

the philosophical phenomenology of Husserl and the psychiatric phenomenology of Minkowski. *Ibid.* 101 Phenomenology can also use a 'categorical' frame of reference... The two basic categories of inner experiences are considered to be time ('temporality') and space ('spatiality'). 1959 A. W. LEVI *Philos. & Mod. World* II. x. 405 The phenomenology of the human condition... in which inescapable situations constitute the historical determination in its four forms of death, suffering, conflict, and guilt. 1969 C. O. SCHRAG *Experience & Being* I. ii. 65 Psychiatric phenomenology has contributed interesting and revealing studies on the nature of psychological space and... time in their pathological expressions.

phenomenon (f'nɒmɪnən). Pl -a. Forms: *Sing.* 7 phain-, 7-9 phæn-, 7- phenomenon; (β. *erron.* 8-9 -omena). Pl. a. 7- -omena; β. 7-9 -omenons; γ. *erron.* 7-8 -omenas (-a's). [A. L. (post-cl.) *phenomenon*, pl. -a, a. Gr. φαινόμενον, pl. -μενα (absol. use of pr. pple. passive of φαίνω to show, pass. to be seen, to appear) appearing, apparent (to the senses or mind), hence τὰ φαινόμενα things that appear, appearances, phenomena. Cf. F. *phénomène* (1570 in Hatz.-Darm.), It., Sp. *fenomeno*, Pg. *fenomeno*; Ger. *phänomen*.]

1. a. In scientific and general use: A thing that appears, or is perceived or observed; an individual fact, occurrence, or change as perceived by any of the senses, or by the mind: applied chiefly to a fact or occurrence, the cause or explanation of which is in question.

1639 WOTTON *Life Dk. Buckhm. in Reliq.* (1651) 102 Somewhat I must note in this strange Phenomenon. 1692 BENTLEY *Boyle Lect.* 203 The most considerable phenomenon belonging to terrestrial bodies is the general action of gravitation. 1727 DE FOE *Syst. Magic* I. ii. (1840) 45 Observing an unusual and surprising phenomenon, viz. a star at Noonday, moving in a particular orbit. 1785 REID *Intell. Powers* 618 That every phenomenon must have a cause, was always taken for granted. 1816 PLAYFAIR *Nat. Phil.* II. 63 Any phenomenon, the beginning or end of which is seen at the same instant by observers under different meridians, affords the means of determining the difference of longitude. 1878 HUXLEY *Physiogr.* 75 Every one is familiar with the common phenomenon of a piece of metal being eaten away by rust.

β. (*erron.*) 1576 TOLDEYRY *Hist. 2 Orphans* IV. 79 The landlady being so strange a phenomena as to be Conscientious. 1783 J. WOODFORD *Diary* 8 Jan. (1926) II. 54. I went... to see a wonderful Phenomena in Nature a Heifer 3 years old with two distinct Heads. 1856 OLMSTED *Slave States* 285 A phenomena of pregnant importance. 1947 GERTH & MILLS *Fram M. Weber. Ess. in Sociol.* iii. 73 In this conception of freedom as a historically developed phenomena... Weber represents humanist and cultural liberalism rather than economic liberalism. 1969 *Daily Progress* (Charlottesville, Va.) 5 Feb. 1/7 'They have an image now,' said Dr. Granville C. Fisher, University of Miami psychologist, 'and many others will follow the same route. It is a phenomena that will keep spreading.' 1970 *Nature* 31 Oct. 405/2 His work is fundamental to the concept of 'frozen' lines of magnetic force being held inside a plasma, a phenomena of great importance to any understanding of the processes occurring in the magnetosphere. 1972 *Real Estate Rev.* Winter 6/1 In some of our major cities, the abandonment phenomena to be witnessed is unlike anything that can be found in the United States outside the ghost towns of the old West.

b. Plural. 1605 BACON *Adv. Learn.* II. ix. §1 It is not repugnant to any of the phenomena. 1653 H. MORE *Anti-d. Ath.* II. v. Those more large Phenomena of Day and Night, Winter and Summer. 1877 E. R. CONDER *Bas. Faith* III. 104 The shifting phenomena of sensation.

γ. 1707 *Curios. in Husb. & Gard.* 55 The efficient Cause of the several Phenomenons. 1708 *Brit. Apollo* No. 102. 2/1 The two Phenomenons, which you question. 1735 JOHNSON *Tr. Lobo's Voy. Abyssinia* x. 105 How many empty Hypotheses and idle Reasonings, the Phenomenons of this River [Nile] have put Mankind to the expense of. 1865 [see 3].

γ. (*erron.*) 1635 (*title*) *Atlas Cælestis*, Containing the Systems and Theories of the Planets... and other Phenomenas of that kind. 1751 *Guide to Stage 29* Phenomena's which have appear'd nowhere but upon our theatres. 1767 Mrs S. PENNINGTON *Lett.* III. 13 All the phenomena of Nature.

