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How to use this volume

This is one of the ten volumes of the *Ready Reference and Index*, or Micropædia (Volumes I through X).

Begin all reference searches here.

- To satisfy a reference inquiry quickly.
- To learn what *The New Encyclopædia Britannica* contains in its many articles.

Enter these volumes at any alphabetical point. The entries have been designed to provide information or to direct readers elsewhere in ways that are self-evident. But knowledge of a few editorial conventions will provide fuller understanding of what is offered:

1. Cross references appear often—identified by *see*, *see also*, or *q.v.* (*quod vide*, for “which see”), or as RELATED ENTRIES—and always refer to other entries in the *Ready Reference and Index* in alphabetical order (Volumes I-X).
2. Entries are alphabetized as if they were one word, up to the comma, regardless of the number of words in the title. Thus *mountaineering* precedes *mountain goat*, whereas *charge*, *electron* precedes *chargé d'affaires*.
3. Directions, or *Index* references, are given to the page in the Macropædia (Volumes 1-19) on which a subject or aspect of a subject may be found in the longer articles.

Volume and page numbers immediately following the title of an entry always refer to a comprehensive article in volumes 1 through 19.

All other volume and page references follow the text and cite *sections* of the longer (Macropædia) articles: the small, or lowercase, letters following page numbers—a, b, c, d, and e, f, g, h—identify the quarter of the column in which a reference begins. See marginal illustration.

Another point about index references: *Major ref.* (for “major reference”) followed by a volume and page number always cites a reference that is more comprehensive than the references following and should be considered the principal place to look for broad coverage of the topic under discussion.

All other references carry brief descriptive phrases so that the reader may know what he may expect to find.

Index volume-and-page references are preceded by a small dot [.]. Underscored phrases are headings under which several index references are grouped.

ephedrine, an alkaloid compound formerly derived from the leaves of several species of Chinese shrubs of the genus *Ephedra* of the family Ephedraceae (*q.v.*, order Gnetales), but now made synthetically. It is used as a decongestant drug (*q.v.*).

Johnson, Samuel 10:244 (b. Sept. 18, 1709, Lichfield, Staffordshire—d. Dec. 13, 1784, London), poet, essayist, critic, journalist, lexicographer, and conversationalist, is one of the outstanding figures of English 18th-century life and letters.

- REFERENCES in other text articles;
- Addison's prose style and fame 1:84a
 - advertising criticism 1:103h
 - book publishing history 15:228e
 - Boswell's friendship and biographical work 3:61h

a	e
b	f
c	g
d	h

Anglo-Norman literature, the writings in the French dialect of medieval England, also known as Norman-French or Anglo-French. Beginning effectively with the Norman Conquest (1066), it became the vernacular of the court, the law, the church, the schools and universities, Parliament, and, later, of municipalities and trade. *Major ref.* 10:1105d.

• chansons de geste and the Tristan tale 15:1021d *passim* to 1022g

Lalo, (Victor-Antoine)-Édouard (b. Jan. 27, 1823, Lille, Fr.—d. April 22, 1892, Paris), composer known for the clarity of his orchestration. Born into a military family of Spanish descent, he went to Paris, without funds, in 1839, studying violin with François Habeneck at the Conservatoire and composition privately with Julius Schulhoff and Crèvecoeur. In 1848 he published his first songs, and in 1855 joined the Armingaud quartet as viola player.



Lalo
J.P. Zilio

He won success with his *Symphonie espagnole* for violin and orchestra, first performed by Pablo Sarasate in 1875; for his cello concerto (1876); and for his ballet *Namouna* (1882). *Namouna* foreshadowed the ballets of Diaghilev in that it merited attention more for its musical score than for its choreography. There followed the *Symphony in G Minor* (1887) and the final version of his opera *Le Roi d'Ys* (1888). His chamber works, which were influential, include a string quartet, three trios, and piano and violin sonatas. He also wrote concerti for violin and for piano. His music, although it shows some affinity with Robert Schumann and Carl Weber, is the product of a highly original talent.

Lalor, Peter (b. Feb. 5, 1827, Tinakill, Queen's County, now County Leix—d. Feb. 9, 1889, Melbourne), politician who, when he was a miner in 1854, led the gold miners' uprising at the Eureka Stockade in Ballarat, Victoria, one of the most celebrated rebellions in Australian history.

Trained as an engineer in Ireland, Lalor emigrated to Victoria in 1852, working first on the Melbourne railway and then at the Eureka goldfield in 1853. He joined the Ballarat Reform League, formed by miners on Nov. 11, 1854, to protest high license fees, police mistreatment, lack of representation, and shortage of land. When the league's petition for re-



Lalor, detail of a lithograph by L. Becker, 1856

By courtesy of the National Library of Australia, the Rex Nan Kivell Collection

form went unanswered by the government, the miners organized to fight on November 30 and chose Lalor as their leader. He went into hiding after the rebellious miners were driven out of the Eureka Stockade on December 3 and emerged again after charges against the rebels' leaders had been dropped. After the Eureka uprising, most of the miners' grievances were redressed.

Lalor was one of the first goldfields representatives, elected to the Victoria Legislative Council in 1855 and then to the Legislative Assembly (lower house) 1856–71 and 1875–89. He served as postmaster general (1875), commissioner of trade and customs (1875, 1877–80), and speaker of the assembly from 1880 to 1887.

La Louvière, industrial city, Hainaut province, Belgium. Pop. (1970) 23,771. 50°28' N, 4°11' E

·foundation and development 2:818a

lama, Tibetan BLA-MA ("superior one"), in Tibetan Buddhism, a spiritual leader. Originally used to translate guru (Sanskrit: "spiritual teacher or guide") and thus applicable only to heads of monasteries or great teachers, the term is now extended out of courtesy to any respected monk or priest. The common Western usage of "lamaism" and "lamasery" are in fact incorrect terms of reference for Tibetan Buddhism and monastery. Some lamas are considered reincarnations of their predecessors. These are termed *sprul-sku* lamas (see reincarnate lamas), as distinguished from "developed" lamas, who have won respect because of the high level of spiritual development they have achieved.

·saintly reincarnation 16:164g

La Madeleine, town, Nord département, northern France, a northern suburb of Lille,



The Sainte-Marie-Madeleine church and the town hall, La Madeleine, Fr.

Editions "La Cigogne"—Hachette

of which it was originally part of the outer defenses. It has textile, metallurgical, chemical, electrical, and food-processing industries. Latest census 23,187.

50°39' N, 3°04' E

La Ma'dukelleng: see Arung Singkang.

La Mancha, in its widest sense denotes a bare and monotonous elevated plateau (2,000 ft [610 m]) of central Spain, which stretches between the Montes (mountains) de Toledo and the western spurs of the Cerro (hills) de Cuenca, being bounded on the south by the Sierra Morena and on the north by La Alcarria region. It comprises portions of the modern provinces of Cuenca, Toledo, and Albacete (*qq.v.*) and most of Ciudad Real (*q.v.*) province. Known to the Arabs as al-Manshah (Dry Land or Wilderness), the region was an intermediate zone between Christian and Moorish forces during the Middle Ages. Down to the 16th century, the eastern portion was known as La Mancha de Montearagón or La Mancha de Aragón, and the western simply as La Mancha; afterward, the northeastern and southwestern sections, respectively, were distinguished by the epithets Alta and Baja (upper and lower). La Mancha remains almost exactly as Miguel de Cervantes (Saavedra) described it in his great 17th-century antichivalric novel *Don Quixote*. Many villages, such as El Toboso and Argamasilla

de Alba, both near Alcázar de San Juan, are connected by tradition with Quixotic episodes.

Agriculture (wheat, barley, oats, wine grapes) is the primary economic activity, but it is severely restricted by unfavourable environmental conditions. In the north, hunting and fishing reserves draw increasing numbers of tourists.

·map, Spain 17:382

Lamar, city, seat of Barton County, southwest Missouri, U.S., on a branch of the Spring River. Founded in 1856 and named for Mirabeau B. Lamar, president of the Texas Republic (1838–41), it developed as the centre of a farming community. Lamar is the birthplace of Harry S. Truman, 33rd president of the United States. Pop. (1980) 4,053. 37°29' N, 94°17' W

Lamar, Lucius Quintus C(incinnatus) (b. Sept. 17, 1825, Putnam County, Georgia—d. Jan. 23, 1893, Macon), lawyer, U.S. secretary of the interior (1885–88), and associate justice of the U.S. Supreme Court (1888–93), was also a U.S. representative (1857–60, 1873–77) and senator (1877–85) from Mississippi. He drafted the Mississippi ordinance of secession from the Union (1861), fought for the Confederacy in the American Civil War, and was appointed Confederate envoy to

Russia (1862). After the war, however, his moderating influence during Reconstruction won him the sobriquet "the Great Pacificator." As secretary of the interior he insisted that the Interstate Commerce Commission (created 1887) be subject to the presidency rather than to his own office.

Perhaps Lamar's most important Supreme Court opinion, a dissent in *In re Neagle*, 135 U.S. 1 (1890), was an effort to limit the powers of the federal executive branch to those specified in the Constitution and in statutes enacted by Congress. In his view, the authority of the states could not be overridden by federal executive powers inferred from general theories of government.

La Marche, Olivier de (b. c. 1425, Villegaudin, Burgundy, now in France—d. Feb. 1, 1502, Brussels), Burgundian chronicler and poet who, as historian of the ducal court, was an eloquent spokesman of the chivalrous tradition.

After serving as a page to Philip the Good, duke of Burgundy, La Marche entered the service of the Duke's son, the Comte de Charolais (later called Charles the Bold). He became Charles's secretary and remained in Burgundian service all his life, representing Charles on many diplomatic missions throughout Europe. After Charles was killed at Nancy in 1477, La Marche continued to

serve the Duke's heiress, Mary, and her husband, the Austrian archduke Maximilian.

La Marche's writings, the most important of which was *L'État de la maison du duc Charles de Bourgogne* (1474; "The State of the House



La Marche, detail of an engraving by an unknown artist

By courtesy of the trustees of the British Museum, photograph, J.R. Freeman & Co. Ltd.

of Charles, Duke of Burgundy"), for the most part glorify the house of Burgundy. His *Mémoires*, two books covering the periods 1435–67 and 1467–88, were completed about 1490. Though written with charm and liveliness, they are unreliable as history because La Marche makes mistakes in chronology and was too resolutely devoted to the house of Burgundy to be objective, especially in his judgments on French policy.

Lamarck, Jean-Baptiste de Monet, chevalier de 10:616 (b. Aug. 1, 1744, Picardy, Fr.—d. Dec. 18, 1829, Paris), pioneer biologist, best known for his idea that acquired traits are heritable. Lamarck's explanation of evolutionary change was controverted by Darwin. His speculations, however, are often wrested out of context, altering his original intent.

Abstract of text biography. After a short time studying for the priesthood, Lamarck entered the army, during which time he became interested in medicine and botany. He was an originator of the modern conception of the museum collection.

Lamarck's notable works include *Système des animaux sans vertèbres, ou table général des classes* (1801), a classification of invertebrates, *Philosophie Zoologique* (1809), and a natural history of invertebrates (1815–22).

REFERENCES in other text articles:

- biological classification development 4:685c
- biological development and evolution 5:650d
- biological sciences development 2:1024a
- evolutionary theories and origins 7:8a
- evolutionary theory rejection 5:494a
- faunal succession and evolution views 17:717g
- genetic acquisition of acquired traits 8:802c
- human learned behaviour
 - inheritability 8:1146f
- inheritance of acquired characters 7:994c
- primate evolution theory 14:1015d
- theory of species variation 19:1166e

Lamarckism, a theory of organic evolution based on the unproved principle that changes acquired by organisms during their lifetime—such as greater development of an organ or a part through increased use—could be transmitted to their offspring. The doctrine, proposed by the French naturalist J.B. Lamarck in 1809, influenced evolutionary thought through most of the 19th century. Lamarck believed that in animals, a new environment calls forth new needs which the animal seeks to satisfy by some effort. Thus, new needs engender new habits, which modify the parts cumulatively and permanently: for example, the giraffe, seeking to browse higher and higher on the leaves of trees on which it feeds, stretches its neck, and continuation of the habit for a long time results in a gradual

lengthening of the limbs and neck. In the early 20th century, Neo-Lamarckism incorporated the Darwinian theory of natural selection in its basic postulate that organic evolution is caused by the action of natural selection on the acquired characters.

Lamarckism was discredited by most workers after the 1930s, but certain of its ideas continued to be held in the Soviet Union. Incorporated in state-approved—but professionally disavowed—schools of Michurinism and Lysenkoism (q.v.), they dominated and severely handicapped Soviet research in genetics through mid-20th century.

- biological sciences development 2:1024f
- early evolutionary ideas and heredity 7:8c
- fossil succession interpretation 17:717g
- genetic acquisition of acquired traits 8:802c
- Lamarck's research and speculations 10:616f
- teleology and evolutionary biology 12:874d
- Wallace's natural selection theory 19:531a

Lamarkia aurea (grass): see goldentop.

La Marmora, Alfonso Ferrero (b. Nov. 18, 1804, Turin, Italy—d. Jan. 5, 1878, Florence), general and statesman who, while in the service of Sardinia-Piedmont played an important role in the Risorgimento (a nationalistic revival movement to unify Italy).

A graduate of the Turin Military Academy, La Marmora entered the army in 1823 and first distinguished himself in the Italian wars of independence against Austria, especially at Borghetto and Pischiera (May 1848). He also commanded the Sardinian forces in the Crimea (1855). On Aug. 5, 1848, he rescued the Sardinian king Charles Albert from Milanese revolutionaries, who had resented the King's armistice with the Austrians. He was promoted to general in October and served as minister of war until November; he later suppressed an insurrection at Genoa (April 4–5, 1849). As minister of war again until 1860, he reorganized the Italian Army.



La Marmora, detail of a lithograph by Masutti

By courtesy of the Museo Centrale del Risorgimento, Rome

La Marmora served as premier of Piedmont from July 1859 to January 1860, as well as governor of Milan and the king's lieutenant in Naples. In September 1864 he again became premier, and as minister of foreign affairs in April 1866, he concluded Italy's alliance with Prussia against Austria. As chief of staff in the ensuing war, however, he was held responsible for the overwhelming defeat of the Italians by Austria at Custoza (June 24, 1866). La Marmora retired to private life shortly afterward, although, after Rome was annexed to the Kingdom of Italy in 1870, he was appointed the king's lieutenant there. Among his several works, *Un po' più di luce sugli eventi politici e militari dell'anno 1866* (1873; "A Little More Light on the Events of the Year 1866") seeks to justify his actions at Custoza.

