arts and such branches of science as bear upon them was due to Sir D. Brewster, Sir J. Mackintosh, and others ; it was incorporated in 1841, and has published *Transactions* since that year.

The leading provincial societies of Great Britain of a general character are as follows. Aberdeen, *Nat. Hist. Sοc.* (1863), *Trans.; Phil. Sοc.* (1840). Alloa, *Sοc. of Nat. Hist. and Arch.* (1863), *Proc.* (1865, &c.). *Banffshire Field Club and Sc. Soc.* (1880), *Proc.* Bath, *Nat. Hist. and Antiq. Field Club* (1866), *Proc.* (1867, &c.). *Bedfordshire Nat. Hist. Soc.* (1875), *Trans.* Belfast, *Nat. Hist. and Phil. Soc.* (1821), *Proc.* (1852, &c.) ; *Naturalists' Field Club* (1863), *Proc.* (1875, &c.). *Berwickshire Naturalists’ Club* (1831), *Proc.* (1834, &c.). Birkenhead, *Lit. and Sc. Soc.* (1857). Birmingham, *Nat. Hist, and Micr. Soc.* (1858), *Proc.* (1869, &c.) ; *Birmingham and Midland Institute Sc. Soc.* (1870), *Trans.* of archaeological sec­tion (1871, &c.) ; *Phil. Soc.* (1876), has a fund for promotion of original research, *Proc. ; Midland Union of Nat. Hist. Societies* (1877), *Midland Naturalist.* Bolton, *Lit. and Phil. Soc.* (1871). Bradford, *Phil. Soc.* (1865), with various local societies afliliated to it. Brighton, *Brighton and Sussex Nat. Hist. Soc.* (1854), *Ann. Re­ports* (1855, &c.). Bristol, *Museum and Library* (formed by the amalgamation of the *Institution for the Advancement of Sc., Lit., and the Fine* *Arts* with the *Lit. Soc.,* founded 1772) ; *Naturalists' Soc.* (1862), *Proc.* (1866, &c.). Burnley, *Lit. and Sc. Club* (1873), *Trams.* Burton-on-Trent, *Nat. Hist. and Arch. Soc.* (1876). Cambridge, *Phil. Soc.* (1819 ; incorporated 1832), for the promotion of philosophy and natural science, owns museum and library, *Proc.* (1865, &c.), *Trans.* (1821, &c.). Cardiff, *Naturalists’ Soc.* (1867), *Trans.* Chester, *Soc. of Nat. Sc.* (1871), *Proc.* Cork, *Royal Inst.* (1807), library ; *Cuvierian and Arch. Soc.* (1836). *Cornwall Royal Inst.,* at Truro (1818), devoted to natural philosophy, natural history, and antiquities, *Journal* (1864, &c.); *Royal Polytechnic Soc.,* at Falmouth (1833 ; founded by the daughters of R. W. Fox and others), for the encouragement of science and the fine and industrial arts, *Trans.* (1835, &c.). *Cumberland Assoc, for the Advancement of Lit. and Sc.* (1876), provides a means of union for the local scientific societies of Cumberland and Westmoreland, *Trans. Derry Nat. Hist. and Phil. Soc.* (1870). *Devonshire Assoc, for the Advance­ment of Sc.* (1862). *Dorset Nat. Hist. and Antiq. Club* (1875). *Dumfriesshire and Galloway Sc., Nat. Hist., and Antiq. Soc.* (1876), *Trans.* Dundee, *Natu­ralists' Soc.* (1873). Eastbourne, *Nat. Hist. Soc.* (1867), *Proc.* (1869, &c.). *East of Scotland Union of Naturalists' Societies* (1884), *Trans.* Ebbw Vale, *Lit. and Sc. Inst.* (1850), owns laboratory. Elgin, *Elgin and Morayshire Lit. and Sc. Assoc.* (1836). *Essex Field Club* (1880), at Buckhurst Hill, *Trans.* Exeter, *Naturalists' Club and Arch. Assoc.* (1862). Glasgow, *Phil. Soc.* (1802), *Proc.* (1844, &c.) ; *Nat. Hist. Soc.* (1851), *Proc.* (1868, &c.) ; *Soc. of Field Naturalists* (1872), *Trans.* (1872, &c.). Gloucester, *Lit. and Sc. Assoc.* (1838). Greenock, *Phil. Soc.* (1861). Hali­fax, *Phil. and Lit. Soc.* (1830), museum and library. Hereford, *Woolhope Natu­ralists' Field Club, Hereford Pomona and Trans.* (1866, &c.). *Hertfordshire Nat. Hist. Soc. and Field Club,* formed in 1879 from the *Watford Nat. Hist. Soc.* (1875), *Trans.* High Wycombe, *Nat. Hist. Soc.