† c. Phr. to save (or solve) the phenomena (tr. Gr. σώζειν τὰ φαινόμενα): to reconcile the observed and admitted facts with some theory or doctrine with which they appear to disagree. to solve a phenomenon: to explain or account for an observed fact (so *solution of a phenomenon*). *Obs.*

1625 BACON *Ess., Superstition* (Arb.) 345 Like Astronomers, which did faine Eccentricities and Epicycles, and such Engines of Orbs, to save the Phenomena; though they knew, there were no such Things. 1643 MILTON *Divorce* I. i. To save the phenomenon of our Saviours answer to the Pharisees. 1646 SIR T. BROWNE *Pseud. Ep.* II. ii. Conceits of eminent use to save magnetical Phenomena's. 1662 STILLINGFL. *Orig. Sacr.* III. i. §9 To solve the Phenomena of nature. 1681 NEVILLE *Plato Rediv.* 214 The Phenomena of Government cannot be saved. 1704 SWIFT *T. Tub* ix. (1709) 105 An original solution of this phenomenon. 1748 HUME *Ess. & Treat.* (1777) II. 134 The solution of their phenomenon is obvious.

2. In philosophical use: That of which the senses or the mind directly takes note; an immediate object of perception (as distinguished from substance, or a thing in itself). (Opposed to NOUMENON.)

1788 REID *Active Powers* I. vi. 43-7. 1836 EMERSON *Nature, Idealism Wks.* (Bohn) II. 160 It is the uniform effect of culture in the human mind... to lead us to regard nature as phenomenon, not as substance. 1877 E. R. CONDER *Bas. Faith* iv. 184 Self, therefore, is not a phenomenon, nor yet a bundle of phenomena. 1895 HUXLEY in *19th Cent.* Mar. 536 The doctrine that the subject-matter of knowledge is limited to phenomena... is common to all I have mentioned [Hume, Berkeley, Locke]. 1895 A. J. BALFOUR *Found. Belief* (ed. 2) 7 Its leading doctrines are that we may know 'phenomena' and the laws by which they are connected, but nothing more [etc.].

3. Something very notable or extraordinary; a highly exceptional or unaccountable fact or occurrence; *colloq.* a thing, person, or animal remarkable for some unusual quality; a prodigy.

1771 Junius *Lett.* lvii. (1772) II. 257 From whatever origin your influence in this country arises, it is a phenomenon in the history of human virtue. 1796 MORSE *Amer. Geog.* I. 605 Here, such occurrences are considered as phenomena. 1803 WELLINGTON in *Gurw. Desp.* (1837) II. 411 In short, the only conclusion to be drawn... is, that the British Government in India is a phenomenon. 1838 DICKENS *Nich. Nick.* xxiii. 'This, Sir,' said Mr. Vincent Crummles, bringing the maiden forward, 'this is the infant phenomenon—Miss Ninetta Crummles.' 1865 *Cornh. Mag.* May 631 People do not usually feel the same affection for phenomena, however curious, that they do for perfectly commonplace human creatures. 1877 E. R. CONDER *Bas. Faith* (1884) App. I. iii. §8 note, The perversion of this word 'phenomenon' into the sense of 'prodigy'. Even educated people may be found speaking of a remarkable occurrence as 'Quite a phenomenon'.

† 4. That which appears or seems to a person to be the correct view; one's (own) notion, opinion, or theory. *Obs. rare.*

1677 Gale *Cre. Gentiles* II. III. 21 Self love produceth in us all a fond conceit of and regard unto our own phenomena and principles. *Ibid.* 22 Dogmatising opiatretic, which makes men to abandon Truth for the preservation of their own Phenomena.

† phe'noménous, a. *Obs. rare* -1. [f. prec. + -OUS.] = PHENOMENAL 2.

1754 FIELDING *J. Wild* II. xii. To account for many occurrences of the phenomenon kind.

† pheno'methol. *Chem.* [f. PHENO- + METH(YL) + -OL I.] An obs. name of ANISOL.

1857 MILLER *Elem. Chem.* III. 492 If anisic acid be distilled with an excess of caustic baryta, it yields a compound termed anisole, or phenomethole.

phenon ('fɛndn). [f. Gr. φαίνω to appear + -on.] a. *Biol.* A group of apparently similar plants or animals.

1943 CAMP & GILLY in *Brittonia* IV. 335 Phenon: a species which is phenotypically homogeneous and whose individuals are sexually reproductive, but which is composed of intersterile segments. 1969 E. MAYR *Princ. Systematic Zool.* I. § There is no generally accepted technical term for a phenotypically reasonably uniform sample, but it may be designated as a phenon. *Ibid.* 10 A phenon is not necessarily a population in the biological sense.

b. *Taxonomy.* A grouping of plants or animals established by techniques of numerical analysis.