La Marque, city, Galveston County, southeastern Texas, U.S., contiguous to Texas City, directly northwest of Galveston across West Bay. Founded in the early 1800s as an agricultural village, it was first known as The Highlands. Its name (French: "the Mark") was given by its first postmistress. Its growth as a residential urban entity within an industrial

complex began during World War I and was accelerated during World War II. Agricultural production surrounding La Marque still contributes to the general economy of the area, although many La Marque residents are employed in Texas City and Galveston. Inc. 1953. Pop. (1980) 15,372. 29°22' N, 94°58' W

Lamartine, Alphonse de 10:618 (b. Oct. 21, 1790, Mâcon, Fr.—d. Feb. 28, 1869, Paris), poet and statesman whose lyrics in *Méditations poétiques* (1820) established him as one of the key figures in the Romantic movement in French literature.

Abstract of text biography. After his education with the Jesuits at Belley, Lamartine wrote verse and travelled, served for several months in Louis XVIII's bodyguard, and emigrated to Switzerland. In 1820 he was appointed secretary to the embassy at Naples and married an Englishwoman, Maria Ann Birch. In the same year he published his first book of poems, *Méditations poétiques*, which, because of its new romantic tone and sincerity of feeling, was immensely successful. *Nouvelles méditations poétiques, Mort de Socrate* (1823), and *Le Dernier Chant du pèlerinage d'Harold* (1825) increased his reputation. Lamartine was elected to the French Academy in 1829. In the following year he abandoned a diplomatic career, devoting his time to travel and to the composition of a long metaphysical poem, of which *Jocelyn* (1836) and *La Chute d'un ange* (1838) form part. During the next decade, he became increasingly active in politics as a spokesman for the working class. He published historical and political works. After the revolution of 1848, he was, briefly, the effective head of the provisional government. He afterward devoted his life to writing.

REFERENCES in other text articles:

- French literature of the 19th century 10:1192g
- Second Republic establishment 7:665d

Lamas, Carlos Saavedra: see Saavedra Lamas, Carlos.

Lamashtu, Sumerian LAMAR or LAMME, in Mesopotamian religion, the most terrible of all demonesses, daughter of the heaven god Anu (Sumerian An). A wicked female who slew children, drank the blood of men, and ate their flesh, she had seven names and was often described in incantations as the "seven witches." Lamashtu accomplished a variety of evil deeds: she disturbed sleep and brought nightmares; she killed foliage, infested rivers and streams; she bound the muscles of men and brought disease and sickness. Lamashtu was often portrayed on amulets as a lion- or bird-headed female figure kneeling on an ass; she held a double-headed serpent in each hand and suckled a dog at her right breast and a pig or another dog at her left breast.

La Massana, parish, Andorra.

·area and population table 1:865

Lamb, Charles (b. Feb. 10, 1775, London—d. Dec. 27, 1834, Edmonton, Middlesex), essayist and critic, best known for his series of miscellaneous "Essays of Elia," but also among the greatest of English letter writers, and a perceptive literary critic.

Lamb's father, a scrivener, acted as confidential clerk to Samuel Salt, a bencher of London's Inner Temple. The boy read avidly among Salt's books, and at the age of seven went to school at Christ's Hospital, where he studied until 1789. He was a near contemporary there of Samuel Taylor Coleridge, with whom he began what was to be a lifelong friendship, and of Leigh Hunt. He was a good scholar, and but for a stutter would probably have proceeded to holy orders. Instead, he left school just before the age of 15 and in 1792 found employment as a clerk at India House, remaining there until retirement in 1825. In 1796 Lamb's sister, Mary, in a fit of madness (which was to prove recurrent) killed their mother. Lamb reacted with courage and loyalty, taking on himself the burden of look-



Charles Lamb, detail of an oil painting after Henry Meyer (1782–1847); in the National Portrait Gallery, London

By courtesy of the National Portrait Gallery, London

ing after Mary, and being rewarded by her affectionate devotion.

Lamb's first appearances in print were as a poet, with contributions to collections by Coleridge (1796) and by Charles Lloyd (1798). *A Tale of Rosamund Gray*, a prose romance, appeared in 1798, and in 1802 he published *John Woodvil*, a poetic tragedy. None of these publications brought him much fame or fortune. "The Old Familiar Faces" (1789) remains his best known poem, although "On an Infant Dying as soon as it was born" (1828) is his finest poetic achievement.

In 1807 Lamb and his sister published, at the invitation of William Godwin, *Tales from Shakespear*, a retelling of the plays for children. The next year came a similarly conceived version of the *Odyssey*, called *The Adventures of Ulysses*, and in 1809 *Mrs. Leicester's School*, a collection of stories supposedly told by pupils of a school in Hertfordshire.

Concurrently with these collaborative works, Lamb published *Specimens of English Dramatic Poets Who Lived About the Time of Shakespear*, a selection of scenes, much edited, from the Elizabethan drama. The *Specimens* included some passages of implicit criticism, and Lamb also contributed critical papers on Shakespeare and on Hogarth to Leigh Hunt's *Reflector*. The only lengthy piece of criticism that he undertook, on Wordsworth's *Excursion*, was characteristically "gelded" by William Gifford, editor of the *Quarterly Review*, in which publication it appeared. Lamb's letters, however, contain much of his most perceptive criticism and reveal his personal tastes. The criticism often appears in the form of marginalia, reactions, and responses: brief comments, delicately phrased, but hardly ever argued through.

It was the founding of the *London Magazine* in 1820 that gave birth to "Elia" and to Lamb's greatest achievements in literature. The essays are almost wholly autobiographical (though often he appropriated to himself the experiences of others). Many of the best deal with things half a century past: vistas revealed by an imagination looking back down the experiences of a lifetime. Lamb adopted the pseudonym "Elia" (the name of a fellow clerk) in order to spare the feelings of his elder brother, John, at that time a clerk in the South Sea house, which is the subject of the first essay. The persona of "Elia" predominates in nearly all of the essays. Lamb's style, therefore, is highly personal and mannered, its function being to "create" and delineate this persona, and the writing though sometimes simple is never plain. The essays conjure up, with humour and sometimes with pathos, old acquaintances such as Samuel Salt, recall scenes from childhood and from later life, indulge the author's sense of playfulness and fancy, and avoid only whatever is urgent or disturbing: politics, suffering, sex, religion. The first essays were published separately in 1823; a second series appeared, as *The Last Essays of Elia*, in 1833.

After Lamb's retirement from the India House, a worsening of his sister's condition obliged the pair to move to Edmonton. This

separation from the friends who gave him life and courage did not help his spirits. His tendency to drink too heavily became more pronounced. He died at Edmonton from complications to a wound suffered in a fall. His sister outlived him by 13 years.

The standard edition of the works of Charles and Mary Lamb, edited by E.V. Lucas, appeared in 7 volumes in 1903–05. The best available edition of the letters, edited by Lucas, appeared in 3 volumes in 1935. The standard biography, also by Lucas, was published in 1905 (rev. ed. 1921). There is valuable critical material in *Charles Lamb and his Contemporaries* (1933), by Edmund Blunden, and in *English Literature, 1815–1832* (in vol. 10 of *Oxford History of English Literature*) (1963), by Ian Jack.

·English literature of the 19th century 10:1184b

Lamb, Sir Horace (b. Nov. 27, 1849, Stockport, Eng.—d. Dec. 4, 1934, Cambridge, Cambridgeshire, now amalgamated with Isle of Ely), mathematician who contributed to



Sir Horace Lamb

Walter Stoneman

the field of mathematical physics. In 1872 he was made a fellow and assistant tutor of Trinity College, Cambridge, and three years later he became professor of mathematics at Adelaide University, Australia. He returned to England in 1885 to become professor of mathematics at Victoria University, Lancashire. The recognized authority on hydrodynamics, he wrote the *Mathematical Theory of the Motion of Fluids* (1878) and *Hydrodynamics* (1895); the latter for many years was the standard work on hydrodynamics. His many papers, principally on applied mathematics, detailed his researches on wave propagation, electrical induction, earthquake tremors, and the theory of tides and waves.

Lamb made valuable studies of airflow over aircraft surfaces for the Aeronautical Research Committee from 1921 to 1927. He was made a fellow of the Royal Society of London in 1884 and was knighted in 1931. His other publications include *Infinitesimal Calculus* (1897); *Dynamical Theory of Sound* (1910); *Statics: Including Hydrostatics and Elements of the Theory of Elasticity* (1912); *Dynamics* (1914); and *Higher Mechanics* (1920).

Lamb, Mary Ann (b. Dec. 3, 1764, London —d. May 20, 1847, Edmonton, Middlesex),



Mary Lamb, detail of an oil painting by Francis S. Cary, 1834; in the National Portrait Gallery, London

By courtesy of the National Portrait Gallery, London

sister of Charles Lamb, wrote with him *Tales from Shakespear*.

Subject to periods of violent insanity (in the first of which she fatally stabbed her mother), she was under Charles Lamb's watchful and devoted care during his entire lifetime. Apart from infrequent lapses, she was, for the most part, quite lucid, serving as her brother's hostess, housekeeper, faithful companion, and literary ally.

She wrote 14 of the 20 *Tales from Shakespear* (1807), concentrating her effort on the comedies, and collaborated also on *Poetry for Children* (1808) and *Mrs. Leicester's School* (1809), a book of children's stories. She survived her brother by almost 13 years.

Lamb, Sydney M. (1929–), U.S. linguist. ·stratificational grammatical analysis 10:1004h

Lamb, William, 2nd Viscount Melbourne: see Melbourne, William Lamb, 2nd Viscount.

Lamb, Willis Eugene, Jr. (b. July 12, 1913, Los Angeles), joint winner, with Polykarp Kusch, also of the U.S., of the 1955 Nobel Prize for Physics for experimental work that spurred refinements in the quantum theories of electromagnetic phenomena. He joined the faculty of Columbia University in 1938 and worked in the radiation laboratory there during World War II.

The lines that appear in the spectrum (dispersed light, as by a prism) of hydrogen are not simply single dark lines, as they appear, but actually are composed of many lines that are extremely close together. This hyperfine structure was predicted by the quantum mechanics of the noted English physicist Paul A.M. Dirac, but Lamb applied new methods to measure the lines and found their positions to be slightly different from what had been predicted. This necessitated a revision in the theory to fit the facts.



Willis Lamb, 1955

By courtesy of Stanford University News Service

While a professor of physics at Stanford University, California (1951–56), Lamb devised microwave techniques for examining the hyperfine structure of the spectral lines of helium. In 1956 he became professor of theoretical physics at Oxford University and in 1962 was appointed professor of physics at Yale University.

- electron gyromagnetic ratio measurement 12:307b
- fine structure constant measurement 5:77h
- radio-frequency spectra experiment 17:475c
- subatomic particle research 13:1025c

Lamba, also called NAMBA, Voltaic people of western Africa.

·Togo culture and language 18:472d

Lamba, Central Bantu people of central Africa.

·Zambia population and language 19:1132h; map

Lambadi Gypsies, peoples of the Andhra Pradesh region of India.

·male and female dance roles 17:163d

Lambaesis (Africa): see Lambessa.

Lambakanna dynasty, two ruling families in Ceylon (now Sri Lanka); the first, a Sinhalese family descended from Vasabha, governed the Anurādhapura kingdom in Ceylon from AD 65 to 432; the second Lambakanna dynasty was founded by Mānavamma in 684 and ruled for 400 years.

·Ceylonese Anurādhapura period 4:2f

Lamballe, Marie-Thérèse-Louise de Sa-voie-Carignan, princesse de (b. Sept. 8, 1749, Turin, Piedmont, now in Italy—d. Sept. 3, 1792, Paris), the intimate companion of Queen Marie-Antoinette of France; she was



The Princesse de Lamballe; detail from a portrait by an unknown artist, 18th century; in the Palace of Versailles

Giraudon

murdered by a crowd during the French Revolution for allegedly participating in the Queen's counterrevolutionary intrigues.

The daughter of Prince Louis-Victor de Sa-voie-Carignan, she was married in 1767 to Louis-Alexandre-Stanislas de Bourbon, prince de Lamballe, who died the following year. She went to live at the royal court at Versailles upon the marriage (1770) of the dauphin Louis to Marie-Antoinette, and, by the time Louis ascended the throne as King Louis XVI in 1774, Marie-Antoinette had singled her out as a confidante. The following year she became superintendent of the Queen's household.

In October 1789, several months after the outbreak of the Revolution, Mme Lamballe accompanied the royal family to Paris, where her salon became the meeting place for Marie-Antoinette's secret intrigues with royalist sympathizers of the revolutionary National Assembly. Mme Lamballe was also popularly suspected of abetting the Queen's private dealings with France's Austrian enemies. After the overthrow of the monarchy on Aug. 10, 1792, she was imprisoned with the Queen in the Temple prison but was transferred to La Force prison on August 19. Having refused to take an oath against the monarchy, Mme Lamballe was on September 3 delivered over to the fury of the populace, who cut off her head and carried it on a pike before the windows of the Queen.

A. Sorel's *La Princesse de Lamballe* was published in 1933.

lamb and mutton, flesh of sheep, the term applied depending upon age. Lamb refers to both the sheep before the age of one year and the flesh of such animals; the term yearling mutton may be used to describe the meat of sheep between 12 and 20 months; and mutton refers to the flesh of the mature ram or ewe at least one year old. The meat of sheep six to ten weeks old is usually sold as "baby lamb," and "spring lamb" is from sheep of five to six months. The mild flavour of lamb is preferred in most Western countries; the stronger flavour of mutton is considered desirable in many Near and Far Eastern countries. Milk-fed lamb is especially delicate in flavour. The colour of the lean deepens as the animal grows older. In the lamb it ranges from light

to dark pink; in yearling mutton it is medium pink to light red; in mutton it is light to dark red in colour. The fat, soft and creamy white to pale pink in the lamb, hardens and whitens in older sheep. Bones also harden and whiten, becoming porous in the yearling and extremely hard in the mature animal. In lamb the break joint, the point at which the forefeet are removed, shows smooth, moist, red ridges. In mutton the break joint has become extremely hard, so that the forefeet must be removed at the round joint below.

In the U.S. the carcass may be separated into sides and then divided into wholesale cuts; it may be cut straight across into saddles; or it may be cut into leg, loin, shoulder, breast, and shank. The outer fat covering, or fell, may be removed from the cuts. U.S. quality grades for lamb include prime, choice, good, utility, and cull; mature mutton grades are choice, good, utility, and cull.

·breeding research for meat production 1:343a

·meat processing and packing 11:746a;

illus. 750

·Middle East preparation variations 7:945e

Lambaréné, capital of Moyen-Ogooué région, western Gabon, located on an island in the Ogooué River at a point where the river is more than half a mile (one km) wide. It is a trading and lumbering centre with a steamboat landing, an airport, and road connections to Kango, Ndjolé, and Mouila. Lambaréné is, however, best known for its hospital founded in 1913 by Albert Schweitzer (*q.v.*), the theologian and mission doctor. The Society of Evangelical Missions of Paris first established a mission there in 1876, and Lambaréné became the headquarters of Protestant missions in the former French Equatorial Africa.