* (1865), *Magazine (1866,* &c.). Hull, *Lit. and Phil. Soc.* (1822), *Trans.* (1824, &c.). Inverness, Sc. Soc. *and Field Club* (1875). *Isle of Wight Phil. and Sc. Soc.* (1850). *Kent (East) Nat. Hist. Soc.,* at Canter­bury (1858), *Trans.* Leeds, *Phil. and Lit. Soc.* (1820); *Naturalists’ Club* (1870), *Trans.* Leicester, *Lit. and Phil. Soc.* (1837), *Trans.* Lewes, *Lewes and East Sussex Nat. Hist. Soc.* (1864). Liverpool, *Lit. and Phil. Soc.* (1812 ; united with *Nat. Hist. Soc.* in 1844), *Proc.* (1845, &c.); *Philomathic Soc.* (1825), *Trans. ; Polytechnic Soc.* (1838), *Journal* (1838, &c.); *Naturalists' Field Club* (1860). Manchester, *Lit. and Phil. Soc.* (1781), two sections, one physical and mathematical, the other for microscopy and natural history,—the original statements respecting the atomic theory were given by Dalton in the *Memoirs* (1789, &c.); *Field Naturalists' and Arch. Soc.* (1860), *Trans.; Scientific Students Assoc.* (1861). Montrose, *Nat. Hist. and Antiq.* Soc. (1836), museum. Newbury, *District Field Club* (1870), *Trans.* (1871, &c.). Newcastle-on-Tyne, *Lit. and Phil. Soc.* (1793), library ; *Northum­berland, Durham, and Newcastle Nat. Hist. Soc.* (1829), a museum (opened in 1884), *Trans.* Norfolk, *Norfolk and Norwich Naturalists' Soc.* (1869), *Trans.* (1870, &c.). Nottingham, *Lit. and Phil. Soc.* (1864). *Orkney Antiq. and Nat. Hist. Soc.* (1837), museum. Oxford, *Ashmolean Soc.* (1828), promotes all branches of practical knowledge. Paisley, *Phil. Institution* (1808), free library and museum ; Mr Coats presented his observatory in 1882. Penzance, *Nat*. *Hist. and Antiq. Soc.* (1839), museum, *Proc.* (1845, &c.). Perth, *Lit. and Antiq. Soc.* (1784) ; *Perth­shire Soc. of Nat. Sc.* (1867), *Proc.* (1869, &c.), *The Scottish Naturalist* (1870, &c.). Plymouth, *Plymouth Inst, and Devon and Cornwall Nat. Hist. Soc.* (1812), museum, art gallery, and library. Richmond, *Richmond and North Riding Naturalists’ Field Club* (1863), *Trans.* Ripon, *Naturalists’ Club and Sc. Assoc.* (1882). Scar­borough, *Phil, and Arch. Soc.* (1831), museum and library. *Severn Valley Natu­ralists Field Club,* at Bridgenorth (1863). Sheffield, *Lit. and Phil. Soc.* (1822). *Shetland Lit. and Sc. Soc.,* at Lerwick (1861). *Shropshire and North Wales Nat. Hist. and Antiq. Soc.* (1835), at Shrewsbury. *Somersetshire Arch. and Nat. Hist. Soc.,* at Taunton (1849), *Proc.* (1851, &c.). Southampton, *Hartley Institution* (founded under bequest of H. R. Hartley in 1859, incorporated 1862), for the promotion of scientific, antiquarian, and Oriental studies and the fine arts, owns a museum and library. *Staffordshire (North) Naturalists' Field Club and Arch. Soc.* (founded as a natural history society in 1865 ; enlarged 1877), holds movable meetings. Stirling, *Nat. Uist. and Arch. Soc.* (1878), *Trans.* Stockport, *Soc. of Naturalists* (1884), *Trans. Suffolk Inst. of Arch. and Nat. Hist.,* at Bury St Edmunds (1848), *Proc.* (1848, &c.), *The East Anglian* (1859, &c.). Swansea, *Royal Institution* (founded 1835 ; incorporated 1883), with a museum and library, promotes natural history and applied science, literature and fine arts, local history and antiquities. Tamworth, *Nat. Hist., Geolog., and Antiq. Soc.* (1871). *Teign Naturalists' Field Club* (1858). Torquay, *Nat. Hist. Soc.* (1844), museum and library. *Tweedside and Kelso Physical and Antiq. Soc.* (1834). Warrington, *Lit. and Phil. Soc.* (founded in 1870 upon the *Micr. Soc.). Warwick­shire Nat. Hist. and Arch. Soc.* (1836), has a library and geological museum ;

