2·97 sq. m. It is served by the Atchison, Topeka & Santa Fé, the Chicago, Burlington & Quincy, the Chicago & Alton, the Chicago, Indiana & Southern and the Wabash railways. Streator has a public library and a Chautauqua auditorium. It is in the Vermilion coal region, and clay for brick and tile is abundant in its vicinity. The city’s manufactures include glass, brick, tile, foundry and machine-shop products, &c. In 1905 the factory product was valued at $1,888,894, being 51·4% greater than in 1900. Streator was laid out in 1868, was incorporated as a village in 1870 and was chartered as a city in 1882.

**STREET, GEORGE EDMUND** (1824-1881), English architect, was born at Woodford in Essex on the 20th of June 1824. He was the third son of Thomas Street, solicitor, by his second wife, Maty Anne Millington. George went to school at Mitcham in about 1830, and later to the Camberwell collegiate school, which he left in 1839. For a few months he was in his father’s business in Philpot Lane, but on his father’s death he went to live with his mother and sister at Exeter. There his thoughts first turned to architecture, and in 1841 his mother obtained a place for him as pupil in the office of Mr Owen Carter at Win­chester. Afterwards he worked for five years as an "improver ” with Sir George Gilbert Scott in London. At an early age Street became deeply interested in the principles of Gothic architecture, and devoted an unsparing amount of time and labour to studying and sketching the finest examples of medieval buildings in England and on the Continent. His first com­mission was for the designing of Biscoray Church, Cornwall. In 1849 he took an office of his own. He was a draughtsman of a very high order; his sketches are masterpieces of spirit and brilliant touch. In 1855 he published a very careful and well- illustrated work on *The Brick and Marble Architecture of Northern Italy,* and in 1865 a book on *The Gothic Architecture of Spain,* with very beautiful drawings by his own hand. Street’s personal taste led him in most cases to select for his design the 13th-century Gothic of England or France, his knowledge of which was very great, especially in the skilful use of rich mouldings. By far the majority of the buildings erected by him were for ecclesiastical uses, the chief being the convent of East Grinstead, the theological college at Cuddesden and a very large number of churches, such as St Philip and St James’s at Oxford, St John’s at Torquay, All Saints’ at Clifton, St Saviour’s at Eastbourne, St Margaret’s at Liverpool and St Mary Magdalene, Paddington. His largest works were the nave of Bristol Cathedral, the choir of the cathedral of Christ Church in Dublin, and, above all, the new courts of justice in London. The competition for this was prolonged and much diversity of opinion was expressed. Thus, the judges wanted Street to make the exterior arrangements and Barry the interior, while a special committee of lawyers recommended the designs of Alfred Waterhouse. In June 1868, however, Street was appointed sole architect; but the building was not complete at the time of his death in December 1881. Street was elected an associate of the Royal Academy in 1866, and R.A. in 1871; at the time of his death he was professor of architecture to the Royal Academy, where he had delivered a very interesting course of lectures on the develop­ment of medieval architecture. He was also president of the Royal Institute of British Architects. He was a member of the Royal Academy of Vienna, and in 1878, in reward for drawings sent to the Paris Exhibition, he was made a knight of the Legion of Honour. Street was twice married, first on the 17th of June 1852 to Mariquita, second daughter of Robert Proctor, who died in 1874, and secondly on the 11th of January 1876 to Jessie, second daughter of William Holland, who died in the same year. The architect’s own death, on the 18th of December 1881, was hastened by overwork and professional worries connected with the erection of the law courts. He was buried on the 29th of December in the nave of Westminster Abbey.

**STRELITZ** *(Strjeltsi),* a body of Russian household troops originally raised by the tsar Ivan the Terrible in the middle of the 16th century. They numbered 40,000 to 50,000 infantry, and formed the greater part of the Russian armies in the wars of the 16th and 17th centuries. They were a fierce and ill- disciplined force, individually brave and cruel in war, and almost ungovernable in peace. Their mutinies were frequent and dangerous, and at last, in 1682, an unusually serious out­break led Peter the Great to compass the abolition of the force. The Strelitz were gradually drawn to the western frontier of Russia, and in 1698 they rose in mutiny for the last time. Crushed in battle by Peter’s general, Patrick Gordon, they ceased to exist as a military force, and about 2000 of them who fell into the hands of the tsar were barbarously tortured and put to death.

**STRENGTH OF MATERIALS,** that part of the theory of engineering which deals with the nature and effects of stresses in the parts of engineering structures. Its principal object is to determine the proper size and form of pieces which have to bear given loads, or, conversely, to determine the loads which can be safely applied to pieces whose dimensions and arrange­ment are already given. It also treats of the relation between the applied loads and the changes of form which they cause. The subject comprises experimental investigation of the pro­perties of materials as to strength and elasticity, and mathe­matical discussion of the stresses in ties, struts, beams, shafts and other elements of structures and machines.

*Stress* is the mutual action between two bodies, or between two parts of a body, whereby each of the two exerts a force upon the other. Thus, when a stone lies on the ground there is at the surface of contact a stress, one aspect of which is the force directed downwards with which the stone pushes the ground, and the other aspect is the equal force directed upwards with which the ground pushes the stone. A body is said to be in a state of stress when there is a stress between the two parts which lie on opposite sides of an imaginary surface of section. A pillar or block supporting a weight is in a state of stress because at any cross section the part above the section pushes down against the part below, and the part below pushes up against the part above. A stretched rope is in a state of stress, because at any cross section the part on each side is pulling the part on the other side with a force in the direction of the rope’s length. A plate of metal that is being cut in a shearing machine is in a state of stress, because at the place where it is about to give way the portion of metal on either side of the plane of shear is tending to drag the portion on the other side with a force in that plane.

*Normal and Tangential Stress.—*In a solid body which is in a state of stress the direction of stress at an imaginary surface of division may be normal, oblique or tangential to the surface. When oblique it is conveniently treated as consisting of a normal and a tangential component. Normal stress may be either push (com­pressive stress) or pull (tensile stress). Stress which is tangential to the surface is called shearing stress. Oblique stress may be regarded as so much push or pull along with so much shearing stress. The amount of stress per unit of surface is called the intensity of stress. Stress is said to be uniformly distributed over a surface when each fraction of the area of surface. bears a corresponding fraction of the whole stress. If a stress P is uniformly distributed over a plane surface of area S, the intensity is P/S. If the stress is not uniformly distributed, the intensity at any point is δP∕δS, where δP is the amount of stress on an indefinitely small area δS at the point considered. For practical purposes intensity of stress is usually expressed in tons weight per square inch, pounds weight per square inch, or kilogrammes weight per square millimetre or per square centimetre..

*Simple Longitudinal Stress.—*The simplest possible state of stress is that of a short pillar or block compressed by opposite forces applied at its ends, or that of a stretched rope or other tie. In these cases the stress is wholly in. one direction, that of. the length. These states may be distinguished as simple longitudinal-push and simple longitudinal pull. In them there is no stress on planes parallel to the direction of the applied forces.

*Compound Stress.—*A more complex state of stress occurs if the block is compressed or extended by. forces applied to a pair of oppo­site sides, as well as. by forces applied to its ends—that is to say, if two simple longitudinal stresses in different directions act together. A still more complex state occurs if a third stress be applied to the remaining pair of sides. It may be shown (see Elasticity) that any state of stress which can possibly exist at any point of a body may be produced by the joint action of three simple pull or push stresses in three suitably chosen directions at right angles to each