Lambaréné on the Ogooué River, Gabon

Agence HOA-GUI

The town is now served by a Protestant mission and teacher training school, a Catholic mission, a mosque, and a government medical centre and secondary school. Major local tribal groups (all speaking the same language) are the Pongoue (Mpongwe), Galoa, Nkomi, Orungu (Orounfou), Jumba (Adjumba), and Ininga (Enenga).

Plantation rubber has been introduced in the area, and petroleum is drilled to the northwest. Lambaréné has a large palm oil factory, and lumber and palm products are sent down the Ogooué to Port-Gentil 100 mi (160 km) west for export. Pop. (1970) 10,385.

0°42' S, 10°13' E

·map, Gabon 7:820

Lambayeque, department of northern Peru, occupies an area of 6,404 sq mi (16,586 sq km) on the arid desert plain that climbs gently eastward to the Andes. Vast irrigation projects have made Lambayeque one of Peru's major agricultural regions, leading in rice production and second in sugarcane. Cotton, fruit, and maize (corn) are also cultivated. Railways connect agricultural areas with the departmental capital of Chiclayo (*q.v.*) and the chief seaports of Pimental and Eten, which are on the Pan-American Highway. Lambayeque was formed as a department in 1874. Pop. (1972 prelim.) 515,363.

·area and population table 14:131

Lambayeque, town, Lambayeque department, northwestern Peru, situated near the coast in the valley of the Río Lambayeque, just north of Chiclayo. It trades in rice, cotton, sugar, corn, cattle and other agricultural products. Pop. (1972 prelim.) 18,167.

6°42' S, 79°55' W

·map, Peru 14:128

·pre-Incan metalwork discoveries 1:843d

lambda, the point of meeting of the sagittal and coronal sutures (immovable unions of two bones) of the skull.

·skeletal landmarks of cranium 16:814b

lambda particle, subatomic particle which decays in 10^{-10} second via weak interaction.

·subatomic particle properties 13:1033a; table 1024

lambda point, the temperature of higher orders of transition such as the temperature at which liquid helium I changes to helium II at about 2.18° K at 1 atmosphere.

·low-temperature phenomena 11:163f

Lambeau, Curly (b. EARL LOUIS LAMBEAU, April 9, 1898, Green Bay, Wis.—d. June 1, 1965, Sturgeon Bay), football coach who had one of the longest and most distinguished careers in the history of the U.S. professional game. A founder of the Green Bay Packers in 1919, he served through 1949 as head coach of the only major team in U.S. professional sports to survive in a small city.

After playing briefly for the University of Notre Dame, Lambeau collaborated with George Calhoun, a Green Bay newspaperman, in organizing a professional football team, which was called the Packers because it received a subsidy from a local meat packing firm. In 1921 the Packers entered the American Professional Football Association, founded on Sept. 17, 1920, and renamed the National Football League (NFL) on June 24, 1922. Lambeau led the team to six NFL championships (1929, 1930, 1931, 1936, 1939, 1944). In addition to coaching and serving as general manager, he played halfback (1919–29) and was noted as a forward passer.

A controversial personage sometimes known as the "Bellicose Belgian," Lambeau was dismissed after the 1949 season in a dispute with the Packers' business management. Subsequently he coached the Chicago Cardinals (1950–51) and the Washington Redskins (1952–54). In 1963 he was elected a charter member of the Professional Football Hall of Fame, Canton, Ohio.

Lambermont, August, Baron (b. March 25, 1819, Dion-le-Val, now in Belgium—d. March 7, 1905, Brussels), statesman who in



Lambermont, detail of an oil painting by Emile Wauters, 1903; in the Musées Royaux des Beaux Arts de Belgique, Brussels

By courtesy of the Musées Royaux des Beaux Arts de Belgique; photograph © ACL, Brussels

1863 helped free Belgium's maritime commerce by negotiating a settlement of the Scheldt Question, the dispute over Dutch control of the maritime commerce of Antwerp, Belgium's main port.

After distinguished service in Spain for the army of Queen Isabella II during the First Carlist War (1833–39), Lambermont returned

to Belgium in 1842 and entered the foreign affairs ministry, where he remained for 63 years. Seeing the importance of developing Belgium's trade, he transferred to the commercial branch of the foreign office; in 1856 he began to work on freeing Belgian commerce on the Scheldt River, Antwerp's only outlet to the sea. His efforts made possible the signing of an international convention at Brussels in July 1863 that ended the remaining Dutch tolls on Antwerp's maritime trade. For that achievement he was made a baron. He was also prominent between 1874 and 1890 at several international conferences dealing with the laws and customs of war and with Central African affairs.

Lambersart, town, Nord département, northern France; it is a northwestern industrial suburb of Lille. Latest census 26,744. 50°39' N, 3°02' E

lambert, unit of luminance (brightness), in the centimetre-gram-second system of physical units. Named for the 18th-century German physicist Johann Heinrich Lambert, it is defined as the brightness of a perfectly diffusing surface that radiates or reflects one lumen per square centimetre. It is used by astronomers as well as physicists and engineers. One lumen is equal to the light emitted in a unit solid angle by a uniform point source of luminous intensity of one candela.

Lambert, Constant (b. Aug. 23, 1905, London—d. Aug. 21, 1951, London), English composer, conductor, and critic who played a leading part in establishing the ballet as an art form in England. Commissioned (1926) by Diaghilev to compose the ballet *Romeo and Juliet*, he became conductor (1929) of the Camargo Society that led to the creation of the Sadler's Wells Ballet, which he then directed until 1947. His works include the ballet *Horoscope* (first produced 1938) and the song cycle *Eight Chinese Songs* (composed 1926). A perspicacious critic, his *Music Ho! A Study of Music in Decline* (1934) is an illuminating study of 20th-century music.

Lambert, Daniel (1770–1809), Englishman famous for his size, had his name used as a synonym for immensity. He weighed 448 pounds in 1793, though leading an active, athletic life and at death weighed 735 pounds.

Lambert, Franz, also known as FRANÇOIS LAMBERT D'AVIGNON (b. 1486, Avignon, Fr.—d. April 18, 1530, Frankenberg, Prussia, now Poland), Protestant convert from Roman Catholicism and leading Reformer in the German province of Hesse. The son of a papal official at Avignon, at 15 he entered the Franciscan monastery there. After 1517 he became an itinerant friar, travelling through France, Italy, and Switzerland. He left his cloister permanently in 1522 after reading some of Martin Luther's writings, although he withheld commitment from both Luther and the Swiss Reformer Huldrych Zwingli (1484–1531).

After a meeting with Luther in Wittenberg, where he had gone to lecture, he returned to Strassburg in 1524 to preach Reformation doctrines to the French-speaking population. There he encountered the Reformer Jakob Sturm, who recommended him to the landgrave Philip of Hesse, the German prince most favourably inclined toward the Reformation. Encouraged by Philip, Lambert drafted *Reformatio ecclesiarum Hassiae* ("The Reformation of the Churches of Hesse"), submitted by Philip to the synod at Homberg (1526). Lambert's document called for democratic principles of congregational representation in church government, by which pastors were to be elected by their congregations. He believed he was expressing Luther's views, including the abolition of bishoprics, but Luther and his adherents pronounced the plan as too democratic, and Philip abandoned it. Nevertheless, Lambert's influence persisted in Hesse, where with Philip's assent the Anabaptists, firm advocates of congregationalism,

were permitted to flourish. In 1527 Philip founded the University of Marburg and recognized Lambert's service by appointing him head of the theological faculty.

Lambert, Johann Heinrich (b. Aug. 26, 1728, Mülhausen, Alsace, now Mulhouse, Fr.—d. Sept. 25, 1777, Berlin), Swiss-German mathematician, astronomer, physicist, and philosopher who provided the first rigorous proof that π (the ratio of a circle's circumference to its diameter) is irrational, meaning it cannot be expressed as the quotient of two integers.

The son of a tailor, Lambert was largely self-educated and early began geometric and astronomical investigations by means of instruments he designed and built himself. He worked for a time as a bookkeeper, secretary, and editor. As a private tutor in 1748, he gained access to a good library, which he utilized for self-improvement until 1759, when he resigned to settle in Augsburg. In 1764 he went to Berlin, where he received the patronage of Frederick the Great. His memoir containing the proof that π is irrational was published in 1768. In 1774 at Berlin, he became editor of *Astronomisches Jahrbuch oder Ephemeriden*, an astronomical almanac.



Johann Lambert, detail of a lithograph by Gottfried Englemann (1788–1839), after a portrait by Pierre-Roch Vignerot (1789–1872)

Archiv für Kunst und Geschichte

Lambert made the first systematic development of hyperbolic functions. He is also responsible for many innovations in the study of heat and light. The *lambert*, a measurement of light intensity, was named in his honour. Among his most important works are *Photometria* (1760), *Die Theorie der Parallellinien* (1766; "The Theory of Parallel Lines"), and *Pyrometrie* (1779). The *Neues Organon* (1764; "New Organon"), his principal philosophical work, contains an analysis of a great variety of questions, among them formal logic, probability, and the principles of science.

·atmospheric convection currents 6:81b

Lambert, John (b. autumn 1619, Calton, West Riding, Yorkshire—d. March 1684, St. Nicholas Isle, off Plymouth, Cornwall), a leading parliamentary general during the English Civil War (1642–51) and the principal architect of the Protectorate, the form of republican government existing in England from 1653 to 1660. Coming from a well-to-do family of gentry, Lambert joined the parliamentary army as a captain at the outbreak of the Civil War between King Charles I and Parliament. He first distinguished himself in encounters with the Royalists at Bradford, Yorkshire, in March 1644, and he fought bravely in the major parliamentary victory at Marston Moor, Yorkshire, in July 1644. A major general at the age of 28, he helped Henry Ireton draw up the "Heads of Proposals," a draft constitution aimed at reconciling the conflicting interests of the army, Parliament, and the King.

At the beginning of the second phase of the



John Lambert, portrait after Robert Walker (1607–c. 1660); in the National Portrait Gallery, London

By courtesy of the National Portrait Gallery, London

Civil War in 1648, Lambert was commander of the troops of northern England. He and Oliver Cromwell routed the Scottish Royalist invaders at Preston, Lancashire, in August 1648, and on March 22, 1649, Lambert captured Pontefract, Yorkshire, the last Royalist stronghold in England.

Second in command under Cromwell during the campaigns against the Royalists in Scotland in 1650 and 1651, Lambert and Cromwell, on Sept. 3, 1651, decisively defeated Charles I's son, Charles II, at Worcester in the final battle of the Civil War.

In succeeding years Lambert played a key role in Cromwell's experimental governments. He persuaded Cromwell to dissolve the "Rump" Parliament in 1653, putting the army firmly in control of the government, and was responsible for drawing up the Instruments of Government under which Cromwell assumed dictatorial powers as Lord Protector of the Commonwealth in 1653. Lambert served on the Council of State and was Cromwell's right-hand man until, in 1657, he outspokenly opposed the proposal that Cromwell be made king. When he refused to swear allegiance to the Protector, Cromwell deprived him of his offices but granted him a substantial annual pension.

After Cromwell's death (September 1658), Lambert gradually returned to politics. He did not openly cooperate with the army officers who deposed Cromwell's son and successor, Richard, in May 1659, but he was one of the most powerful figures in the ensuing power struggle. Although he helped restore the "Rump" Parliament in May 1659, he soon broke with it and dissolved it by force. Shortly thereafter, his army was defeated by the forces of Gen. George Monck, who marched from Scotland to reinstate Parliament. Monck proceeded to restore King Charles I to power (1660), and in June 1662 Lambert was sentenced to death for his part in the Civil War. Granted a reprieve, he spent the rest of his life in prison.

·Cromwell's assumption of power 5:294c

·political and military leadership 3:246a

Lambert, John William, 19th-century U.S. inventor.

·automobile development in U.S. 2:517e; illus.

Lambert conformal projection, a conic projection for making maps and charts in which a cone is, in effect, placed over the Earth with its apex aligned with the geographic North Pole. The cone is so positioned that it cuts into the Earth at one parallel and comes out again at a parallel farther south; both parallels are chosen as standards, or bounds of the area to be charted. Points on the Earth are then projected onto the cone along lines radiating from the centre of the Earth; the

map or chart results when the cone is slit along one side and laid out flat.

- geodetic survey distortion minimization 11:476g
- navigational charts contrast 12:902g

Lambert of Hersfeld (b. 1025—d. c. 1088), chronicler whose *Annales* serve as a highly valuable source for the history of 11th-century Germany.

Educated in Bamberg, he joined the Benedictine convent of Hersfeld in March 1058 and was ordained the following fall, travelling to the Holy Land the same year. He moved to the Abbey of Hasungen in 1077, helping to initiate its acceptance of the reforms of the Benedictines' Cluniac order in 1081.

His *Annales Hersfeldenses* was written around 1077–79, covering the period from creation to 1077. An erudite scholar, he was familiar with and used as historical and rhetorical models the works of the Roman historians Livy, Sallust, and Suetonius. His coverage of the period from Genesis to 1040 is brief, primarily a compilation of other sources; but the events from 1040 to 1077 are highly detailed and based on the annals of the Hersfeld Abbey as well as information from other sources and personal experience. Thus the *Annales* is extremely valuable as a documentation of both ecclesiastical and political developments in 11th-century Germany, particularly on the relations between the state and the papacy (though criticized for its pro-papal bias). The *Annales* (first published in 1525) also is valued for its literary elegance and sophistication and as a primary source on the relations between the Holy Roman emperor Henry IV and Pope Gregory VII.

Lambert of Spoleto (d. Oct. 15, 898, Marengo, Italy), reigned for six years as Holy Roman emperor at the end of the Carolingian period.

Crowned co-emperor with his father, Guy of Spoleto, at a ceremony in Ravenna in 892, Lambert ruled alone after his father's death in 894. The following year Arnulf of Carinthia, king of Germany, invaded Italy and besieged Rome, taking the city in February 896. He was crowned emperor by Pope Formosus, who declared Lambert deposed. Marching on Spoleto, Arnulf was suddenly taken ill and had to return to Germany, leaving Lambert once more in possession of the empire.

A year after Formosus' death in 896, Lambert avenged the Pope's crowning of Arnulf by having Formosus' body exhumed by the new pope, Stephen VI (VII), dressed in his pontifical robes, and tried and convicted in St. Peter's for a variety of crimes. The naked and mutilated body was then flung into a potter's field and eventually thrown into the Tiber. Stephen was assassinated in 897.

In 898 Berengar, marquis of Friuli, Guy of Spoleto's former rival, marched on Pavia. Lambert, who had been hunting near Marengo, south of Milan, counterattacked, defeating Berengar. Returning to Marengo, he was killed, either by assassination or by a fall from his horse.