*Warwickshire Field Club* (1854). Whitby, *Lit. and Phil,Soc.(1822),* owns a museum.

*Wiltshire Arch. and Nat. Uist. Soc.,* at Devizes (1853), *Wiltshire Magazine* (1853,

&c.). Windsor, *Windsor and Elon Sc. Soc., Trans.* Witney, *Nat. Uist. and Lit. Soc.* (1858). *Yorkshire Phil. Soc.* (1822), the museum in the grounds of St Mary’s Abbey, York, contains a remarkable collection of Roman remains ; *Geolog. and Polytechnic Soc.* (1837), quarterly meetings in various Yorkshire towns ; *Naturalists' Union* of the natural history and scientific societies of the county (founded in 1861 as the *West Riding Consolidated Naturalists' Soc. ;* reorganized in 1876), the *Naturalist* (1876, &c.)

Africa : Cape Town, *South Afr. Phil. Soc., Trails.* (1878, &c.) ; Mauritius, *Roy. Soc. of Arts and Sc., Proc.* (1846, &c.)and *Trans.* (1848, &c.). Canada: Halifax, *Nova Scotian Inst., Proc.* (1863, &c.; 1867, &c.). Montreal, *Nat. Uist. Soc., Cana­dian Naturalist* (1857, &c.). Ottawa, *Lit. and Sc. Soc.* Toronto, *Canadian Inst., Canadian Journal (1852-76), Proc. (1879, &c.).* Winnipeg, *Hist. and Sc. Soc.* West Indies: Kingston, *Roy. Soc. of Arts of Jamaica, Trans.* (1854, &c.). Port of Spain, *Sc. Assoc, of Trinidad, Proc.* (1866, &c.). Australia and New Zealand : Adelaide, *Phil. Soc., Trans.* (1865, &c.); *South Australian Inst.* (1836), library ; *Roy. Soc. of S. Australia.* Auckland, *Auckland Inst.* Brisbane, *Queensland Phil. Soc.* Christchurch, *Phil. Inst.* Hobart Town, *Roy. Soc. of Van Diemen's Land, Papers* (1851, &c.) ; *Roy. Soc. of Tasmania, Monthly Notices* (1869, &c.). Mel­bourne, *Roy. Phil. Soc. of Victoria, Trans.* (1855, &c.) ; *Nat. Hist. Soc.; Zoolog. and Acclim. Soc., Proc.* (1872). Sydney, *Linnean Soc. of N. S. W., Proc.* (1876, Ac.); *Phil. Soc., Trans.* (1862, &c.; 1866, &c.); *Roy. Soc. of N. S. W., Trans.* (1867, &c.). Wellington, *New Zealand Inst., Trans.* (1869, &c.).

