential oil of, 167.
- Rumford Medal awarded to J. C. Jamin, 514.
- Russell (W. J.) on the measurement of gases in analysis, 218.
- Sabine (Major-Gen. E.) on hourly observations of the magnetic declination made by Capt. Maguire, R.N., and the officers of H.M.S. 'Plover,' in 1852-54 at Point Barrow, 2.
- remarks on the magnetic observations transmitted from York Fort, &c., 81.
- Sabine (Major-Gen. E.), letter on magnetic observatories, 470.
- Salmon (G.) on curves of the third order, 333.
- Scoresby (Rev. W.) obituary notice of, 57.
- Siebold (C. T. von) elected foreign member, 487.
- Simpson (M.) on the action of acids on glycol, 725.
- Smith (E.), inquiries into the phenomena of respiration, 611.
- , experiments on the action of food upon the respiration, 638.
- Sodium-alcohol, action of carbonic oxide on, 697.
- Sodium-ethyl, 341, 345.
- Solids, some thermodynamic properties of, 254.
- Solly (R. H.), obituary notice of, 549.
- Soluble salts, chemical action of water on, 66.
- Sorbamide, 684.
- Sorbic acid, 682.
- Sound, on the theories of, 223.
- Sound, mathematical theory of, 590; intensification of, by interposition of water, 649.
- Sounds, stethoscopic analysis of, 205.
- Spinal cord, the, a leader for sensibility and voluntary movements, 1; influence of oxygen on vital properties of, 2; further researches on the grey substance of, 337.
- Stanethyl, iodide of, action of zincethyl on, 673; of zincmethyl, 673.
- Stannic diethyl, 686.
- Stannic ethyl, isolation of, 309.
- Starch, amorphous, in a new tuberaceous fungus, 119.
- Steam-engines with dry saturated steam, thermo-dynamic theory of, 626.
- Stereomonoscope, a new instrument, 194.
- Stethophone, on the differential, 196.
- Stratifications in electrical discharges, destruction of, 671.
- Surface envelope of planes, &c., 171.
- Sympathetic nerve, effects of section of, 1.
- Tait (P. G.), second note on ozone, 606.
- Tangential coordinates, on, 175.
- Tanghinia venenifera*, physiological action of, 173.
- Thénard (M.), obituary notice of, 60.
- Thermo-electric series, 97.
- Thomas (L.) on the nature of the action of fired gunpowder, 586.

- Thomson (W.), remarks on the interior melting of ice, 141.
 — on the stratification of vesicular ice by pressure, 209.
 — on the thermal effect of drawing out a film of liquid, 255.
 — on the embryogeny of *Comatula rosacea*, 600.
- Thompson (T.) on the changes produced in the proportion of the red corpuscles of the blood by the administration of cod-liver oil, 474.
- Three bodies, on the problem of, 265.
- Thylacoleo carnifex*, a large marsupial Carnivore, description of a mutilated skull of, 585.
- Tooke (T.), obituary notice of, 550.
- Toronto, daily fall of barometer at, 124.
- Toricellian vacuums, stratifications and dark bands in, 146.
- Travers (B.), obituary notice of, 551.
- Tridacna*, anatomy of, 1.
- Tubes, resistance of, to collapse, 234.
- Tympanum, functions of, 134.
- Tyndall (J.) on some physical properties of ice, 76.
 —, observations on the Mer de Glace (Part I.), 245.
 — on the physical phenomena of glaciers, 668.
- Upas Antiar*, on the poison of, 72; paralysis of the heart produced by, 74; effects of, on frogs, 76.
- Vagus, effects of division of the, 374.
- Vertebrate skull, on the theory of, 381.
- Visceral nerves, inquiry into the functions of, 367.
- Walker (C. V.) on platinized graphite batteries, 628.
- Walker (D.), ice observations, 609.
- Waller (A.) on the means by which the *Actinæ* kill their prey, 722.
- Wanklyn (J. A.) on some new ethyl compounds containing the alkali metals, 341.
 — on the action of carbonic oxide on sodium-alcohol, 697.
- Warburton, H., obituary notice of, 555.
- Wartmann (E.) on the effect of pressure on electric conductivity in metallic wires, 615.
- Water, discovery of the composition of, 642, 679.
- Weather during eclipse, account of, 213.
- Williams (C. G.) on some of the products of the destructive distillation of boghead coal (Part II.), 102.
 — on the constitution of the essential oil of rue, 167.
- Williams (T.), researches on the structure and homology of the reproductive organs of the Annelids, 72.
 —, explanation with respect to a statement made in his paper in the Phil. Trans., 589.
- Williamson (A. W.), note on the measurement of gases in analysis 218.
- Winters of British Islands, influence of Gulf-stream on, 324.
- Wood, expansion of, by heat, 3.
- Wood (C. S.), notice of researches on a new class of organic bases, 616.
- Zinc-ethyl, action of, on mercuric chloride, 309; on chloride of lead, 312; on iodide of mercurous ethyl, 312; on chloride of silver, 314; on iodide of stanethyl, 315.
- Zincmethyl, preparation of, 768.

END OF THE NINTH VOLUME.