Lambert's filbert (plant): *see* filbert.

Lambessa, also spelled LAMBÈSE, formerly LAMBAESIS (modern Tazoult), an Algerian village famous for its Roman ruins; it is located in the Batna *département*, 80 mi (128 km) south-southwest of Constantine by road. Its population at the latest census was 4,979 (city), 6,343 (commune). The modern settlement was founded in 1848 by French agriculturalists attracted by the fertile soil. A large convict prison for French political deportees was established there in 1852.

The remains of the Roman town (Lambæsis) and camp include two triumphal arches, temples, an aqueduct, an amphitheatre, baths, and many private houses. The camp of the third legion, charged with defending



Praetorium at Lambessa, Algeria, AD 268

J. Powell, Rome

North Africa, was moved to Lambessa between AD 123 and 129. Its remains, located north of the village, are dominated by a praetorium (commandant's house) dating from AD 268. Lambæsis became a town during the reign of Marcus Aurelius (AD 161–180) and the capital of the Roman province of Numidia under the emperor Septimius Severus (AD 193–211). With the departure of the legion in 392 the town soon declined.

Lambeth, one of the 32 London boroughs constituting Greater London, England, established (April 1, 1965) by the amalgamation of the metropolitan boroughs of Lambeth and Wandsworth (eastern part). The borough, south of the River Thames, includes the districts of Vauxhall (including Kennington) and Brixton, and large parts of Norwood, Clapham, and Streatham.

The origin of "Lambeth" is disputed, but before the Domesday Book (1086; the record of the land survey ordered by William I the Conqueror), "Lambethyhe" and variations are recorded, probably indicating "harbour where lambs are shipped." The community was thinly peopled until the 18th century, the majority of the inhabitants living near the River Thames and earning their livings chiefly by agriculture or on the river. Direct access across the Thames was by ford, horse-ferry, or boat until 1750. From the 17th century onward, growth was rapid as new industries were established, followed by the commercial development of the river frontage.

Today Lambeth is largely residential in character; but administrative and office developments for government (including the main Greater London Council offices) and commercial purposes have also been established. Lambeth is an important traffic centre and includes the huge terminus of Waterloo Station and an extensive Underground (subway) and overground railway network. It is also a growing cultural centre, with the Royal Festival Hall, Queen Elizabeth Hall, the new National Theatre building, and the National Film Theatre. Famous hospitals include St. Thomas's and King's College, both with medical schools.

Lambeth Town Hall is at Brixton Hill. The parish church, St. Mary's, lies alongside Lambeth Palace, the London residence of the Archbishop of Canterbury. Lambeth's water frontage faces the Houses of Parliament and the City of Westminster, to which it is connected by five bridges.

The famous Oval, a cricket ground, is in Lambeth; and there are extensive open spaces, including parts of Clapham, Tooting Bec, and Streatham commons. Pop. (1971 prelim.) 302,616.

51°30' N, 0°07' W

·tin-glazed ceramics manufacture 14:912b

Lambeth Conferences, gatherings of bishops of the Anglican Communion held periodically at Lambeth Palace, the London house of the archbishop of Canterbury, who convenes and presides over them. They are important as a means of expressing united Anglican opinion, but the Anglican Communion has no

central, authoritative government. The bishops meet and deliberate as equals, with the archbishop of Canterbury as host and chairman. The time between conferences has varied, but the normal interval is ten years.

The first conference was held in 1867 as a result of a request from The Anglican Church of Canada. Many English bishops questioned the status and wisdom of the international gathering, although the archbishop of Canterbury, Charles Thomas Longley (1794–1868), carefully explained the limited scope of the deliberations: "We merely purpose to discuss matters of practical interest, and pronounce what we deem expedient in resolutions which may serve as safe guides to future action." He later stated that it was not proposed "that questions of doctrine should be submitted for interpretation in any future Lambeth Conference. . . ." Despite this cautious approach, only 76 of the 144 Anglican bishops attended the first conference. Attitudes changed, however, and, in 1968, 467 bishops attended. The first conference lasted only four days, but the 1958 and 1968 conferences each lasted five weeks.

In 1897 a permanent continuation committee, the Consultative Body of the Lambeth Conference, was established to help prepare the agenda for the conferences. An Advisory Council on Missionary Strategy was established in 1948. At the Lambeth Conference of 1958 it was decided to appoint a bishop to serve as executive officer of the Anglican Communion and to work with these two inter-Anglican organizations. Action taken at the 1968 conference merged the two organizations into the Anglican Consultative Council, with headquarters in London, which carries on the cooperative work of the Anglican Communion between meetings of the Lambeth Conference.

Lambeth Conferences grew steadily in importance and influence and became recognized as very important in the life of the Anglican Communion. They are the primary means of joint consultation for Anglican leaders on a broad scale. In the agenda of the conferences a prominent place is given to relations with other Christian churches. Internal Anglican matters are also regularly discussed as well as theological, social, and international questions. The conferences normally issue an encyclical letter, a series of resolutions, and the reports prepared by committees. The decisions of the conferences have no power over Anglican Churches, which must adopt them by synodical or other constitutional means to make them legally binding. But the fact that all diocesan bishops are invited to the conferences gives their decisions great influence.

·Consultative Body functions 1:889a

·episcopal lack of legislative authority 3:779h

·origins, purposes, and developments 1:888a

Lambeth delftware: *see* Southwark and Lambeth delftware.

Lambeth Quadrilateral, four points that constitute the basis for union discussions of the Anglican Communion with other Christian groups: acceptance of Holy Scripture as the rule of faith; the Apostles' and the Nicene creeds; the sacraments of Baptism and the Lord's Supper; and the historic episcopate. Declared by the General Convention of the Protestant Episcopal Church in Chicago in 1886, they were amended and adopted by the Anglican Communion's Lambeth Conference of 1888. The first three points are widely accepted. The fourth point, episcopacy (church government based on bishops), has been the principal block to union of Anglican and Protestant churches.

Lambeth walk, ballroom dance of the late 1930s, supposedly representing the strut of the Cockney residents of the Lambeth section of London. Adapted from the choreography of the 1937 British musical *Me and My Girl*, the dance was performed with walking steps in march time. Each dancer held his hands free



Lambeth walk
Culver Pictures

at shoulder level, thumbs out. Couples walked side by side or face to face, linked arms to turn, or slapped their knees and shouted "hoy."

·description and British popularity 14:803b

Lambing Flat Riots (1860–61), a wave of anti-Chinese disturbances in the goldfields of New South Wales, Australia, that led to restriction of Chinese immigration. Many white and Chinese miners had flocked to the settlement of Lambing Flat (now called Young) when gold was discovered in the area during the summer of 1860. The first disturbance grew out of a demonstration organized by a white miners' vigilance committee against gambling dens and other centres of vice on Dec. 12, 1860. After venting their rage on these establishments, the miners attacked the Chinese quarter of the settlement, killing several people and wounding many others. Other attacks followed the December incident, causing the Chinese miners to abandon the fields. While the white miners justified their brutality by claiming that the Orientals were squandering the water supply so vital to alluvial prospecting, racism was probably an equally significant factor.

A military detachment restored order at the flat from March until June 1861, and most of the Chinese returned to the settlement. Soon after the departure of the troops, however, a final, devastating riot occurred on June 30. Several thousand miners descended on the Orientals, plundering their dwellings; mounted pursuers overtook the fleeing Chinese and degraded, beat, and robbed them. The authorities returned quickly and restored order. The Lambing Flat Riots led the New South Wales government to pass the Chinese Immigration Act in November 1861, severely limiting the flow of Chinese into the colony.

Lambis (snail): *see* conch.

lambkill (*Kalmia angustifolia*), also called SHEEPKILL or CALFKILL, poisonous plant of the order Ericales.

·Ericales poisonous plants 6:955b

Lamb of God: *see* Agnus Dei.

lam-'bras (Buddhism): *see* Sa-skyapa.

lambrequin, in the decorative arts, an ornamental motif that consists of a jagged or scalloped outline based on drapery, scrollwork, lacework, and the like. As a motif for pottery decoration it is generally thought to have been originated by Edme Poterat in the latter half of the 17th century at Rouen.

·French pottery decoration at Rouen 14:907d
·heraldic arms structure 8:785e; illus.

Lambrus: *see* spider crab.

Lamb shift, in physics, a phenomenon named for U.S. physicist Willis Eugene Lamb,

Jr., who in 1947 measured the separation of the $2^2S_{1/2}$ and $2^2P_{1/2}$ energy levels in the hydrogen spectrum. His measurement contradicted the earlier predictions that these levels should be degenerate (have the same energy) and thus helped to lay the experimental foundation for the development of quantum electrodynamics.

·electron gyromagnetic ratio measurement 12:307b

·radio-frequency spectra properties 17:475d
·subatomic particle research 13:1025c

lamb's lettuce (plant): *see* corn salad.

Lambton, John George, 1st earl of Durham: *see* Durham, John George Lambton, 1st earl of.

Lamb wave, stress wave that is a combination of longitudinal and shear waves travelling inside a very thin medium.

·ultrasonic stress wave behaviour 18:840e

Lam Dong, province (*tinh*) of the central highlands, southern Vietnam. It has an area of 3,835 sq mi (9,933 sq km) and was merged in 1976 with the former province Tuyen Duc. It is bordered by the provinces of Dac Lac (northwest and north), Phu Khanh (east), Thuan Hai (east and south), Dong Nai (southwest), and Song Be (west). Averaging about 3,000 ft (900 m) in elevation, the province consists of two plateaus, the Cao Nguyen Lam Vien to the northeast and the Cao Nguyen Di Linh to the southwest, both of which are basaltic uplands of the Chaine Annamitique (Annamite Mountains; Vietnamese Truong Son). The area was known for big-game hunting during French colonial days. Its mountains and valleys are occupied by several Mon-Khmer-speaking peoples. It is drained principally by the Dong Nai River (Song Dong Nai) and its tributaries, which for some distance form the boundary between the provinces of Lam Dong and Dac Lac to the north. Red soils from decomposed lava support tea, coffee, and rubber plantations. Vegetables and rice are also cultivated. Almost half of the province is forested with bamboo, pine, and cinnamon. At the foot of the northern hills lies the provincial seat, Da Lat (*q.v.*). It is connected by road with Phan Rang on the coast and has an airfield. The Da Nhim (Nhim River) hydroelectric plant, southeast of Da Lat, was begun in the 1960s as part of Japan's post-World War II reparations program. Lien Dam (Bobla) near Da Linh is the site of a scenic waterfall on the Da Riam. Pop. (1979) 396,657.

·area and population table 19:136

Lamé, Gabriel (1795–1870), French mathematician.

·analytic geometry fundamentals 7:1090b
·number theory principles 13:359c

lamed, also transliterated LAMEDH, 12th letter of the Hebrew alphabet.

Lamed Waw, two letters of the Hebrew alphabet, the sum of whose numerical value ($30 + 6$) signifies, according to Jewish tradition, the 36 righteous men who must exist in each generation to guarantee the continued survival of the world. Two groups of 36 are said to be alive at any given time, one for Israel, the other for other lands. Though the sanctity of these men is generally obscured by their simple and humble lives, their vision of the divine Presence is believed to be extraordinarily clear. In times of crisis they come forth to assist their people.

lamella, any thin platelike structure such as one of the plates forming the gills of bivalve mollusks; one of the thin layers around the haversian canals in bone; also a fungal spore in the order Agaricales.

·lizards' toe and clinging ability 16:286d; illus.

lamellar armour, armour constructed of strips made up of numerous narrow plates with their long axis vertical and with adjacent plates overlapping.

·armour style history and use 2:29d; illus. 28

Lamellibrachia barhami, species of marine animal of the phylum Pogonophora.

·characteristics and classification 14:604c

Lamellibranchia, in biology, subclass of the class Bivalvia (phylum Mollusca) containing five orders that include the clams, cockles, mussels, oysters, and scallops (*qq.v.*).

·classification and general features 2:1091d;
illus. 1089

·reproductive system anatomy 15:704b

Lamennais, (Hughes-)Félicité(-Robert de) (b. June 19, 1782, Saint-Malo, Fr.—d. Feb. 27, 1854, Paris), priest and philosophical and political writer who attempted to combine political liberalism with Roman Catholicism after the French Revolution. Born to a bourgeois family whose liberal sympathies



Lamennais, detail from a portrait by Paulin Guerin, 1826; in the Château de Versailles

Cliche Musees Nationaux, Paris

had been chastened by the French Revolution, he and his elder brother, Jean, early conceived the idea of a revival of Roman Catholicism as the key to social regeneration. After Napoleon's restoration of the French Church, the brothers sketched a program of reform in *Réflexions sur l'état de l'église en France pendant le 18^e siècle et sur sa situation actuelle* (1808; "Reflections on the State of the Church in France During the Eighteenth Century and Her Present Situation"). Five years later, at the height of the Emperor's conflict with the papacy, they produced a defense of Ultramontanism (a movement supporting papal prerogatives, in contrast to Gallicanism). Ordained a priest in 1816, Lamennais published in the following year the first volume of his *Essai sur l'indifférence en matière de religion* ("Essay on Indifference Toward Religion"). Appealing to tradition rather than private judgment, it won immediate fame. But his position began to shift. Although he attacked the Gallicanism of the bishops and the monarchy in his book *Des progrès de la révolution et de la guerre contre l'Église* (1829; "On the Progress of the Revolution and the War Against the Church"), the work showed his readiness to combine Roman Catholicism with political liberalism in France.

After the July Revolution in 1830, Lamennais founded *L'Avenir* with Henri Lacordaire, Charles de Montalembert, and a group of enthusiastic liberal Roman Catholic writers. The paper, which advocated democratic principles and church-state separation, antagonized both the church and the state in France and despite its Ultramontanism found little favour in Rome, for Pope Gregory XVI had no wish to assume the revolutionary role designed for him. Publication of the paper was suspended in November 1831, and after a vain appeal to the Pope its principles were condemned in the encyclical *Mirari Vos* (August 1832). He then attacked the papacy and the European monarchs in *Paroles d'un croyant* (1834), provoking the encyclical *Singulari Nos* (July 1834), which led to his severance from the church. He continued to write philosophical and literary works, including *Le Livre du peuple* (1838;

"The Book of the People"), and he served in the constituent assembly after the Revolution of 1848. But his hopes were again defeated when the coup d'état set the seal on Louis-Napoleon's dictatorship. Having refused to be reconciled to the church, Lamennais was buried in a pauper's grave. His life and works are discussed in A.R. Vidler's *Prophecy and Papacy: A Study of Lamennais, the Church and the Revolution* (1954).

