TUCKER, Josiah (1711-1799), dean of Gloucester from 1758, a sagacious and candid writer on politics and political economy. See Political Economy (vol. xix. p. 365).

TUCSON, a city in Pima county, Arizona Territory, United States, is situated in 32° 13' N. lat. and 110° 53' W. long. at an elevation of 2403 feet above the sea, upon the Santa Cruz river and on the Southern Pacific Railroad, about 70 miles from the Mexican frontier. The surround­ing country is arid and barren, except where it has been fertilized by irrigation. The climate is exceedingly hot and dry. The principal industries of Tucson, besides stock­rearing, are connected with mining, as it is a supply point for mining districts in the neighbouring mountains and has several smelting works. The population, which in 1860 was 915, in 1870 3224, had grown by 1880 to 7007, and in 1887 was estimated to number nearly 10,000. About one-half are of foreign birth, a large proportion being Mexicans. Tucson is one of the oldest settlements in the United States, having been founded as a Jesuit mission by the Spaniards in the 17th century.

TUCUMAN, or, more fully, San Miguel de Tucuman, capital of the province of Tucuman, in the Argentine Re­public, is a straggling town, on the right bank of the Tala (a subtributary of the Rio Salado), at the eastern base of the Sierra de Aconquija, in 26° 50' S. lat. and 64° 35' W. long. It is connected by rail with Cordova and Rosario. The surrounding district is fertile, and also produces excel­lent timber. Leather and sugar are the principal objects of industry. The population was recently estimated at 17,000.

TUDELA, a city of Spain, in the province of Navarre, is situated on the right bank of the Ebro where it is joined by the Queyles, and on the railway from Zaragoza to Pamplona, about 50 miles to the north-west of the former city. The Ebro is here crossed by a fine old bridge, 400 yards in length, consisting of seventeen arches. The only building within the town of any interest is the fine church of Santa Maria, founded in 1135 and consecrated in 1188, the doorways and cloisters being specially rich in sculptural ornamentation. The manufactures of the place (cloth, silk, pottery) are unimportant. There is some trade in ■wine and oil. The population within the municipal boundaries in 1877 was 10,086.

Tudela, anciently *Tutela,* was the birthplace of the celebrated mediæval traveller Benjamin (*q.v.)* of Tudela. It was made an episcopal see in 1783, which was suppressed in 1851.

TUDOR, House of. See Henry VII. and Lancaster, House of, vol. xiv. p. 257.

TUKE, Samuel (1784-1857), English philanthropist, son of Henry Tuke, born at York in 1784, greatly advanced the cause of the amelioration of the condition of the in­sane, and devoted himself largely to the York Retreat, the methods of treatment pursued in which he made more widely known by his *Description of the Retreat near York, &*c. (York, 1813). His writings on the construction of asylums and on other subjects connected with the insane are well known. He died in 1857.

TUKE, William (1732-1822), English philanthropist, was born at York in 1732. He devoted himself to many philanthropic objects, but his name is more especially known in connexion with the humane treatment of the insane, for whose care he projected in 1792 the Retreat at York, which became famous both abroad and in Great Britain as an institution in which a bold attempt was made to manage lunatics without the excessive restraints then regarded as essential. Not less remarkable was the departure from the beaten track of treatment in regard to copious bleedings and the frequent administration of emetics and depressing remedies. The asylum was entirely under the management of the Society of Friends, and remains so at the present time, but there are a large number of inmates not connected in any way with this body. The original character of the methods pursued at the Retreat attracted much attention, and its marked suc­cess led to comparisons being made between it and other establishments, the abuses in some of which became so notorious as to be brought under the notice of parliament, and led to more stringent legislation in the interests of the insane. The condition of this unfortunate class became greatly improved in consequence. William Tuke did not live to see the most important of the Acts passed, but when he died, in 1822, the superiority of the treatment adopted at the Retreat was fully acknowledged.

See *Report of the Select Committee of the House of Commons,* 1815- 1816 ; Dr Conolly, *Treatment of the Insane without Mechanical Restraints,* 1856 ; Dr Hack Tuke, *Chapters in the History of the Insane in the British Isles,* 1882.

Henry Tuke (1756-1814), son of the preceding and father of Samuel Tuke, co-operated with his father in the reform at the York Retreat. He was the author of several moral and theological treatises, which have been translated into German and French.

TULA, a government of central Russia, bounded by Moscow on the N., Ryazan on the E., Tamboff and Orel on the S., and Kaluga on the W., has an area of 11,950 square miles. It is intersected from south-west to north­east by a gently undulating plateau, from 950 to 1020 feet in height, which separates the drainage area of the Oka from that of the Don. The average elevation of Tula is about 800 feet, and its surface is an undulating plain ; but the rivers flow in valleys so deeply cut and so scored with ravines that in their neighbourhood the country assumes the aspect of a hilly region. Devonian limestones, dolomites, and sandstones appear chiefly in the south-west ; Lower and Middle Carboniferous limestones and clays occupy the remainder of the area. The former contain deposits of coal, which are now worked (chiefly at Malevka and Novoselsk) to the extent of nearly one and a half million cwts. annually. Jurassic clays are found in patches here and there. Glacial boulder clay covers most of the region, while Lacustrine deposits are widely spread in the valleys and depressions. Iron-ore is found all over the government ; limestone, fire-clay, and pottery clay are also obtained. The soil is black earth in the south and east and clay or sandy clay in the north-west. Tula is watered chiefly by the Oka and its tributaries (Upa, Zusha, Osetr, and Pronya). The Don rises in Lake Ivan-Ozero (which feeds also a tributary of the Oka), and has a course of 35 miles within Tula. It is not navigable, and Peter I.’s attempt to connect it with the Oka by means of a canal was never carried out. Lakes and marshes (chiefly in the north-west) are few. Forests (8 per cent. of the area) are rapidly disappearing. The climate is less rigorous than that of Moscow, the average yearly temperature being 40°∙2 Fahr. (January, 13°·8; July, 67°∙5).

The flora of Tula deserves some attention as marking the trans­ition from that of the south-east steppes to that of north-west Russia. A line drawn on the northern slope of the water-parting already mentioned (a few miles to the south of the city of Tula) divides the province into two parts, of which the southern is a black earth region and the other is chiefly covered with boulder clay. The boundary is marked by a series of crown forests— formerly a means of defence against the nomad tribes, whence their name Zasyeka—which at the same time constitute a line that is not passed by several species characteristic of the steppe region, such as the *Lilia* of the steppes, *Lilium Martagon, Linum flavum, Lathyrus pisiformis, Geranium sanguineum, Pyrethrum corym- bosum,* and *Serratula heterophylla.* On the other hand, several northern species, which are quite common in the marshes of Mos­cow, do not penetrate into Tula, and several others, such as *Linnæa borealis, Viola palustris, Cirsium palustre, Pedicularis palustris,* do not cross the Zasyeka. The same forests shelter several northern species which do not appear either in northern or southern Tula, as also several southern herbaceous plants which are now only occasionally met with in the black earth steppes of south Russia. Several West-European plants (*Sanicula europæa, Carex remota,*