1962 SNEATH & SOKAL in *Nature* 3 Mar. 860/1 How should we name the groups which are established by numerical taxonomy?... We call the groups simply 'phenons'. 1963 DAVIS & HEYWOOD *Princ. Angiosperm Taxon.* iv. 136 Sneath & Sokal have introduced the concept of a phenon for the definition of groups obtained by cluster analysis... In practice a phenon defines groups by drawing lines horizontally across the dendrograms. 1963 SOKAL & SNEATH *Princ. Numerical Taxon.* ix. 251 The phenon nomenclature... Phenons are groups which approach natural taxa more or less closely, and... they can be of any hierarchic rank or of indeterminate rank. 1966 *New Scientist* 20 Jan. 151/3 These groups are called phenons... If the original taxa are species each of the three new phenon taxa might represent a sub-genus or genus. 1973 SNEATH & SOKAL *Numerical Taxon.* v. 204 The term phenon is intended to be general, to cover the groups produced by any form of cluster analysis.

phenosafranin (f'i:nə'sæfræni:n, -in). *Chem.* Formerly also -in. [ad. G. *phenosafranin* (O. N. Witt; see R. Nietzki in *Ber. d. Deut. Chem. Ges.* (1883) XVI. 466), f. *pheno*- PHENO- + *safranin* SAFRANIN.] A synthetic red dye, C₁₈H₁₅N₄Cl, which is used in photography as a desensitizer; also, any of the derivatives of this compound.

1883 *Jrnl. Chem. Soc.* XLIV. 731 Phenosafranin... obtained by Witt by oxidising a mixture of aniline (2 mols.) and paraphenylenediamine (1 mol.)... forms beautifully crystalline salts. 1921 [see DESENSITIZING v.]. 1937 *Thorpe's Dict. Appl. Chem.* (ed. 4) I. 571/2 Nietzki showed that the same phenosafranin may be obtained (a) by condensing phenyl-m-phenylenediamine with phenyl-p-phenylenediamine, or (b) from diphenyl-p-phenylenediamine... and p-phenylenediamine. 1970 *Amat. Photographer* 11 Mar. 63/3 The phenosafranines and allied desensitising dyes are not suitable for papers as they stain badly.

phenose ('fi:nəʊs). *Chem.* [f. PHEN- + -OSE².] A sweetish amorphous deliquescent compound formed by the action of hypochlorous acid on benzene, and having the general formula C₆H₁₂O₆ of the carbohydrates.

1878 KINGZETT *Anim. Chem.* 402 Phenose, as this body is termed, is not fermentible, but if its production... be hereafterwards confirmed, it is of the greater importance, since it directly connects the so-called carbohydrates with the benzene series and with the fatty acid series. 1892 MORLEY & MUIR *Watts' Dict. Chem.* III. 838 Phenose

C₆H₁₂O₆. Formed by the action of aqueous ClOH on benzene in the dark... also by the electrolysis of toluene mixed with alcohol and dilute H₂SO₄.

phenothiazine (f'i:nəʊ-, fɛnəʊ'thæzi:n). *Pharm.* Formerly also phenthiazine. [f. PHENO- + THI(O- + AZINE.)] a. A green, crystalline, heterocyclic compound, C₁₂H₉NS, which is used in veterinary medicine in the treatment of parasitic infestations. b. Any of various derivatives of this, which constitute an important class of tranquillizing drugs used esp. in the treatment of mental illnesses.

1894 G. M'GOWAN tr. *Bernthsen's Text-bk. Org. Chem.* (ed. 2) 539 Nile Blue springs from naphtho-phenoxazine; and the thionine dyes from phen-thiazine. 1917 *Chem. Abstr.* XI. 3903 (Index), Phenothiazine. 1926 H. G. RULE tr. *J. Schmidt's Text-bk. Org. Chem.* 709 Phenothiazine, thio-diphenylamine... is also the parent compound of a number of dye-stuffs. 1940 *Nature* 17 Aug. 232/2 Since phenothiazine is a new and valuable vermifuge, its effect on animal tissues is of some general interest. 1959 *Times* 14 Sept. 19/4 The nodula worm of sheep has been completely eliminated... by the use of pheno-thiazine during the period of winter housing. 1969 *Daily Tel.* 1 Nov. 2/7 Large doses of phenothiazines induce a Zombi-like rigidity. 1974 M. C. GERALD *Pharmacol.* iv. 71 The phenothiazine nucleus has proved... a rather versatile progenitor of pharmacologically useful compounds. *Ibid.* xvi. 301 Chlorpromazine (Thorazine), the most commonly employed phenothiazine.

phenotype ('fi:nəʊtaɪp). *Biol.* Also †phænotype. [ad. G. *phænotypus* (W. Johannsen *Elem. der exakten Erblchkeitslehre* (1909) vii. 123); see PHEN-, PHENO- and -TYPE.] A type of organism distinguishable from others by observable features; the sum total of the observable features of an individual, regarded as the consequence of the interaction of its genotype with its environment. Cf. GENOTYPE *sb.*²