- Comte's period of insanity 4:1060e
- Pius IX, Gregory XVI, Ultramontaniam, and the issue of freedom 14:484e
- Sainte-Beuve's religious guidance 16:168f

lamentation, as a theme in Christian art, depiction of the Virgin Mary, St. John the Apostle, St. Mary Magdalene, St. Joseph of Arimathea, and other figures mourning over the body of the dead Christ. The subject has no source in the Gospels or the Apocrypha; it is an imaginary scene that gained popularity with accounts of the meditations of late medieval mystics on the lives of Christ and the Virgin. It was particularly favoured in the West as a predella, or small painting, forming a part of altarpieces depicting the crucifixion.

Generally in representations of the lamentation, the Virgin stands at Christ's head making a dramatic gesture of grief, sometimes throwing herself on his body; St. John comforts her. Grieving at Christ's feet is Mary Magdalene, usually identified with the woman who during his lifetime anointed his feet and wiped them with her hair. St. Joseph and others carry perfumes for the burial, and, usually, mourning angels fly overhead. The art of the Counter-Reformation, in the late 16th century, gave the lamentation a special iconographic significance. In this period the rock on which Christ lies resembles an altar, and Mary stands over him with hands clasped. The emphasis is not on Mary's grief; rather, she stands like a priestess, and the scene is a symbol of the Eucharist, with Christ the sacrifice. In the 17th century, however, the depiction of grief again received dramatic emphasis, with Mary raising her eyes and arms toward heaven as if in protest.

In the Eastern Church the lamentation decorates a special canopy that forms part of the Good Friday service and remains in the church until the Feast of the Ascension.

- Giotto compositional refinement by Fra Angelico 1:870c
- Giotto's style, illus. 8:161



"Lamentation," painting by Fra Angelico, 1436; in the Museo di San Marco, Florence
SCALA/Editorial Photocolor Archives

Lamentations of Jeremiah, Old Testament book belonging to the third section of the biblical canon, known as the Ketuvim (Writings). In the Hebrew Bible, Lamentations stands with Ruth, the Song of Solomon, Ecclesiastes, and Esther and with them makes up the group of five scrolls (*megillot*) that are read on various festivals of the Jewish religious year. Lamentations is the festal scroll of the Ninth of Av, a day commemorating the destruction of the First and Second Temples of Jerusalem.

Most of the Christian English translations of the Bible, following the lead of the later Greek versions and the Latin versions, call the book the Lamentations of Jeremiah, though its title in the Talmud and the Septuagint is simply Lamentations. The content and style, however, argue against Jeremiah's authorship. Each of the first four chapters consists of an acrostic poem. Although the 5th chapter consists of 22 verses, it is not, strictly speaking, an alphabetic acrostic. The poems are independent units, but their mood and content provide a unity to the book as a whole. Because the poems are laments over the destruction of Judah, Jerusalem, and the Temple by the Babylonians in 586 bc, they must be dated during the exile that followed. *Major ref.* 2:928b

- position in Ketuvim canon 2:922b

Lamentations of Jeremiah (1588), vocal music by Palestrina.

- Palestrina's liturgical style 13:932e

Lament for the Destruction of Ur, ancient Sumerian composition bemoaning the collapse of the 3rd Dynasty of Ur (c. 2112–c. 2004 bc) in southern Mesopotamia. The lament, primarily composed of 11 "songs" or stanzas of unequal length, begins by enumerating some of the prominent cities and temples of Sumer and the deities who had deserted them. In the second "song," the people of Ur and other cities of Sumer are urged to set up a bitter lament. The third "song" relates that the goddess Ningal hears the pleas of the people of Ur, but she is not able to dissuade the gods Anu and Enlil from their decision to destroy the city, and the remaining "songs" relate the devastating results of Ur's defeat in battle. The last stanza ends with a plea to Nanna, the husband of Ningal, that the city may once more rise up and that the people of Ur may again present their offerings to him.

Lamentin (Martinique): *see* Le Lamentin.

Laments (1920), translation of TRENY (1580), major poem by the Polish writer Jan Kochanowski.

- literature of the Renaissance 10:1145g

Lamerie, Paul de (b. April 9, 1688, 's Hertogenbosch, Neth.—d. Aug. 1, 1751, London), one of the better known silversmiths of England. His parents were Huguenots who probably left France for religious reasons in the early 1680s and settled in Westminster by 1691.

After serving as an apprentice to a London goldsmith, Pierre Platel, de Lamerie registered his mark and established his own shop in 1712. Early in his career he made simple vessels, such as tankards and teapots, in an unornamented Queen Anne style and more pretentious works, such as a large wine cistern for the first earl of Gower (1719; Minneapolis [Minn.] Institute of Arts), in an ornamented style associated with the work of French Huguenot craftsmen.



Silver Newdegate centrepiece by Paul de Lamerie, 1743; in the Victoria and Albert Museum, London
By courtesy of the Victoria and Albert Museum, London

In the 1730s de Lamerie produced works, particularly covered cups, in his version of the Rococo style. A notable example of 1737 is a cup, the handles of which are in the form of realistic snakes (owned by the Fishmongers' Company, London). A further example of his rich Rococo decoration is a ewer (1741; Goldsmith's Company, London) with a handle in the form of a triton.

Unlike the silversmiths on the Continent, de Lamerie made many uncommissioned works that were intended to be stocked for sale at a later date.

La Mesa, city, San Diego County, southern California, U.S., immediately east of San Diego.

Founded by Robert Allison in 1869 (at the site of artesian springs), it was first known as Allison Springs and served as a construction base for the Cuyamaca Railway. Truck farms and citrus and avocado groves were developed after completion of an irrigation system in 1886. La Mesa is now a retail trade centre, its economy supplemented by light manufacturing. Inc. 1912. Pop. (1950) 10,946; (1970) 39,178; (1980) 50,342.
32°46' N, 117°01' W

Lamesa, city, seat (1876) of Dawson County, northwestern Texas, U.S., on the South Plains, a subdivision of the High Plains. On Sulphur Springs Draw, it is the centre of an agricultural (chiefly cotton) and ranching area.

Industries in Lamesa include petroleum production, the manufacture of clothing, and cottonseed milling. Its name, from the Spanish *la mesa* ("the tableland"), refers to its location at the edge of Cap Rock. It was settled in 1903. Inc. 1917. Pop. (1980) 11,790.

- 32°44' N, 101°57' W
- map, United States 18:908

Lameth, Alexandre (-Théodore-Victor), comte de (b. Oct. 28, 1760, Paris—d. March 18, 1829, Paris), noble who was a leading advocate of constitutional monarchy in the early stages of the French Revolution of 1789. Lameth and his brothers, Charles and Théodore, fought for the colonists in the American Revolution (1775–83). On returning to France, he was appointed colonel of a cavalry regiment (1785).

Lameth was elected a representative for the nobility to the States General that convened



Alexandre, comte de Lameth, engraving by Jean-Baptiste V  rit  , late 18th century
By courtesy of the Biblioth  que Nationale, Paris

on May 5, 1789, but on June 25 he joined the unprivileged Third Estate, which had declared itself a revolutionary National Assembly. He helped draft the Assembly's Declaration of the Rights of Man and of the Citizen (August 1789), and he supported measures abolishing feudalism and restricting the hitherto absolute powers of King Louis XVI. In September, Lameth and his two close associates, Antoine Barnave and Adrien Duport—the "triumvirate"—blocked legislation that would have created a separate legislative chamber for the nobility.

Nevertheless, by the spring of 1791 Lameth and his friends felt that continuation of the Revolution might endanger the monarchy and private property. They then became secret advisers to the royal family, which subsidized their paper, the *Logographe*. Lameth secured legislation excluding "passive citizens" (those who could not meet the property qualification for voting) from membership in the national guard, and he sought to curb the popular press, which was agitating for democratic reforms.

Louis XVI's abortive attempt to flee from France in June 1791, however, discredited the new system of constitutional monarchy. In an attempt to consolidate their forces, Lameth and his associates withdrew from the Jacobin club and formed the Club of the Feuillants. The triumvirs were ineligible to sit in the Legislative Assembly, which convened on Oct. 1, 1791, but they directed the Feuillants of the Assembly in their unsuccessful struggle against the Jacobins.

When France went to war with Austria in April 1792, Lameth became an officer in the Army of the North. He emigrated with the Marquis de Lafayette after the fall of the monarchy on Aug. 10, 1792. Interned for more than three years in Austria, Lameth settled in Hamburg in 1796. After Napoleon came to power in France, Lameth returned to his homeland (1800) and served as a prefect from 1802 until 1815. He was a member of the liberal parliamentary opposition during the reigns of kings Louis XVIII and Charles X.

·Mirabeau's political rivalries 12:269c

La Mettrie, Julien Offroy de (b. Dec. 25, 1709, Saint-Malo, Fr.—d. Nov. 11, 1751, Berlin), physician and philosopher whose Materialistic interpretation of psychic phenomena laid the groundwork for future developments of behaviourism and played an important part in the history of modern Materialism. He obtained a medical degree at Reims, studied medicine in Leiden under Herman Boerhaave (some of whose works he translated into French), and served as surgeon to the French military. A personal illness convinced him that psychic phenomena were directly related to organic changes in the brain and nervous system. The outcry following publication of these views in *Histoire naturelle de l  me* (1745; "Natural History of the Soul") forced his departure from Paris. The book was burned by the public hangman. In Holland La Mettrie published *L'Homme-machine* (1747;

L'Homme Machine: A Study in the Origins of an Idea, 1960), in which he developed more boldly and completely, and with originality, his Materialistic and atheistic views. The ethics of these principles were worked out in *Discours sur le bonheur ou l'anti-S  n  que* ("Discourse on Happiness, or the Anti-Seneca"). He was then forced to leave Holland but was welcomed in Berlin (1748) by Frederick the Great, made court reader, and appointed to the academy of science. In accord with his belief that atheism was the sole road to happiness and sense pleasure the purpose of life (*Le Petit Homme    longue queue*, 1751; "The Small Man in a Long Queue"), he was a care-free hedonist to the end, finally dying of ptomaine poisoning. His collected works, *Oeuvres philosophiques*, were published in 1751, and selections were edited by Marcelle Tisserand in 1954.

·French literature development 10:1171a
·mechanistic theory of personality 6:890b
·psychology of man 15:153c
·sensationalistic Materialism 14:267f

Lamezia Terme, commune, Cantanzaro province, Calabria region, southern Italy. Lamezia Terme was created in 1968 and includes the urban centres of Sant'Eufemia Lamezia, Nicastro, and Sambiasi. Pop. (1981 est.) mun., 62,930.

Lam Giang (river, Laos-Vietnam): see Ca, Song.

Lamia, in classical mythology, a female demon who devoured children. According to late myths she was a queen of Libya, beloved by Zeus. When Hera robbed her of her children, she killed every child she could get into her power. She was also known as a fiend who, in the form of a beautiful woman, enticed young men to her embraces in order that she might devour them. In John Keats's poem "Lamia" (1820), derived from Philostratus' *Life of Apollonius of Tyana* (2nd-3rd century AD), Lamia was a witch who was destroyed by the sage Apollonius.

·Keats's narrative poetry 10:413g

Lamia, city of central Greece in the Sperkh  s Potam  s (river) Valley at the foot of the Oros (mountains) O  thris massif, near the Gulf of Euboea. The capital of the Fthi  tis nom  s (department) and seat of an archbishop of the Greek Orthodox Church, Lamia commands the strategic F  urka Pass leading northwestward into Thessaly (Thessalia).

The original Lamia was founded in the 5th century BC as the centre of the tribes of Malis, a semi-indigenous Dorian people. Upon the decline of Sparta and Thebes in the second half of the 4th century, Lamia passed under the influence of Macedonia and Thessaly; it was besieged by the Second Athenian Confederation during the Lamian War (323-322) in a futile attempt to throw off Macedonian hegemony. In the 3rd century Lamia came under the influence of the expanded Aetolian League, which invited Antiochus III, king of Syria, to Lamia (192); this imprudent gesture provoked the Romans, who destroyed Lamia. In the Middle Ages Lamia was the stronghold of Gipton, belonging to the Frankish dukes of Athens; the succeeding Catalans named it El Cito, and to the Turks it was known as Zituni or Zeytun.

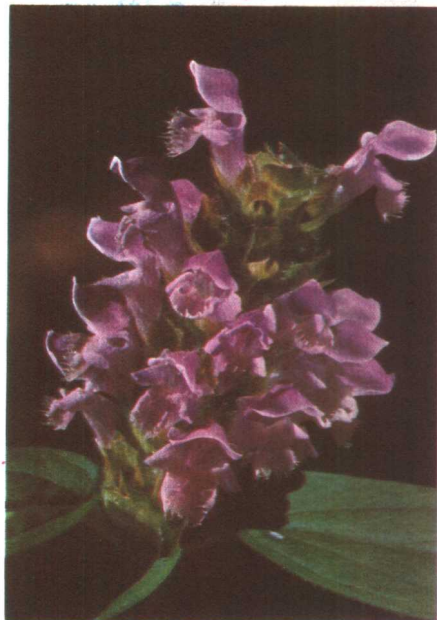
Its industries include soap, cotton textiles, and tobacco processing, and there is trade in wheat, olives, and citrus from the Sperkh  s Valley. It is linked to V  los and Larissa by the Athens-Thessaloniki (Salonika) superhighway; a spur from the Athens-Thessaloniki railways runs to Lamia and its port, Stilis. The area has both iron and manganese deposits. Pop. (1981 prelim.) 42,019.

38  54' N, 22  26' E
·map, Greece 8:314

Lamiaceae, also called LABIATAE, the mint family, with 180 genera and 3,500 species, the largest family of the order Lamiales. It is important to man for herb plants useful for flavour, fragrance, or medicinal properties. Most

members have square stems; paired, opposite, simple leaves; and two-lipped, open-mouthed, tubular corollas (united petals), with five-lobed, bell-like calyxes (united sepals).

Lamium, with 40 to 50 species, comprises the dead nettles, low weedy plants sometimes cultivated. There are about 300 to 400 species of *Thymus*, all Eurasian. Wild thyme (*T. serpyllum*), with scented leaves, is a creeping plant native in Europe but naturalized in eastern North America. Its foliage and flower heads resemble those of garden thyme (*T. vulgaris*), the source of the kitchen herb (see thyme).



(Top) Betony (*Betonica officinalis*), (bottom) self-heal (*Prunella vulgaris*)

(Top) A to Z Botanical Collection—EB Inc., (bottom) Thomas W. Martin—Rapho Guillumette

Among the 100 species of *Phlomis* is Jerusalem sage (*P. tuberosa*), which rises to almost 2 metres (6½ feet); it has clusters of purple flowers. Native to Eurasia, it is naturalized in North America.

Of the 150 tropical species of *Ocimum*, one sacred to Hindus is basil, or *tul  * (*Ocimum basilicum*), native in Africa and Asia but cultivated as a culinary herb (see basil). The genus *Origanum*, native in Europe, includes 15 to 20 species, chief among them being marjoram (*Origanum majorana*, or *Majorana hortensis*; see marjoram).

