effect, and the landscape may appear to be flat, as in a picture. To obtain a stereoscopic view of a landscape Von Helmholtz invented the *Telestereoscope,* an instrument which places as it were the point of view of both eyes wide apart. It consists of two mirrors L and R, each of which projects its image upon *l* and *r,* to which the eyes O and *o* are directed. The eyes O and *o* are placed as it were at O1 and *o*1, according to the distance between L and R ; consequently two dissimilar pictures arc obtained ; these are mentally combined, with the result that the landscape is seen like a stereoscopic view.

The principle of the stereoscope was successfully applied by Wenham in 1854 to the construction of the binocular microscope. See Microscope (vol. xvi. p. 272), and also two papers in the *Jour. Roy. Micr. Soc.,* 1884 :—(1) “On the Mode of Vision with Objectives of Wide Aperture,” by Prof. E. Abbe, p. 20 ; and (2) “On the Physiology of Binocular Vision with the Microscope,” by Dr Carpenter, p. 486. Prof. Abbe shows, however, that “oblique vision in the microscope is entirely different from that in ordinary vision, inasmuch as there is no perspective, so that we have no longer the dissimilarity which is the basis of the ordinary stereoscopic effect, but an essentially different mode of dissimilarity between the two pictures.” In the microscope there is no per­spective foreshortening. There is no difference in the outline of an object viewed under the microscope by an axial or by an oblique pencil. There is simply a lateral displacement of the image—an entirely different phenomenon to that which occurs in non-microscopic vision. Thus, whilst the mode of formation of dissimilar pictures in the binocular microscope is different from the production of ordinary stereoscopic pictures, the brain mechanism by which they are so fused as to give rise to sensations of solidity, depth, ∣and perspective is the same. (J. G. M.)

STEREOTYPE. See Typography.

STERLING, a city of the United States, in White- side county, Illinois, on Rock River (a tributary of the Mississippi), 110 miles west of Chicago. Mainly on account of the abundant water-power produced by the natural rapids of the river and a dam 1100 feet long, it has become the seat of the most varied manufacturing industry. An artesian well 1000 feet deep, discharging 18,000 gallons per hour, contributes to the water-supply of the town. The population was 5312 in 1870 and 5087 in 1880. Sterling was laid out in 1836 and incorporated in 1857.

STERLING, John (1806-1844), author, was descended from a family of Scottish origin which had settled in Ireland about the Cromwellian period. His father, Edward Sterling, born at Waterford 27th February 1773, had been called to the Irish bar, but, having fought as a militia captain at Vinegar Hill, afterwards volunteered with his company into the line. On the breaking up of his regiment he went to Scotland, and took to farming at Karnes Castle in Bute, where John, the second son, was born 20th July 1806. In 1810 the family removed to Llanblethian, Glamorganshire, and during his residence there Edward Sterling, under the signature of “Vetus,” contributed a number of letters to the *Times,* which were reprinted in 1812, and a second series in 1814. In the latter year he removed to Paris, but, the escape of Napoleon from Elba in 1815 compelling him to return to England, he took up his permanent residence in London, obtaining a connexion with the *Times* newspaper, and ultimately being promoted editor. Carlyle, who allows him the dubious credit of being one of the best of newspaper editors, represents him as manifesting “ a thoroughly Irish form of character, fire and fervour, vitality of all kinds in genial abundance, but in a much more loquacious, ostentatious, much *louder* style than is freely patronized on this side of the Channel.” His fiery, emphatic, and oracular mode of writing conferred those characteristics on the *Times* which were recognized in the sobriquet of the “ Thunderer.” The frequent changes of the family residence during the early years of young Sterling rendered his education somewhat desul­tory, but on the settlement in London it became more systematic. After studying for one year at the univer­sity of Glasgow, he in 1824 entered Trinity College, Cam­bridge, where he had for tutor Julius Charles Hare. At Cambridge he did not distinguish himself except in the

debates of the union, where, “none,” it was related, “ ever came near him except the late Charles Buller.” He removed to Trinity Hall with the intention of graduating in law, but left the university without taking a degree. During the next four years he resided chiefly in London, employing himself actively in literature. Along with Frederick Maurice he purchased the *Athenaeum* from J. Silk Buckingham, but the enterprise was not a pecuniary success. Through Maurice he became an “assiduous pilgrim ” to the shrine of Coleridge at Hampstead. He also formed an intimacy with the Spanish revolutionist General Torrijos, in whose unfortunate expedition he took an active interest. Shortly after his marriage in 1830, symptoms of pulmonary disease induced him to take up his residence in the island of St Vincent, where he had inherited some property, but after fifteen months he returned to England. After spending some time on the Continent he found his health so much re-established that in June 1834 he accepted a curacy at Hurstmonceaux, where his old tutor Julius Hare was vicar. Acting on the advice of his physician he resigned his clerical duties in the following February, but according to Carlyle ill-health was only the external occasion of his resignation, the primary cause being a partly unconscious divergence from the opinions of the church. Be this as it may, the threaten­ing progress of the insidious disease under which he laboured soon rendered “public life in any professional form ” quite impossible. There remained to him the “ resource of the pen,” but, having to “ live all the rest of his days as in continual flight for his very existence,” his literary achievements were necessarily fragmentary, and cannot be regarded as a criterion of his capabilities. He published in 1833 *Arthur Coningsby,* a novel, which at­tracted little attention, and his *Poems* (1839), the *Election, a Poem* (1841), and *Strafford,* a tragedy, were not more successful. He had, however, established a connexion with *Blackwood’s Magazine,* to which he contributed a variety of papers and several tales, which gave promise that under more favourable conditions he might have “ achieved greatness.” He died at Ventnor 18th September 1844. His father survived him till 1847.

Sterling’s papers were entrusted to the joint care of Thomas Carlyle and Archdeacon Hare, and it was agreed that the selection of his writings for publication and the preparation of a memoir should be undertaken by the latter. *Essays and Tales,* by John Sterling, collected and edited, with a memoir of his life, by Julius Charles Hare, appeared therefore in 1848 in two volumes. So dissatisfied was Carlyle with the memoir, chiefly because it unduly magnified the ecclesiastical side of Sterling’s life, that he resolved to give his own “testimony ” about his friend, and “record clearly” what his “knowledge of him was.” His vivid portraiture of Sterling in the *Life* which appeared in 1851 has perpetuated the memory of Sterling after his writings have ceased to be of interest on their own account.

STERNBERG, a manufacturing town in Moravia, Aus­tria, is situated 9 miles to the north of Olmiitz and 47 miles to the north-east of Brünn. It is the chief seat of the Moravian cotton industry, and it also carries on the manufacture of linen, stockings, liqueurs, sugar, and bricks. Its six suburbs and the surrounding districts are also en­gaged in the textile industry. Fruit, especially cherries, and tobacco are grown in the neighbourhood. The popu­lation in 1880 was 14,243. Sternberg is said to have grown up under the shelter of a castle founded by Yaroslaff of Sternberg on the site of his victory over the Mongols in 1241.

STERNE, Laurence (1713-1768), one of the greatest of English humorists, was the son of an English officer, and great-grandson of an archbishop of York. Nearly all our information about the first forty-six years of his life before he became famous as the author of *Tristram Shandy* is derived from a short memoir jotted down by