1911 W. JOHANNSEN in *Amer. Naturalist* XLV. 132, I have proposed the terms 'gene' and 'genotype' and some further terms, as 'phenotype' and 'biotype', to be used in the science of genetics. *Ibid.* 134 All 'types' of organisms, distinguishable by direct inspection or only by finer methods of measuring or description may be characterized as 'phenotypes'. 1931 S. J. HOLMES *Life & Evolution* xiv. 277 A study of our checkerboard indicates that there are four phenotypes. 1958 *Antiquity* XXXII. 207 The Neolithic people were mostly of a different phenotype. 1964 G. H. HAGGIS et al. *Introd. Molecular Biol.* vii. 193 In this scheme the bodily characteristics, or phenotype, are jointly determined by the environment on the one hand and by the inherited chromosomal complement, or genotype, on the other. 1969 *Times Lit. Suppl.* 20 Nov. 1341 Darwinian selection acts on phenotypes. 1971 D. J. COVE *Genetics* iv. 45 It is usual to refer to the genetic constitution of a strain as its genotype, and to its appearance as its phenotype. 1973 *Listener* 28 June 85/1 Whether or not the average phenotypes of such races can be shown to differ significantly in IQ is beside the point. 1976 SMYTHIES & CORBETT *Psychiatry* iv. 36 A number of different subgroups based on different biochemical lesions... all... end up with a similar clinical picture. In other words many different genotypes can end up with a very similar phenotype.

Hence *pheno'typic, pheno'typical adjs.*, of or pertaining to the observable features of, or differences between, organisms (often used with the implication 'not genotypic'); *pheno'typically adv.*

1911 *Amer. Naturalist* XLV. 148 The phenotypically distinct and even diversely localized 'characters' convey easily the impression that they are the reactions of different genes. *Ibid.* 156 The merely phenotypical phenomena of alternative variability first pointed out by De Vries. 1929 R. R. GATES *Heredity in Man* ii. 26 There are cases where two or more factors combined to produce a single phenotypic character. 1930 *Biol. Bull.* LVIII. 85 (*heading*) Phenotypic variation in body and cell size of *Drosophila melanogaster*. 1935 *Proc. Nat. Acad. Sci.* XXI. 22 A rare phenomenon—the recurrence of phenotypically the same scute mutation. 1942 *Endeavour* I. 18/2 Many geneticists have... attempted to discover the processes involved in the mechanism by which the genes of the genotype bring about phenotypic effects. 1964 M. CRITCHLEY *Developmental Dyslexia* x. 64 His present study lent no support to the hypothesis that specific dyslexia, mental deficiency... and speech defects were different phenotypical manifestations of the same hereditary taint. 1964 *Punch* 28 Oct. 652/2 Earlier [sheep] breeders... chose their stock phenotypically, that is, by the look of them. 1970 *Sci. Amer.* Feb. 62/3 It seems likely that the highlanders have derived their special qualities from acclimatization—in short, that their response to their environment is phenotypic rather than genotypic. 1977 J. L. HARPER *Population Biol. of Plants* viii. 239 Parts of a clone or shoots on a tree will differ phenotypically, e.g. in age and size.

phenotyping ('fi:nəʊtaɪpɪŋ), *vbl. sb.* [f. prec. + -ING¹.] Allocation to a phenotype.

1964 *Jrnl. Dairy Sci.* XLVII. 1262/1 That agreement in phenotyping exists is valuable in... establishing a uniform nomenclature of the genetic variants. 1977 *Lancet* 8 Jan. 82/1 The variants so recognised are labelled alphabetically in the protease-inhibitor (Pi) phenotyping system.

phenoxide ('fi:nksaid). *Chem.* [f. PHEN-, PHENO- + OXIDE *sb.*] A salt of phenol, containing the anion C₆H₅O⁻; = PHENATE, PHENOLATE.

1888 *Jrnl. Chem. Soc.* LIV. 586 (*heading*) Compounds of phenoxides with cuprous and mercurous chlorides. 1906 J. J. SUBBOROUGH *Bernthsen's Org. Chem.* (rev. ed.) xxiv. 405 The phenols possess the character of weak acids, and they form salts with alkalis... known as phenates or phenoxides.

1936 L. J. DESHA *Org. Chem.* 185 Phenoxides, sometimes called phenates, are formed from phenols either by the action of the strongly positive free metals such as sodium or by dissolving in aqueous alkalis such as solutions of sodium hydroxide. 1966 RAKOFF & ROSE *Org. Chem.* xviii. 594 Phenols . . . are stronger acids than water; they will react with sodium hydroxide to form water and sodium phenoxide. 1974 [see PHENOLATE].

phenoxy(-) (f'i'ndksi), *prefix* and *a. (sb.) Chem. and Pharm.* [f. PHEN- + OXY-] (Before a vowel formerly also phenox-.) An inseparable formative element in names of compounds which contain the group $-O-C_6H_5$, as in **phenoxyacetic** (or **phenoxacetic**) acid, a colourless, crystalline solid, $C_6H_5O-CH_2COOH$; also, any of the chlorinated derivatives of this, which are widely used as weedkillers; **phenoxy-methylpenicillin** a white powder, 6-phenoxy-acetamidopenicillanic acid, $C_{16}H_{18}N_2O_5S$, which is a semisynthetic penicillin.