United States.—The first scientific society in the United States originated from a *Proposal for Promoting Useful Knowledge among the British Plantations,* issued by Dr Franklin in 1743. In the following year the *American Philo­sophical Society* was founded at Philadelphia, with Thomas Hopkinson as pre­sident and Franklin as secretary. With it was united on 2d January 1769 another Philadelphia society, *The Junto* (1758), the records of which have been preserved. The *American Philosophical Society* is still in vigorous life, and is an exclusively scientific body and the oldest organized society in the United States for the pursuit of philosophical investigation in its broadest sense. It publishes *Transactions (4*to*,* 1771, &c.) and *Proceedings* (8vo, 1840, &c.). Although not a society in the exact sense of the word, the *Smithsonian Institution,* the most important scientific body in America, must not be overlooked. It was founded at Washington by James Lewis Macie, afterwards called Smithson, a natural son of Hugh Smithson, duke of Northumberland. He died in 1829, leaving by will a sum of money which in 1838 amounted to over half a million dollars, “to found at Washington, under the name of the Smithsonian Institu­tion, an establishment for the increase and diffusion of knowledge among men.” The institution was established by Act of Congress in 1838. The endowment has now been increased to half as much again as the original bequest. The National Museum, founded in 1842, the nucleus of which was the nat ural history collections brought home by the Wilkes and other exploring expeditions, was given into the custody of the Smithsonian Institution in 1858. It has since been largely increased and is now particularly rich in the ethnology, zoology, and mineralogy of the United States. The chief function of the institution is to assist scientific research and to act as an organized centre for the exchange of books and specimens with scientific bodies and individuals throughout the whole world. The *Annual Reports* date from 1846 (8vo, 1847, &c.), the *Smith­sonian Contributions to Knowledge* (4to) from 1848, and the *Miscellaneous Collec­tions* from 1856 (8vo, 1862, &c.). The *Proceedings* and *Bulletin* (1875, &c.) of the National Museum are issued under the authority of the Smithsonian Institu­tion, as well as the publications of the Bureau of Ethnology and the *Bulletin* of the *Philosophical Society of Washington.* Second in point of date comes the *American Academy of Arts and Sciences* of Boston, incorporated in 1780 with the object of furthering the study of the antiquities and natural history of the country. Its *Memoirs* (4to, 1785, &c.) and *Proceedings* (8vo, 1848, &c.) are still published. The *Connecticut Academy of Arts and Sciences* was incorporated at New Haven in 1799. At first only devoted to matters connected with the State of Connecticut, it now embraces the whole field of the sciences and useful arts. It has issued *Memoirs* (1810-16), and now publishes *Transactions* (1866, &c.). One of the leading societies in the United States, the *Academy of Natural Sciences* of Philadelphia, founded in 1812 and incorporated in 1817, possesses the best natural history library (35,000 vols.) in the country and one of the largest natural history museums in the world, being especially rich in conchology. It issues a *Journal* (1817, &c.) and *Proceedings* (1843, &c.). The *American Entomo­logical Society* is merged with it. The *Franklin Institute* of the same city, in­corporated in 1824, possesses a library, gives lectures, and issues a *Journal* (1826, &c.)**.** The *Boston Society of Natural History* was founded upon the *Linnean Society* (1814) in 1830 and incorporated in 1831. It possesses a library and a cabinet of specimens. It published the *Boston Journal of Natural History* (8vo, 1837-63), followed by *Memoirs* (4to, 1866, &c.) ; *Proceedings* (1844, &c.) are also issued. The *Lyceum of Natural History,* New York, was incorporated in 1817 and has published *Annals* from 1823 (1824, &c.) and *Proceedings* (1870, &c.). In 1876 the name was changed to *New York Academy of Sciences.* A number of American naturalists and geologists, having held meetings in various cities be­tween 1840 and 1847, resolved themselves at their Boston congress in the latter year into the *American Association for the Advancement of Science,* which was incorporated in 1874. Its object is “by periodical and migratory meetings to promote intercourse between American scientists.” It has published *Proceedings* (1849, &c.). The *National Academy of Science* was incorporated at Washington in 1863 with a view to making the knowledge of specialists available for the service of Government. There are two classes of members, those in mathe­matics and physics and those in natural history. It has issued *Annuals* (Cambridge, 1865, &c.) and *Reports,* as well as *Memoirs* (1866, &c.). The *Academies of Sciences* at San Francisco (1853), St Louis (1856, incorporated 1857), Chicago (1857, incorporated 1865), and Davenport (1867) deserve special mention.