Famous for its sharp fragrance is rosemary (*Rosmarinus officinalis*), one of three Mediterranean species (see rosemary). Also Mediterranean is lavender (*Lavandula officinalis*), with fragrant blue to lavender flowers in leafless spikes (see lavender).

One of the 40 species of the African genus *Leonotis*, *L. nepetaefolia*, is naturalized

throughout the tropics; it has red-orange globe clusters of blooms in profusion at the top of the one- to two-metre plants. Hyssop (*Hyssopus officinalis*) was once used as a curative herb (see hyssop).

Catnip, or catmint (*Nepeta cataria*), a Eurasian perennial, grows to about one metre and has downy, heart-shaped leaves with an aroma attractive to cats. Betony (*Betonica*, or *Stachys officinalis*) was once regarded as a cure-all, and others of the genus *Stachys*, or the woundworts generally, had supposed value as folk remedies. Self-heal, or heal all (*Prunella vulgaris*), provided another important herbal medicine.

·classification and general features 10:622f

RELATED ENTRIES in the *Ready Reference and Index*:

bugleweed; Coleus; dittany; dragonhead; germander; horehound; Mentha; Monarda; Salvia; shell flower

Lamiales 10:619, plant order containing 4 families, 260 genera, and over 6,000 species, worldwide in distribution. Economically important members of the mint family (Lamiaceae) include scented herbs. Teak and many garden plants belong to the verbena family (Verbenaceae).

The text article covers general features, form and function, natural history, and evolution and includes an annotated classification.

REFERENCE in other text article:

·angiosperm features and classification 1:884b

RELATED ENTRIES in the *Ready Reference and Index*:

for common plants: see bugleweed; chaste tree; dittany; dragonhead; germander; glory-bower; horehound; mint; shell flower

plant families: Lamiaceae; Verbenaceae

plant genera: Coleus; Lantana; Mentha; Monarda; Salvia

Lamian War, also called GREEK WAR (323–322 BC), conflict in which Athenian independence was lost despite efforts by Athens and her Aetolian allies to free themselves from Macedonian domination after the death of Alexander the Great. Athenian democratic leaders, in conjunction with the Aetolian League, fielded an army of 30,000 men in October 323. They seized Thermopylae and kept a Macedonian army under Antipater blockaded in the city of Lamia till the spring of 322, when the arrival of enemy reinforcements from Asia forced them to raise the siege. Outnumbered and deserted by their allies, the Athenians were defeated at the Battle of Crannon (September 322) and surrendered unconditionally. Abandoning Alexander's liberal policy, Antipater forced Athens to accept an oligarchical government subservient to him and had Hyperides and Demosthenes, leaders of the anti-Macedonian party, sentenced to death.

·causes, events, and effects 8:376g

lamina, in botany, the blade of a leaf.

·leaf differential growth 5:666d; illus.

lamina (geology): see stratum.

lamina cribrosa sclerae, the part of the white sheath of the eyeball through which pass axons of the retinal cells.

·structure and function in human eye 7:94d; illus. 93

laminae of vertebra, dorsal, plate-like parts of the vertebra, which meet to form part of the vertebral arch over the spinal cord.

·ligament and joint relationships 10:258d

lamina fusca sclerae, connective tissue connecting the white sheath of the eyeball with the dark inner lining, or choroid.

·structure and function in human eye 7:94e

lamina quadrigemina, plate of white and grey matter from which arise the colliculi of the hindbrain.

·human nervous system, illus. 5 12:1001

laminar flow, type of fluid (gas or liquid) flow in which the fluid travels smoothly or in regular paths, in contrast to turbulent flow, in which the fluid undergoes irregular fluctuations and mixing. In laminar flow, sometimes called streamline flow, the velocity, pressure, and other flow properties at each point in the fluid remain constant. Laminar flow over a horizontal surface may be thought of as consisting of thin layers, or laminae, all parallel to each other. The fluid in contact with the horizontal surface is stationary, but all the other layers slide over each other. A deck of new cards, as a rough analogy, may be made to "flow" laminarily.

Laminar flow in a straight pipe may be considered as a set of concentric cylinders of fluid, the outside one fixed at the pipe wall and the others moving at increasing speeds as the centre of the pipe is approached. Smoke rising in a straight path from a cigarette is undergoing laminar flow. After rising a small distance, the smoke usually changes to turbulent flow, as it eddies and swirls from its regular path.

Laminar flow is common only in cases in which the flow channel is relatively small, the fluid is moving slowly, and its viscosity is relatively high. Oil flow through a thin tube or blood flow through capillaries is laminar. Most other kinds of fluid flow are turbulent except near solid boundaries, where the flow is often laminar, especially in a thin layer just adjacent to the surface.

·airflow mechanics and wind action 19:841d; illus.

·fluidic amplification devices 7:435h; illus.

·fluid mechanics principles 11:788d

·fluvial rates and current patterns 7:438h; illus. 439

·friction factor calculations 18:677d

·groundwater mathematical treatment 8:437h

·heat exchanger convection processes 8:707f

Laminaria (alga): see kelp.

lamina spiralis ossea, or BONY SPIRAL LAMINA, thin plate of bone that spirals with the cochlea of the inner ear, dividing it almost in two.

·structure and function in human ear 5:1123h

laminated plastic, a plastic made of superposed layers of paper, wood, or fabric bonded or impregnated with resin and compressed under heat.

·furniture construction and advantageous uses 7:808e

laminated wood, layers of wood glued or otherwise united with the grains parallel to form boards or timbers.

·arch and truss construction 3:460b

lamination, in technology, the process of building up successive layers of a substance, such as wood or textiles, and bonding them with resin to form a finished product. Laminated board, for example, consists of thin layers of wood bonded together; similarly, laminated fabric consists of two or more layers of cloth joined together with an adhesive, or a layer of fabric bonded to a plastic sheet.

Lamington, Mount, volcano in southeast New Guinea, in the Owen Stanley Range. 8°55' S, 148°10' E

·severity of 1951 eruption 12:1088h

Lamington Plateau, section of the McPherson Range, southeast Queensland, Australia, near the New South Wales border. With an average elevation of 2,000 ft (600 m), it occupies 75 sq mi (194 km). The headwaters of the Nerang, Coomera, Albert, and Kogan rivers rise there. The plateau, named after Baron Lamington (Charles W. Baillie), a former state governor, comprises Lamington National Park, which contains scenic wooded peaks, including Mt. Wanugara (3,925 ft), more than 500 waterfalls, ancient stands of Antarctic beech trees, and rare birds and plants. The area is accessible via the Mt. Lindesay Highway from Brisbane (70 mi [113 km] north). 28°16' S, 153°08' E

laminography, type of X-ray examination in which a thin internal section of a multilayered sample is examined by synchronously rotating the sample and film.

·industrial measurement instrumentation 9:639d

La Mirada, city, Los Angeles County, southwestern California, U.S. The original townsite was Windermere Ranch, part of the Rancho Los Coyotes (an 1834 Spanish land grant). In 1888 the ranch was purchased by Andrew McNally, of Rand McNally and Company, and olives and lemons were cultivated. Residential and light industrial development began after the ranch was subdivided in 1953. Biola College was established in 1949. The community was incorporated in March 1960 as the city of Mirada Hills and was renamed La Mirada (The View) in December. Pop. (1980) 40,986. 33°54' N, 118°01' W

Lamizana, Gen. Sangoule (c. 1916–), political leader in Upper Volta.

·Upper Volta political environment 18:1018g

Lammasch, Heinrich (b. May 21, 1853, Seitenstetten, now Seitenstetten Markt, Austria —d. Jan. 6, 1920, Salzburg), jurist who served briefly as Austrian prime minister during the last weeks of the Habsburg Empire.

As professor of criminal and international law at the University of Vienna, Lammasch achieved an international legal reputation for his work on extradition law and rights of asylum. He was international law adviser for the Austro-Hungarian delegation at the first (1899) and second (1907) Hague peace conferences, and he enjoyed membership in the Permanent Court of Arbitration, The Hague, presiding over its deliberations twice in 1910. During the last years of World War I, as the supporter of a negotiated settlement of hostilities, he incurred strong opposition in the Austrian upper house.

Amid the turmoil of a disintegrating empire, Lammasch, in October 1918, accepted the commission of Emperor Charles to undertake a peaceful liquidation of the affairs of state, presiding over a short-lived Cabinet (October–November 1918). Following the war, as a member of the Austrian delegation at the Paris Peace Conference (1919), he unsuccessfully championed a plan of permanent neutrality for the new Republic of Austria.

·Habsburg Empire's dissolution 2:476c

Lamme (demoness): see Lamashtu.

lammergeier, also spelled LAMMERGEYER or LAMMERGEIR (German: "lamb vulture"), also called BEARDED VULTURE (*Gypaetus barbatus*),



Lammergeier (*Gypaetus barbatus*)

Paul Johnsgard from Root Resources—EB Inc.

big eaglelike vulture of the Old World (family Accipitridae), often over one metre (40 inches) long, with a wingspread of nearly 3 metres (10 feet). Brown above and tawny below, the lammergeier has spots on the breast, black and white stripes on the head, and long bristles on the "chin." Eaglelike features are the feathered face and legs, curved beak, strongly prehensile feet, and long curved claws. The lammergeier inhabits mountainous regions from Central Asia and eastern Africa to Spain. It usually nests on ledges of cliffs, laying one or two whitish eggs about ten centimetres (four inches) in length. It feeds on carrion, especially bones.

·falconiform characteristics compared 7:146e

Lammermuir Hills, range of round-backed, slaty hills, reaching 1,750 ft (533 m), in Scotland. They form the northern boundary of the county of Berwick, south of Edinburgh, the capital city.

55°52' N, 2°40' W

·map, United Kingdom 18:866

Lamming, George William (1927–), West Indian novelist and poet.

·West Indian novel tradition 13:293c

Lamna (shark): see mackerel shark.

Lamniformes, order of sharks of the class Selachii.

·evolution, improved jaw, and classification 7:338a *passim* to 341d; illus.

lamoid, any of the four South American members of the camel family (Camelidae, order Artiodactyla)—the llama, alpaca, guanaco, and vicuña.

Lamoids do not have the characteristic camel humps; they are slender-bodied animals and they have long legs and necks, short tails, small heads, and large, pointed ears. Gregarious animals, they graze on grass and other plants. When annoyed, they spit.

The llama (*Lama glama*) and the alpaca (*L. pacos*) are domestic animals not known to exist in the wild state. They appear to have been domesticated during or before the Inca Indian civilization.

The llama is primarily a pack animal but is also valuable as a source of food, wool, hides, tallow for candles, and dried dung for fuel. The largest of the lamoids, it averages 120 centimetres (47 inches) at the shoulder. The llama can carry 45–60 kilograms (100–130 pounds). When overloaded or exhausted, however, it will lie down, hiss, spit and kick, and refuse to move. Although usually white, the llama may be solid black or brown, or it may be white with black or brown markings. The coarse fleece is inferior to the wool of the alpaca.

The alpaca, standing about 90 centimetres (35 inches) at the shoulder, is kept and bred for its wool, which in the breed known as suri grows long enough to touch the ground. Its coat is usually dark brown or black but may be lighter or white. The wool is lightweight and high in insulation value, useful in parkas, sleeping bags, and fine coat linings. Robes

woven of alpaca wool were formerly worn by Incan royalty. (See alpaca fibre.)

The guanaco (*L. guanacoe*) and the vicuña (*L. vicugna*) are wild lamoids that live in small bands of females, which are usually led by a male. The guanaco ranges from the snow line to sea level throughout the Andes from Peru and Bolivia southward to Tierra del Fuego and other islands. The adult stands about 110 centimetres (43 inches) at the shoulder; it is pale brown above and white below, with a grayish head. Very young guanacos are hunted for their soft coats.

The vicuña, highly valued for its fine wool, inhabits semiarid grasslands in the central Andes, at altitudes of 3,600–4,800 metres (12,000–16,000 feet). A swift, graceful animal, it stands about 80 centimetres (30 inches) at the shoulder. Its fleece, once reserved for Inca Indian royalty, is silky and finer than sheep's wool. The coat is light brown above and whitish below, with a patch of long, pale hair at the base of the neck. The vicuña has been hunted for centuries with a resulting decline in its numbers. It is listed as rare in the *Red Data Book* (q.v.) and is protected in several South American countries.

Lamoids are able to interbreed and to produce fertile offspring. Depending on the authority, the llama, alpaca, and guanaco may be classified as distinct species or as races of *Lama glama*. Because of certain structural features, the vicuña is sometimes separated from the other lamoids as *Vicugna vicugna*.

·alpaca Bolivian habitat and importance 3:5b

·development of agriculture 1:327g

·domesticated animal origins 5:940f

·draft work suitability in the Andean highlands 5:971g

·fibre history and description 7:287a

·fur origin and pelt characteristics

table 7:813

·respiratory adaptation to high altitude 15:763c

·sacramental consumption among

Incas 16:116g

·traits, behaviour, and classification 2:71c

·vicuña protection 17:93h

Lamoignon, French family of lawyers ennobled by tenure of judiciary offices.

Lamoignon, Guillaume I de (1617–77), premier president, or chief magistrate, of the Paris Parlement from 1658, was appointed to head the tribunal trying the former minister Nicolas Fouquet in 1661 but withdrew when he saw that the trial was a matter of politics rather than of justice. He also produced recommendations for the reform of French law (1667–72; printed as *Arrêtés de Lamoignon*, 1702).

Lamoignon de Basville (Bâville), Nicolas de (1648–1724), intendant, or commissioner, of the French king's central government, in Languedoc from 1685 to 1718; was disliked for his savagery against the Huguenots.

La Monnaie, mint building, Paris.

·style and museum 13:1010b; map1005

Lamont, Johann von (b. Dec. 13, 1805, Braemar, Aberdeenshire—d. Aug. 6, 1879, Munich), astronomer noted for discovering that the magnetic field of the Earth fluctuates with a period somewhat in excess of ten years. In 1827 Lamont began working at the Royal Observatory, Bogenhausen, near Munich. He adopted German nationality and worked at Bogenhausen for the rest of his life, as director of the observatory in 1835 and also as professor of astronomy at the University of Munich in 1852. In addition to his other work he determined the orbital data of Saturn's satellites Enceladus and Tethys, the periods of Uranus' satellites Ariel and Titan, and the mass of Uranus. He also cataloged more than 34,000 stars. He established a magnetic observatory at Bogenhausen in 1840 and ten years later discovered the variation in the Earth's magnetic field. In 1862 he discovered the existence of Earth currents, large-scale surges of electrical charge within the Earth's crust that

are associated with ionospheric disturbances. Lamont's most noteworthy work is *Handbuch des Erdmagnetismus* (1849; "Handbook of Terrestrial Magnetism"). He was elected a fellow of the Royal Society of London in 1852.