1879 *Jrnl. Chem. Soc.* XXXVI. 322 The author [sc. P. Fritzsche], has undertaken the investigation of oxyphenylacetic acid, . . . which was discovered and described by Heintz . . . and named by him phenoxacetic acid. *Ibid.* 642 (heading) Phenoxypropionic acid. 1880 *Ibid.* XXXVII. 318 The preparation of phenoxyacetic acid is described at length. 1900 E. F. SMITH tr. *V. von Richter's Org. Chem.* (ed. 3) II. 146 Phenoxyacetone, . . . $C_6H_5O-CH_2-CO-CH_3$, boiling at 230° , is condensed by concentrated sulphuric acid to methyl cumarone. 1926 D. W. MACARDLE *Use of Solvents in Synthetic Org. Chem.* iv. 62 Marvel and Tanenbaum found that if in the preparation of phenoxybutyl alcohol, ethyl alcohol dried over lime was used as solvent, yields of not over 45% were obtained. 1946 LONG & BRENCHELY *Suppression of Weeds* (ed. 2) xiii. 62 As a result of the work carried out . . . at Jealott's Hill Research Station a range of phenoxyacetic acid products were discovered, of which Methoxone (4-chlor-2-methylphenoxyacetic acid) was finally chosen as being a most efficient weed killer with selective properties. 1948 O. K. BEHRENS et al. in *Jrnl. Biol. Chem.* CLXXXV. 798 Phenoxyethylpenicillin-N - (2-Hydroxyethyl) - phenoxyacetamide (150 mg. per liter) . . . was used as the precursor for this penicillin. 1954 W. J. HICKINBOTTOM in E. H. Rodd *Chem. Carbon Compounds* IIIA. viii. 426 By the action of alcoholic potash, phenoxyacetylene is formed, an unstable oil. 1959 *Jrnl. Exper. Bot.* X. 33 (heading) Factors controlling the uptake of phenoxyacetic acids by *Lemna minor*. 1959 *Times* 6 Mar. 13/6 A preparation of penicillin-penicillin-V, or phenoxyethylpenicillin—was produced which was not destroyed by the acid contents of the stomach. 1969 *New Scientist* 9 Jan. 61/2 Even the relatively innocuous phenoxyacetic acid compounds . . . have already caused significant ecological damage by destroying natural mangrove associations. 1970 HOOVER & STEDMAN in A. Burger *Medicinal Chem.* (ed. 3) I. xviii. 382/1 Phenoxyethylpenicillin (penicillin V) is now the only important biosynthetic penicillin in use.

B. In Combs. in which **phenoxy** may be used *attrib.* (without hyphen) or joined by a hyphen to the second element. 1. Containing or being the group $-O-C_6H_5$.

1866 *Jrnl. Chem. Soc.* LXIX. 161 (heading) On γ -phenoxy-derivatives of malonic acid and acetic acid. 1923 *Chem. Abstr.* XVII. 3864 (heading) Phenoxy derivatives of propane. 1926 *Jrnl. Amer. Chem. Soc.* XLVIII. 2748 The method chosen for the synthesis of these compounds was first to prepare the phenoxy alcohols and then to convert them into the chlorides. 1926 *Biochem. Jrnl.* XX. 1083 Replacement of the two phenoxy-groups by bromine. 1928 *Chem. Abstr.* XXII. 769 (heading) Influence of the phenoxy group and its derivatives upon the halochromism of known chromogens. 1964 L. J. AUDUS *Physiol. & Biochem. Herbicides* v. 195 The effects of the halogenated aliphatic acids on total soil populations are as diverse as those of the phenoxy herbicides. 1964 W. A. WATERS *Mechanisms Oxidation Org. Compounds* ix. 139 In aqueous solution the phenoxy radical itself has a mean lifetime of about 10^{-3} second. 1974 *McGraw-Hill Yearbk. Sci. & Technol.* 330/2 The phenoxy herbicides (2,4-D and 2,4-T), aminotriazole . . . and pidoram are frequently used in forestry.