Among the remaining societies of a general scientific character are—*Albany Inst.* (1828), *Trans.* (1830, &c.), *Proc.* (1870, &c.). Ann Arbor, *Sc. Assoc.* (1875). Baltimore, *Maryland Acad. of Sc. and Lit., Trans.* (1837). Buffalo, *Soc. of Nat. Sc.* (1861), *Bulletin* (1873, &c.). Charleston, *Elliot Soc. of Nat. Hist.* (1853), *Proc.* (1855, &c.), *Journal* (4to, 1859, &c.). Cincinnati, *Soc. of Nat. Hist.* (1870), *Proc.* (1876, &c.). Cleveland, *Acad. of Nat. Sc.* (1852), *Annals* and *Proc.* Dubuque, *Iowa Inst. of Sc. and Arts, Trans.* Indianapolis, *Acad. of Sc., Trans.* (1872, &c.). Madison, *Wisconsin Acad. of Sciences, Arts, and Letters* (1870), *Bulletin* (1870, &c.), *Trans.* (1872, &c.). Minneapolis, *Minnesota Acad. of Nat. Sc.* (1873), *Bulletin.* New Orleans, *Acad. of Sc.* (1853), *Proc.* Portland (Maine), *Soc. of Nat. Hist.* (1850), *Proc.* (1862, &c.). Poughkeepsie, *Soc. of Nat. Hist.* (1874), *Proc.* (1874, &c.; 1876, &c.). Rochester, *Acad. of Nat. Sc.* (1881). Salem (Mass.), *Essex County Nat. Hist. Soc.* (1833 ; now merged in the *Essex Institute),* published the *American Naturalist* (1867-68), afterwards issued by the *Peabody Acad. of Science,* as well as *Proc. (1856,* &c.) and *Bulletin* (1869, &c.). Topeka, *Kansas Acad. of Sc.* (1867), holds meetings in various cities, *Trans.* (1872, &c.).

France.—The *Institut de France* (see Institute of France), which includes five separate academies, stands at the head of all French societies. The *Société Philotechnique,* founded in 1795 and recognized as of public usefulness by a de­cree of 11th May 1861, has for its object the encouragement and study of litera­ture, science, and the fine arts. Two public meetings are held annually. The *Annuaire* (1840, &c.) is its literary organ. The *Société d'Encouragement pour l’Industrie Nationale* was founded in 1801 for the amelioration of all branches of French industry, and was recognized by the state in 1824. Prizes and medals are offered. It publishes a *Bulletin.* The *Académie Nationale, Agricole, Manu­facturière, Commerciale* was founded by the duc de Montmorency in 1830, and also offers prizes and medals, and brings out a *Bulletin* (1830, &c.). The *Asso­ciation Française pour l'Avancement des Sciences (1871),* founded on the model of the British Association, holds migratory meetings and publishes *Comptes Rendus.* The scientific congresses whose origin was due to the initiation of M. A. de Caumont have been noticed at the beginning of the article.

The departmental societies are very numerous and active. The chief are the following. Abbeville, *Soc. d’Émulation* (1797), *Mém.* (1797, &c.). Agen, *Soc. d'Agr., Sc., et Arts* (1784), *Recueil* (1804, &c.). Aix, *Acad. des Sc.,* &c. (1829), based on *Soc. des Amis de la Sc.* (1808), *Mém.* (1819, &c.). Alais, *Soc. Sc. et Litt.* (1868), *Bull.* (1868, &c.). Amiens, *Acad.,* based on *Soc. Lilt.* (1746), *Mém.* (1835, &c.) ; *Soc. Linnéenne* (1838), *Mém.* (1866, &c.). Angers, *Soc. Acad. de Maine et Loire* (1857), *Mém.* (1857, &c.) ; *Soc. d'Agr., &c,* (1818), *Mém.* (1831, &c.) ; *Soc. Linn. de M. et L.* (1852), *Annales* (1853, Ac.). Angoulême, *Soc. d'Agr.,* Ac., *de la Charente* (1803), *Annales* (1819, Ac.). Annecy, *Soc. Florimontane* (1851), *Annales* (1851, &c.)and *Rev. Savoisienne* (1860*,* &c.). Apt, *Soc. Litt., Sc., et Art.* (1863), *Annales* (1865, Ac.). Arras, *Acad.*(1738), Mém.(1818, Ac.) and other publications. Autun, *Soc. Éduenne* (1836), *Mém.* (1837, Ac.) and other publications. Auxerre, *Soc. des Sc.* (1847), *Bull.* (1847, &c.). Bar-le-Duc, *Soc. des Lettres,* Ac. (1870), *Mém.* (1871, Ac.). Beauvais, *Soc. Acad.* (1847), *Mém.* (1847, &c.). Besançon, *Acad. des Sc., Ac.* (1752 ; suppressed in 1793 ; re-established 1805), *Séances publ.* (1806, Ac.) ; *Soc. d’Émulation* (1840), *Mém.* (1841, Ac.). Béziers, *Soc. Arch., Sc.,* Ac. (1834),