Lamontagne-Beauregard, Blanche (b. 1889, Les Escoumains, Quebec—d. 1958, Canada), first important woman poet in French Canada. Lamontagne studied literature at the University of Montreal. Her early writing explored historical themes, but she later shifted to regionalism, extolling her homeland, the Gaspé Peninsula, in a robust, emotional style. Her collections of lyric poetry include *Visions Gaspésiennes* (1913; "Views of the Gaspé"), *Par nos champs et nos rives* (1917; "Through Our Fields and Shores"), *Ma Gaspésie* (1928; "My Gaspé"), and *Moisson nouvelle* (1926; "New Harvest").

Lamoricière, Christophe-Louis-Léon Juchault de (b. Feb. 5, 1806, Nantes, Fr.—d. Sept. 11, 1865, Prouzel, Fr.), general and ad-



Lamoricière, lithograph by an unknown artist, c. 1848

By courtesy of the Bibliothèque Nationale, Paris

ministrator noted for his part in the conquest of Algeria and his efforts to make Algeria a productive colony.

Entering the engineers in 1829, Lamoricière was sent to Algiers (1830) as captain in the Zouaves. In 1833 he played a prominent role in the creation of the Arab Bureau, which was to coordinate information on French Arab colonies. Military success at Constantine led to his promotion to colonel (1837) and thereafter he rose rapidly to marshal (1840) and to governor of a division (1843). An efficient and distinguished general, he served as governor general of Algeria during the incumbent's absence in 1845.

In France in 1846, Lamoricière was elected deputy for Sarthe and submitted a plan for free, rather than military, colonization of Algeria. He was concerned that a war of extermination against the Arabs would leave Algeria a barren wasteland instead of a rich and useful colony. He served as minister of war (1848) and was sent to Russia on a diplomatic mission (1850–51) dealing with political, military, and colonial affairs. Opposed to the rising power of Louis-Napoléon, he was arrested (1851) and exiled, but was allowed to return in 1857. In 1860 he led the papal troops against Piedmont, but was defeated at Castelfidardo and returned to France.

La Mothe Le Vayer, François de (b. 1588, Paris—d. 1672, Paris), independent thinker and writer who developed a philosophy of skepticism more radical than that of Michel Montaigne but less absolute than that of Pierre Bayle. He became an *avocat* at the Parlement of Paris, taking over his father's seat, but soon resigned when the attraction of belles lettres became stronger. His work *La Contrariété d'humeur entre la nation française et l'espagnole* (1636; "Conflicts of Interest Between the French and Spanish Nations") and *Considérations sur l'éloquence française* (1638) earned him admission to the Académie



Alpacas (*Lama pacos*)

Nina Leen—Publix

Française in 1639. He was admired by the powerful Cardinal de Richelieu and was tutor to several noble youths, including from 1652 to 1657 Louis XIV, for whom he wrote a complete series of texts. The King rewarded him by appointing him historiographer of France and councillor of state.

His many philosophical works include *De la vertu des païens* (1642; "On the Goodness of the Pagans"); a treatise entitled *Du peu de certitude qu'il y a dans l'histoire* (1668; "On the Lack of Certitude in History"), which



La Mothe Le Vayer, engraving by Jacques Lubin (1637-95)

Graudon

marked a beginning of historical criticism in France; and five skeptical *Dialogues*, published posthumously under the pseudonym Orosius Tubero, which are concerned, respectively, with diversity in opinions, variety in customs of life and sex roles, the value of solitude, the virtue of the fools of his time, and differences in religion.

lamp, a device for producing illumination, originally consisting essentially of a vessel containing a wick soaked in combustible material. The word has subsequently been applied to other light-producing instruments, such as gas and electric lamps. The lamp is to be distinguished from the lantern, which is a cover or protection for various forms of lighting, such as candles, night-lights, oil lamps, and gas and electric appliances.

The lamp was invented in the Earlier Stone Age, at least as early as 70,000 BC. Originally it consisted of a hollowed-out rock filled with moss or some other absorbent material that was soaked with animal fat and ignited. This type of lamp is still used by the Aleuts and Eskimos of Alaska.

In the Mediterranean area and the East, the earliest lamp had a shell shape. Originally, actual shells were used, with sections cut out to provide space for the lighting area; later these were replaced by pottery, alabaster, or metal lamps that conformed to the shape of their natural prototypes. Shell-form pottery lamps are found in many different areas of the world but were especially prevalent in Palestine, Persia, and the islands of the Mediterranean and Adriatic. Another basic type of primitive lamp, found in the ancient kingdoms of Egypt and China, was the saucer lamp, the shape of which is described by its name. Made of pottery or bronze, these were sometimes provided with a spike in the centre of the declivity, to support the wick. Another version had a wick channel, which allowed the burning surface of the wick to hang over the edge. The latter type became common in Africa and, having spread into Eastern Asia, may have crossed the Pacific, as examples of it are found in early archaeological sites in Alaska and New Mexico.

In Greece, lamps did not begin to appear un-



Roman bronze oil lamp with lions and dolphins from the Baths of Julian, Paris, 1st century AD; in the British Museum

By courtesy of the trustees of the British Museum

til the 7th century BC, when they replaced torches and braziers. Indeed, the very word lamp is derived from the Greek *lampas*, meaning a torch. The most common model was originally adapted from Egyptian sources, but, as its domestic use became more widespread, it gradually took on more complex forms. The pottery version was shaped like a shallow cup, with one or more spouts or nozzles in which the wick burned; it had a circular hole in the top for filling and a carrying handle. Such lamps usually were covered with a heat-resisting red or black glaze. A more expensive type was produced in bronze. The standard form had a handle with a ring for the finger and a crescent above for the thumb. Hanging lamps made of bronze also became popular.

The Romans introduced a new system of manufacturing terra-cotta lamps, using two molds and then joining the parts together, a process that stimulated the use of surface ornament and design. In metal, shapes became more complex, sometimes assuming animal or vegetable forms; very large versions for use in circuses and other public places appeared during the 1st century AD.

Very little information is available about medieval lamps, but it would appear that such as existed were of the open, saucer type, and considerably inferior in scientific principle to the closed lamps of the Romans. Generally, medieval lamps seem to have had wicks that floated on buoys of cork or wood; of this type are the red-glass sanctuary lamps, supported in ornamental brass holders, still seen hanging in some churches in front of altars at which the sacrament is reserved. The oil used in these lamps is usually colza. Another liturgical lamp type that has survived from early times is the Jewish Hanukkah lamp, which consists of eight small, spoon-shaped units, backed by a sconcelike panel, and sometimes having a narrow trough as drip catcher beneath. Lamps of this type are also to be found in Indian temples.

The great step forward in the evolution of the lamp occurred in the 18th century with the introduction of a central burner, emerging from a closed container through a metal tube and controllable by means of a ratchet. This coincided with the discovery that the flame produced could be intensified by aeration and a glass chimney. With the drilling of the first well for petroleum oil in 1859, the kerosine lamp (*q.v.*) came into its own.

Gas partly superseded the kerosine lamp, but the devices used for burning it were of necessity static; and the nature of electricity, its successor as a source of domestic lighting, hardly falls within the concept of a lamp in its purely historical sense.

- fluorescence excitation process 11:180d
- luminescence mechanism of mercury lamp 11:182b
- mercury industrial uses 11:922h
- noble gas chemical properties and uses 13:137h
- timekeeping function in 17th century 4:744b

Lampadius, Jacob, 17th-century Brunswick counsellor at the Peace of Westphalia in 1648.

- negotiations at the Peace of Westphalia 18:341a

Lampang, province (*changwat*), northwestern Thailand, located in the forested Khun Tan Range, where it occupies an area of 4,833 sq mi (12,518 sq km). The forests are a source of teak; and mineral products include lignite, antimony, lead, and tungsten. Tobacco, rice, beans, cotton, and sugarcane are grown.

The provincial capital of Lampang (or Lakhon) is a commercial centre located on the Mae Nam Wang (Wang River) and the railroad north from Bangkok. One of Thailand's largest provincial towns, it was once the seat of an independent principality and retains the old walled city as its nucleus. There is a large sugar plant nearby at Ko Kha. The town is connected by air, road, and railway northwest to Chiangmai, and a road leads north to Chiang Rai. Latest pop. est. town, 40,533; (1975 est.) province, 583,378.

·area and population table 18:202

·map, Thailand 18:199

Lampasan Series, division of Pennsylvanian rocks and time in the south central and southwestern U.S., especially Texas (the Pennsylvanian Period, roughly equivalent to the Upper Carboniferous, began about 325,000,000 years ago and lasted about 45,000,000 years). The Lampasan Series is correlated with the Atokan Series (a standard division of the Lower Pennsylvanian in the U.S.), overlies the Bendian Series, and underlies the Strawn Series. Two major divisions of the Lampasan are recognized: the lower Big Spring Group and the Smithwick Group.

lampblack (soot deposit): *see* carbon black.

lampbrush chromosome, in genetics, term used to describe large chromosomes of many amphibian oocyte nuclei. The chromosomes, which have lateral loops that give them a brushlike appearance, have been extensively studied in attempts to determine the mechanism of cellular differentiation.

·gene action and cell differentiation 7:991a

Lampedusa Island, Italian ISOLA DI LAMPEDUSA, largest island (area 8 sq mi [21 sq km]) of the Isole (islands) Pelagie (which include Linosa and Lampione islets), in the Mediterranean Sea between Malta and Tunis, 105 mi southwest of Licata, Sicily. Administratively the group is part of Agrigento province, Sicily, Italy. Lampedusa's greatest length is about 7 mi (11 km), its greatest width about 2 mi; it rises to 436 ft (133 m) above sea level.

The Lopadusa of the Greek geographer Strabo and the Lipadosa of the poet Ludovico Ariosto's *Orlando furioso*, the island has remains of prehistoric hut foundations, Punic tombs, and Roman buildings. In 1436 it was given by Alfonso of Aragon to Don Giovanni de Caro, baron of Montechiaro. A thousand slaves were taken from its population in 1553 by the Turks. In 1661 its then owner, Ferdinand Tommasi, received the title of prince from Charles II of Spain. In 1737 the English earl of Sandwich visited the island and found only one inhabitant. Some French settlers established themselves there in 1760, and in 1843 Ferdinand II of Naples established a colony. After the Allied victory in North Africa in World War II, British and U.S. planes bombed Lampedusa. It surrendered on June 12, 1943, and Linosa and Lampione submitted on June 13.

Lampedusa's soil is calcareous; it was covered with scrub until comparatively recent times, but this has been cut, and the rock is now bare. The poor soil and lack of irrigation has limited the cultivation of figs and olives in the hilly areas. The valleys are fertile, however, and grapes and wheat are grown. Fishing is the economic mainstay of the island, and sardines and anchovies are packaged for export. Coral and sponges are also collected.

The village of Lampedusa, located on the southern part of the island, is the centre of the commune of the same name, which includes

Linosa and Lampedusa. The village has a harbour dredged to a depth of 13 ft. Linosa, about 30 mi north-northeast, has an area of 2 sq mi and is entirely volcanic. It has landing places on the south and west and is more fertile than Lampedusa, but suffers water shortages from lack of springs. Pop. (1971) island, 3,858; (1981 est.) Lampedusa and Linosa mun., 4,700.

35°31' N, 12°35' E

·map, Italy 9:1089

Lampeter, Welsh LLANBEDR PONT STEFFAN, borough, county of Dyfed (until 1974 it was in the former Cardiganshire), Wales, on the River Teifi. In 1187 its castle was destroyed by the Welsh prince Owain Gwynedd. The town's first recorded charter dates from 1282; it has continued to serve as a market town, with a large livestock mart (cattle, sheep, and pigs). St. David's College was founded (1822) mainly to educate clergy, but has become a more broad-based and growing constituent college of the University of Wales. Pop. (1981 prelim.) 1,972.

52°07' N, 4°05' W

·map, United Kingdom 18:867

Lampetia equestris: see hover fly.

Lamphun, of LAMPOON, province (*changwat*) of northwestern Thailand, occupying an area of 1,702 sq mi (4,407 sq km). It was the site of an early Mon kingdom, founded in the 6th century. The kingdom fell to Thai forces in the 13th century with the rise of Chiangmai but retained an autonomous status until the late 19th century. Fluorite is mined and teak is forested in the western mountains. Rice and tobacco are the main crops.

Lamphun, the provincial capital, is an old walled city on the Nam Mae Kuang (Kuang River), east of the Thanon Thong Chai Range. Although located on the Bangkok-Chiangmai railway, it lost its commercial importance to nearby Chiangmai after 1921. Wat Phra Dhat Haripunjaya, built in 1157, is Lamphun's most famous temple; the intricate doors of its sanctuary are covered in gold leaf. Neighbouring Pa Sang produces colourful cotton cloth as a major cottage industry. Pop. (1972 est.) town, 16,833; (1975 est.) province, 310,836.

·area and population table 18:202

Lampman, Archibald (b. Nov. 17, 1861, Morpeth, Ont.—d. Feb. 10, 1899, Ottawa), important Canadian poet of the Confederation group, whose most characteristic work sensitively records the feelings evoked by scenes and incidents of the outdoors.



Lampman, 1891

By courtesy of the Public Archives of Canada

Educated at Trinity College in the University of Toronto, he lived in Ottawa, employed in the post office department of the Canadian civil service, from 1883 until his death. He collaborated with two other Ottawa poets in the writing of a weekly column, "At the Mermaid Inn," in the *Toronto Globe* (1892-93).

Lampman was repelled by the mechanization of urban life and escaped to the countryside whenever possible. Influenced by the craftsmanship and perfection of form of clas-

sical poetry and by the lyrical verse of such English Romantic poets as Wordsworth, Shelley, Tennyson, and Keats, he wrote nature poems celebrating the beauties of Ottawa and its environs and the Gatineau countryside of Quebec.

Among his finest nature poems are "Morning on the Lièvre," "Heat," and "In November." Of the many sonnets that Lampman wrote, a number are admirable—e.g., "Winter Evening," "A January Morning," "Evening," "Solitude," and "The Frogs." Although Lampman was a Socialist and a critic of party politics and organized religion, only a few short poems reflect his radical ideas on politics and economics.

During his lifetime Lampman published two volumes of verse, *Among the Millet and Other Poems* (1888) and *Lyrics of Earth* (1893). After his death, his friend and literary executor, Duncan Campbell Scott, edited *The Poems of Archibald Lampman* (1900) and *Lyrics of Earth: Poems and Ballads* (1925). Several uncollected poems were published in 1943.