2. Designating thermoplastics characterized by a linear molecule containing recurring phenoxy groups, which are usu. made by condensation of epoxides, esp. epichlorhydrin, with certain phenols. Also as *sb.*

1962 *Mod. Plastics* Nov. 169 (heading) Phenoxy—a new thermoplastic. *Ibid.*, Phenoxy materials are a new family of thermoplastic resins that can be chemically cross-linked to impart thermosetting properties. 1963 *Aeroplane* 21 Feb. 20/2 Ventilating ducts in the Boeing 727 are fabricated from self-extinguishing phenoxy resin. 1967 *Times Rev. Industry* May 76/2 There has also been progress in the currently lower tonnage plastics such as nylon and polyester in film laminates for packaging processed foods, phenoxy polymer in blown bottles, and polycarbonate for sterilizable containers. 1969 L. S. MOUNTS in W. R. R. Park *Plastics Film Technol.* v. 141 Phenoxy films are rigid transparent films with high impact strength. 1970 W. G. POTTER *Epoxide Resins* ii. 19 The 'phenoxies' are in fact to be regarded as high-M thermoplastic materials and have been used either as surface-coating binder resins . . . or as thermoplastics for blow moulding, injection moulding, [etc.].

phenozygous, variant of PHÆNOZYGOUS.

phenothiazine, obs. var. PHENOTHIAZINE.

phenolamine (f'en'tolæmi:n). *Pharm.* [f. PHEN-, PHENO- + TOL(YL + AMINE).] A white or cream-coloured heterocyclic solid, $C_{17}H_{19}N_3O$, which is used (in the form of its salt) as a

vasodilator, esp. in the treatment of hypertension caused by phæochromocytoma.

1953 *Jrnl. Amer. Med. Assoc.* 15 Aug. 1533/2 Phentolamine hydrochloride, a salt of phentolamine base, is suitable for oral administration and acts as a potent adrenergic blocking agent, producing adrenergic and sympatholytic effects. 1961 L. MARTIN *Clin. Endocrinol.* (ed. 3) vi. 182 Phentolamine is the most reliable of the adrenergic substances both for diagnosis of phæochromocytoma and for use during its removal. 1968 J. H. BURN *Lect. Notes Pharmacol.* (ed. 9) 8 Patients with a high blood pressure may suffer from an adrenal medullary tumour which secretes noradrenaline and adrenaline into the blood. This can be diagnosed by injecting phentolamine intravenously. 1972 *Materials & Technol.* V. xxi. 810 Alpha receptor blockers such as tolazoline may be used in the treatment of peripheral blood vessel spasm, while phentolamine is used to treat hypertensive (high blood pressure) crises.

phenyl (f'i:nai, f'i:nil, f'enil). *Chem.* [f. PHEN- + -YL, lit. 'radical of benzene (phene)'.]

1. The monovalent organic radical C_6H_5 (also symbolized Ph), which exists in the free state as DIPHENYL, $H_2C_6-C_6H_5$, and enters as a radical into benzene (**phenyl hydride**), phenol (**phenyl hydroxyl**), aniline (**phenylamine**), and a very extensive series of organic compounds.

1850 DAUBENY *Atom. The.* viii. (ed. 2) 238 A compound radical called phenyle, a name given by Laurent to the supposed base of the volatile liquid, obtained by compressing oil gas, which was first examined by Faraday, and denominated by him benzole. 1857 MILLER *Elem. Chem.* III. 563 Compounds . . . have been formed, which appear to contain oxide of phenyl in combination with acids. 1862 N. Syd. Soc. *Year-bk. Med.* 441 On some applications of Carboic Acid or Oxide of Phenyle. 1880 CLEMINSHAW *Wurtz' Atom. The.* 220 Phenyl . . . wants but one atom of hydrogen to become benzene.

2. *attrib.* and *Comb.*, as **phenyl acetate**, **carbonate**, **cyanide**, **ether**, **ketones**, **oxide**, **phosphate**, **sulphide**; **phenyl compounds**, **derivatives**, etc.; **phenyl-blue**, **dimethyl-amido-phenylimide of quinone**; **phenyl-brown**, a colouring matter, possessing explosive properties.

1866 ODLING *Anim. Chem.* 123 This relationship of salicylic and phenyl compounds. 1872 WATTS *Dict. Chem.* VI. 918 Phenyl carbonate. . . Phenyl phosphates [etc.]. 1875 *Ibid.* VII. 945 The explosive character of the phenyl-brown is . . . due to the dinitrophenol. 1899 CAGNEY tr. *Yaksh's Clin. Diagn.* vii. (ed. 4) 400 The exhibition of salol (phenyl-ether of salicylic acid).

3. Freely combined (hyphenated or written connectedly) with other chemical terms, denominating compounds into which phenyl enters as a radical, often replacing hydrogen or other monovalent element or group; such are, e.g.

phenyl-a'cetamide = ACETANILIDE. **phenyl-a'cetic a.**: see quot. 1877. **phenyl-a'cetylene**: see quot. 1872. **phenylar'sonic a.** [ARSONIC a.], in **phenylarsonic acid**, a colourless, toxic, crystalline solid, $C_6H_5AsO(OH)_2$, which is used as a trypanocid; also, any derivative of this; **phenyl-glycol**, a diatomic alcohol, $C_6H_5-CHOH-CH_2OH$. **phenyl-hydrazine**: see quot. 1902. **phenylhydrazone** [ad. G. *phenylhydrazon* (O. Rudolph 1888, in *Ann. d. Chem. u. Pharm.* CCXLVIII. 99): see HYDRAZONE], any of a class of compounds formed by condensation of an aldehyde or ketone with phenylhydrazine, which are usu. crystalline solids and are used to characterize the parent aldehyde or ketone; **phenylmercury**, used *attrib.* or *absol.* to denote compounds which contain a phenyl group bonded directly to a mercury atom; so **phenylmercuric a.**, as **phenylmercuric acetate**, a white crystalline solid, $CH_3COOHgC_6H_5$, used mainly as a fungicide and herbicide; **phenylmercuric nitrate**, a white crystalline solid, $C_6H_5HgNO_3$; C_6H_5HgOH , used mainly as a fungicide and disinfectant. **phenylpyruvic a.**, **phenylpyruvic acid**, a colourless crystalline solid, $C_6H_5CH_2CO-COOH$, which in phenylketonuria is produced by the metabolism of phenylalanine and excreted in the urine; hence **phenylpyruvate**, a salt or the anion of this acid. **phenyl-sulphuric a.**, sulphocarboic: see quot. 1880. **phenylthio'carbamide**, a white, crystalline solid, $NH_2CS-NH-C_6H_5$, which has a bitter taste to persons possessing a certain dominant gene and is tasteless to those lacking it. **phenylthiourea** (-θαιου'ριον) = **phenylthiocarbamide** above.

1866 WATTS *Dict. Chem.* IV. 418 *Phenyl-acetamide or Acetanilide. Produced by the action of aniline upon acetic anhydride or chloride of acetyl. 1885-8 FAGEE & PVE-SMITH *Princ. Med.* (ed. 2) I. 205 Antifebrin (. . . phenyl-acetamide) is said to be more useful, more agreeable, and more safe than any. 1877 WATTS *Found's Chem.* (ed. 2) II. 528 Alpha tolic or *phenyl-acetic acid, $C_6H_5-CH_2-CO_2H$. 1885 KLEIN *Micro-Organisms* 73 Antiseptics, such as carboic acid . . . strong solutions of phenyl-propionic acid and