·Canadian literature development 10:1230d

Lampoon (Thailand): see Lamphun.

lampoon, virulent satire in prose or verse that is an unjust and malicious attack on an individual. Although the term was coined in the 17th century from the French word *lampoons* ("let us drink"), examples of the lampoon are found as early as the 3rd century BC in the plays of Aristophanes, who lampooned Euripides in *The Frogs* and Socrates in *The Clouds*. In English literature, the form was particularly popular during the Restoration and the 18th century, as exemplified in the lampoons of John Dryden, Thomas Brown, and John Wilkes and in dozens of anonymous satires. The development of libel laws later in the 18th century increased the risk in baseless and scurrilous public attacks.

Lamprecht, Karl Gottfried (b. Feb. 25, 1856, Jessen, Prussian Saxony, now in East Germany—d. May 10, 1915, Leipzig), historian who was one of the first scholars to develop a systematic theory of psychological factors in history.

He studied history, political science, economics, and art at the universities of Göttingen, Leipzig, and Munich (1874-79). In 1878 he completed his doctoral dissertation at Leipzig on the 11th-century French economy. The influence upon him of Jacob Burckhardt's *Civilization of the Renaissance in Italy*, with its emphasis on psychological characteristics of certain historical epochs, appeared in one of Lamprecht's earliest essays, also published in 1878, "Individuality and its Comprehension in the German Middle Ages," which first stated his critique of exterior factual data as the focus of scientific history. In 1879 he tutored in Köln and taught at the Friedrich Wilhelm Gymnasium. His *Initialornamentik* dealt with the psychological implications of 8th- to 13th-century artistic ornamentation and symbolism and provided the core for his later and more elaborated theory.

Lamprecht moved to Bonn (1881), where he jointly established a society for the study of Rhenish history (1883) and a journal on West German history and art (1882) and was appointed professor at the University of Bonn (1885). While he was at Bonn one of his best works, *Deutsches Wirtschaftsleben im Mittelalter* (3 vol., 1885-86; "German Economic Life in the Middle Ages"), appeared. In 1890 he taught at the University of Marburg and a year later was made professor of history at the University of Leipzig.

Lamprecht's master work was the massive *Deutsche Geschichte* (12 vol., 1891-1901; "German History"). It was a major contribution to the development of the Kulturgeschichte (History of Civilization) school in Germany and the centre of a heated controversy over the meaning of "scientific history." While he put special emphasis on economic groups and mass movements in social history,

his principal thesis rested on the contention that history achieves scientific status not through exactitude of detail in particular instances but rather through the achievement of a general and philosophical synthesis arising from the comparative study of collective psychologies in given periods of time. According to Lamprecht, collective psychic characteristics of cultural development had occurred in the following stages: primitive, or "symbolic"; early medieval, "typical"; late medieval, "conventional"; post-Renaissance, "individualist"; romanticist, "subjectivist"; and modern industrial, "nervous tension."

Lamprecht's approach to history provoked great controversy, and he was highly criticized for his reductionist analysis, a priori system, and inadequately documented generalizations. It led, however, to a re-examination of historical methods and to the acceptance of social and cultural history as a legitimate sphere of scholarly research.

lamprey, any of about 22 species of primitive, fishlike vertebrates placed with hagfishes in the class Agnatha. Lampreys belong to the



Lamprey (*Lampetra*) on rainbow trout

Oxford Scientific Films—Bruce Coleman Ltd

family Petromyzonidae. They live in coastal and freshwaters and are found in temperate regions around the world, except in Africa. Eellike, scaleless animals, they range from about 15 to 100 centimetres (6 to 40 inches) long. They have well-developed eyes, one or two dorsal fins, a tail fin, a single nostril on top of the head, and seven gill openings on each side of the body. Like the hagfishes, they lack bones, jaws, and paired fins. The skeleton of a lamprey consists of cartilage; the mouth is a round, sucking aperture provided with horny teeth.

Lampreys begin life as burrowing, freshwater larvae (ammocoetes). At this stage, they are toothless, have rudimentary eyes, and feed on micro-organisms. After several years, they transform into adults and typically move into the sea to begin a parasitic life, attaching to a fish by their mouths and feeding on the blood and tissues of the host. To reproduce, lampreys return to freshwater, build a nest, then spawn (lay their eggs) and die.

Not all lampreys spend time in the sea. Some are landlocked and remain in freshwater. A notable example is the landlocked race *Petromyzon marinus dorsatus* of the sea lamprey. This form entered the Great Lakes of North America and, because of its parasitic habits, had a disastrous killing influence on lake trout and other commercially valuable fishes before control measures were devised. Other lampreys, such as the brook lamprey (*Lampetra planeri*), also spend their entire lives in freshwater. They are non-parasitic, however, and do not feed after becoming adults; instead they reproduce and die.

Lampreys have long been used to some extent as food. They are, however, of no great positive value to man.

·body covering structure 9:668h
·circulatory system anatomy 4:625b
·Devonian fish evolution 5:675h
·digestive tract, illus. 3 7:334
·Great Lakes introduction and effect 2:1047b
·immunological response mechanisms 9:249c

- light intensity response 17:675a
- nervous system evolution 12:990b
- pituitary and thyroid glands 6:848a; illus.
- poisonous animals table 14:617
- reproductive system anatomy 15:707f
- respiratory pumps and gill pouches 15:755a
- traits, behaviour, and classification 1:310b

Lampridiformes, order of fishes containing about 12 families and including the opah (*q.v.*), dealfish, unicorn fish, and oarfish (*q.v.*).
·characteristics and classification 7:344c
·features, evolution, and classification 2:270a; illus. 271

Lamproderma, genus of fungi of the order Stemonitales (division Mycota).
·fruiting stages illus. 16:885

Lampropeltis (genus of snakes): *see* king snake.

lamprophyre, group of dark gray to black intrusive igneous rocks that generally occur as dikes (tabular bodies inserted in fissures). Such rocks are characterized by a porphyritic texture in which large crystals (phenocrysts) of dark, iron-magnesium (mafic) minerals are enclosed in a fine-grained to dense matrix (groundmass). The abundance, large size, well-formed crystal outline, and brilliantly reflecting cleavage faces of the mafic phenocrysts give the rock a striking appearance. Mafic minerals, including biotite, hornblende, augite, or olivine, not only constitute virtually all of the phenocrysts but occur in the groundmass as well, together with much potash feldspar, plagioclase, or feldspathoid.

Petrographically, lamprophyres are set apart from most other igneous rocks by the occurrence of mafics, both as phenocrysts and in the groundmass, by the lack of feldspar phenocrysts, and by the abundance of mafics combined with alkali-rich feldspar. Chemically, the lamprophyres are unique because of their low silica content and a high iron, magnesium, and alkali content. Many varieties have been described and given special rock names. No classification yet satisfactorily accounts for the gradations within the group. The commonest lamprophyres are associated with large masses of granite and diorite. Classic examples occur in the Highlands and southern uplands of Scotland, the Lake District of Ireland, the Vosges, the Black Forest, and the Harz Mountains.

Some lamprophyres have formed by direct crystallization of a lamprophyric magma (molten material). The abundance in some lamprophyres of large, strongly embayed and altered crystals of feldspar and quartz, or fragments of granite, quartzite, schist, and the like, suggests that large quantities of foreign matter may be incorporated and partly digested by basic (silica-poor) magmas.

The presence of corroded and altered mafic phenocrysts indicates that these crystals were not in equilibrium with the enclosing melt and that the phenocryst and groundmass may have had different origins. There is evidence that late alkali-rich fractions of the crystallizing magmas acquired their clusters of mafic crystals before being injected as dikes. Such a mechanism explains the unusual association of abundant mafics with alkali-rich rocks.

Lamprophyres show a strong tendency to weather and decompose. Many have been altered, undoubtedly while the rocks lay some distance beneath the surface. The common alteration products include carbonatite, chlorite, serpentine, and limonite. This highly altered character suggests that some varieties of these rocks have been transformed from more nearly normal basic dike rocks (as diorite). The transformation may have involved late-stage liquids or vapours that escaped from the crystallizing portions of the dike and moved out to attack and change those parts already solidified. Also, fluids or volatiles, escaping from some deeper source and channeled along fractures in the Earth, might react

with the adjacent rock and convert it to dike-like masses of lamprophyre.

- chemical composition 9:219c; table 214
- igneous rock classification 9:207g; table

Lampsacus, an ancient Greek colony, famous for its wines, and the chief seat of the worship of Priapus, a god of procreation and fertility. Colonized in 654 bc by Ionian Phocaea, the city had a fine harbour on the Hellespont. It maintained close relations with Athens during the Ionian revolt against Persia (499) and in the Delian League. Upon the fall of Athens in 405, Lampsacus came under Persian control until Alexander freed it with the rest of Greece during his invasion in 334.

The city, which became the site of one of Alexander's mints, seems to have been prosperous, as indicated by the high tribute it paid to the Delian league.

- war with Chersonese 8:348f; map 326

lamp shell (marine animal): *see* Brachiopoda.

Lampteromyces japonicus, species of fungus of the order Agaricales (phylum Mycota), commonly called moonlight mushroom.
·bioluminescent fungi 2:1031b

Lampyridae (family of beetles): *see* firefly.

Lam-rim (Buddhist writings): *see* gsung-'bum.

Lamtūnah, a Berber people of Morocco.
·Islamic reform movements 9:931e

Lamu Island, island in the Indian Ocean off the East African coast, 150 mi (241 km) north-northeast of Mombasa. It is administered as part of the Coast Province, Kenya. The port of Lamu lies on the southeastern shore of the island. A former Persian, then Zanzibari, colony, Lamu Island rivalled Mombasa until the late 19th century as an entrepôt for gold, spices, and slaves. Pop. (latest census) 9,768.
2°17' S, 40°52' E

- early political predominance struggle 6:93f
- map, Kenya 10:424

Lamut (even) language, minor language of the Manchu-Tungus group of the Altaic language family; with Evenki it comprises the northern, or Tungus, division of the Manchu-Tungus languages. It is spoken by 12,000 persons in eastern Siberia, in the U.S.S.R. *See* Manchu-Tungus languages.

- affiliation and distribution, table 3 1:636
- Soviet Union nationalities distribution, table 3 17:339

Lamuts (peoples): *see* Tungus.

Lanai, island, Maui County, Hawaii, U.S., across the Auau channel from Honolulu. Formed by the extinct volcano Palawai (3,370 ft [1,027 m]), it has an area of 140 sq mi (363 sq km). In 1854 a group of Mormon elders formed a colony there that failed ten years later. Lanai (meaning "hump") was used primarily for cattle grazing until 1922, when it was purchased by the Dole Corporation for use as a pineapple plantation. It is the largest privately owned isle in the Hawaiian chain. The principal settlements are Lanai City and the port of Kaunapali on the west coast. The Luahiwa Petroglyphs, ancient Polynesian inscriptions, are southeast of Lanai City. Pop. (1970) 2,204; (1980) 2,119.
20°50' N, 156°55' W

- map, Hawaii 8:675

Lanai City, city, Lanai Island, Maui County, Hawaii, U.S., located at the foot of Lanai-hale Mountain (3,370 ft [1,027 m]) on a cool central plateau, 1,500 ft above sea level. It is a modern company town, planned in the 1920s by the island's owner, the Dole Corporation. Dole merged in 1961 with Castle & Cooke, Inc., which manages the island as a pineapple plantation. The city is noted for its imported Norfolk Island pines. Pop. (1980) 2,092.
20°50' N, 156°55' W

- map, Hawaii 8:675

Lanao, Lake, western central Mindanao, Philippines.

7°52' N, 124°15' E

- age and fauna peculiarities 1:1032g

Lanao del Norte, province, northern Mindanao, Philippines. Occupying an isthmus between Iligan and Pangasinan bays (north) and Pagadian Bay (south), it has an area of 1,194 sq mi (3,092 sq km) and is drained by the Agus River. Christian settlers from the central Visayas now outnumber Muslims on the coastal lowlands, where the main occupations are farming (coconut, rice, corn), forestry, and fishing. Immigration has been encouraged by the Maria Cristina Falls hydroelectric industrial project and the new settlement areas in the west. Iligan (*q.v.*), the capital, has benefited most from the project. Lala, Kapatagan, and Kolambagan are other important towns, connected by a coastal highway. Pop. (1982 est.) 435,000.

- area and population table 14:236

Lanao del Sur, province (formed 1959), north central Mindanao, Philippines, washed on the southwest by Illana Bay. Its area of 1,495 sq mi (3,873 sq km) encompasses a volcanic plateau dominated by Lake Lanao (134 sq mi), which is drained by the Agus River to the north and fed by the Ramain, Taraka, Lalabuan, Gata, Masui, and Maloig rivers. Mounts Makaturing and Ragang in the south are active volcanoes that last erupted in 1891 and 1916, respectively.

The indigenous peoples, known as Iranons (Dwellers Around the Lake) or Maranao Muslims, were coastal Filipinos who moved inland during the 15th and 16th centuries. Converted to Islām, they periodically raided northern Christian settlements and militantly opposed both Spanish and U.S. regimes until pacified in 1913.

Freshwater and saltwater fishing and farming (rice, corn, coconuts, root crops) are primary economic activities. Marawi (formerly Dansalan), the capital, lies on the north shore of the lake at 3,500 ft (1,100 m) above sea level. Incorporated in 1940 and one of the largest cities in the Philippines inhabited by the Muslims (Moros), it is an important trading centre, noted for Muslim handicrafts, and the seat of Mindanao State University (1961). Camp Keithley, former U.S. military headquarters for Mindanao, is nearby. The towns of Balindong (Watu), Molundo, Bayang, and Poona Bayabao (Gata) cluster around the shore of Lake Lanao. The western sector of the province is crossed by a highway from Marawi to the port of Malabang, on Illana Bay, which serves nearby plantations (copra, abaca, cassava). There is a large resettlement project at Wao in the southeast. Pop. (1982 est.) 597,000.

7°50' N, 124°25' E

- area and population table 14:236

Lanark, often called CLYDESDALE, former county, south central Scotland, roughly coinciding with the basin of the River Clyde. Since the reorganization of 1975, it is largely included in Lanark, Monklands, Motherwell, Hamilton, and East Kilbride (*qq.v.*) districts, of Strathclyde (*q.v.*) region.

In the south of Lanark the Southern Uplands (1,000–2,400 ft [300–730 m]) are dissected by the valley of the Clyde, which rises near the borders of Nithsdale and flows northwestward to its estuary on the west coast. The great Southern Uplands Fault, running from Girvan in Kyle and Carrick district northeastward to Dunbar in East Lothian, passes through the county just south of Lanark (burgh), delimiting the southern edge of the central rift valley of Scotland, a lowland area of softer sedimentary rocks containing valuable coal seams. The Falls of Clyde near Lanark, dropping 250 ft (76 m) in 4 mi (6 km), provide hydroelectricity to replace the water-power they once supplied for the cotton mills. The fertile lowlands have a variety of superfi-