phenyl-acetic acid. 1872 WATTS *Dict. Chem.* VI. 920 *Phenyl-acetylene. Syn. with Acetylen-benzene. 1885 REMSEN *Org. Chem.* (1888) p. ix, Phenyl-acetylene and Derivatives. 1905 *Amer. Chem. Jrnl.* XXXIII. 104 The reduction takes place with equal ease in the aromatic series, monophenyl arsine . . . being obtained from *phenyl arsonic acid. 1937 *Thorpe's Dict. Appl. Chem.* (ed. 4) I. 488/1 The introduction of an amino group into the para-position in phenylarsonic acid decreases its toxicity and increases its trypanocidal activity. 1959 *Times* 7 Dec. (Agric. Suppl.) p. vii/1 So far as arsenicals are concerned, two phenylarsonic acids have received attention [as growth stimulants for poultry]. 1897 *Allbutt's Syst. Med.* III. 213 The property of *phenyl-hydrazin to form with grape-sugar a characteristic crystalline compound called phenyl-glucosazone. 1902 *Encycl. Brit.* XXVI. 721/2 E. Fischer [in] 1884, made the all-important discovery of phenylhydrazine, $C_6H_5-NH.NH_2$ or $Ph.NH.NH_2$. 1889 *Jrnl. Chem. Soc.* LVI. 251 (heading) *Phenylhydrazones. 1938 [see HYDRAZONE]. 1966 *McGraw-Hill Encycl. Sci. & Technol.* VII. 62/2 When the starting material is the phenylhydrazine of acetone, the product is 2-methylindole. 1920 *Chem. Abstr.* XIV. 2181 There at once sep. leaflets of *phenylmercuric chloride, $PhHgCl$, m. 250° . 1921 F. C. WHITMORE *Org. Compounds Mercury* iii. 65 Phenylmercuric acetate reacts with ammonium hydroxide giving a substance $(C_6H_5Hg)_2NH_2OAc$. *Ibid.* ix. 177 Phenylmercuric nitrate forms rhombic tablets, insoluble in cold water. 1951 A. GROLLMAN *Pharmacol. & Therapeutics* xxv. 510 The first of these compounds used as an antiseptic was phenylmercuric chloride but . . . this was supplanted by the more soluble basic phenylmercuric nitrate. 1966 *McGraw-Hill Encycl. Sci. & Technol.* I. 483/1 The most important of the organic mercurials are phenylmercuric nitrate and acetate. 1972 *Phenylmercuric* [see *phenylmercury* below]. 1931 *Jrnl. Infectious Dis.* XLIX. 440 *Phenyl-mercury-nitrate was first prepared by Otto in 1870, but its biological characteristics have . . . never been studied. 1955 G. J. ROSK *Crop Protection* vi. 103 Bacterial canker of cherries has been controlled by applications of a formulation containing the phenyl mercury salt of naphthyl methane sulphonic acid. 1969 JOHNELS & WESTERMARK in Miller & Berg *Chem. Fallou* x. 224 There is no indication . . . that the use of . . . phenylmercury from 1930 to 1940 has caused an increase in the mercury content of these terrestrial bird species. 1971 *Nature* 20 Aug. 535/1 The death of birds in Sweden was traced to the use of phenylmercury compounds in the pulp and paper industry. 1972 F. MATSUMURA *Environmental Toxicol. Pesticides* 532 In the U.S. the source of contamination of many rivers has been suspected to be by phenylmercuries, because of the extensive use of phenylmercuric acetate as a slime treatment agent in paper mills. 1932 *Jrnl. Biol. Chem.* CXVI. 628 In one experiment, after 2.5 gm. of sodium *phenylpyruvate had been fed for 2 successive days, it was possible to isolate from the urine 0.4 gm. of phenacetic acid. 1970 R. W. MCGILVER *Biochem.* xvii. 387 People with phenylketonuria also excrete some other aromatic compounds . . . representing aberrations of the normal process of metabolism due to the high concentration of phenylpyruvate. 1887 *Jrnl. Chem. Soc.* LII. 142 The author . . . advances the view that the compound is probably *phenylpyruvic acid. 1935 [see PHENYLKETONURIA]. 1968 PASSMORE & ROBSON *Compan. Med. Stud.* I. xi. 24/2 Presence of phenylpyruvic acid in the blood leads to mental retardation. Arrangements to test the urine of every child soon after birth for phenylpyruvic acid have been made in many places. 1880 GARROD & BAXTER *Mat. Med.* 177 Sulphocarboic or *phenylsulphuric acid is formed by the direct union of pure carboic acid with sulphuric acid. 1879 *Jrnl. Chem. Soc.* XXXVI. 804 Mono- and di-phenylthiocarbamide. . . are soluble in caustic soda or potash. 1932 [see PTC s.v. P II]. 1976 *Nature* 20 May 223/2 This report concerns two dermatoglyphic traits, fingerprint pattern index and total ridge-count, both strongly heritable. In addition, phenylthiocarbamide (PTC) taster ability . . . and skin colour were studied. 1896 *Jrnl. Chem. Soc.* LXIX. 857 If dilute hydrochloric acid be now added to the clear solution, a white solid at once separates, which . . . forms white prisms . . . consisting of *phenylthiourea. 1959 *Listener* 3 Dec. 968/2 People who can taste phenylthiourea seem to be slightly more liable to get one form of thyroid disease and slightly less liable to get another. 1971 J. Z. YOUNG *Introd. Study Man* xxxviii. 553 A minimal yet striking example [of genetic variation of the nervous system] is the inheritance of the capacity to taste the substance phenylthiourea.

Hence **phenyl'amic a.** = ANILIC. **'phenyla,mide** = ANILIDE. **'phenyla,mine**, the systematic name of ANILINE (*monophenylamine*), $NH_2-C_6H_5$, and of a large series of compounds of the same type, 'organic bases derived from ammonia by the substitution of one or more atoms of phenyl for an equivalent quantity of hydrogen' (Watts); e.g. *diphenylamine*, $NH(C_6H_5)_2$, *triphenylamine*, $N(C_6H_5)_3$; so *azophenylamine*, $NH_2-C_6H_4-N$, *bromophenylamine*, $NH_2-C_6H_4Br$, *chloro-*, *iodo-*, *nitro-phenylamine*, etc. **phenylate**, a salt of phenylic acid. **phe'nylia**, obs. synonym of *phenylamine* (aniline). **phenylic** (f'i'nli:k) a., of or derived from phenyl; **phenylic acid**, **alcohol**, other names for Phenol or Carboic acid; also formerly called **'phenyloous acid**. **'phenyly,mide** (IMIDE): see quot. 1866. **phenyl'urea** = CARBANILAMIDE.

1866 WATTS *Dict. Chem.* IV. 419 *Phenyl'amic acids. Anilic acids. 1857 MILLER *Elem. Chem.* III. 255 Aniline, Kyanol, *Phenylamide, Phenylol. Crystalline, of Benzidam ($C_{12}H_9N$). This remarkable base may be prepared from several sources, and by a variety of reactions. 1866 ROSCOE *Elem. Chem.* xxxix. 338 Aniline has been called *Phenylamine . . . but it cannot be prepared like an amine. 1880 FRISWELL in *Jrnl. Soc. Arts* 16 Apr. 442/1 The earliest violets obtained by artificial means were those produced by the action of pure aniline, or phenylamine, on roseine. 1880 *Athenaeum* 27 Nov. 713/1 The authors . . . have thus prepared aluminic methyrate, *phenylate, &c. 1857 *Phenylia [see *phenylamide*]. 1858 THUDICHUM *Urine* 339 *Phenyl'ic acid