was promoted lieutenant-colonel in 1826, and died in London on the 17th of November 1835.

TODAS, a small pastoral tribe of Southern India, found only on the Nilgiri hills. They are distinguished by their tall, well- proportioned figures, aquiline noses, long, black, wavy hair and full beards. Their colour is a light brown. Their dress con­sists of a single cloth, which they wear like the plaid of a Scotch highlander. The women cover the whole body with this mantle. Their sole occupation is cattle-herding and dairy-work. They practise polyandry, a woman marrying all the brothers of a family. Ί he proportion of females to males is about three to five. Their language is a mixture of Tamil and Kanarese, and is classified by Bishop Caldwell as a separate language of the Dravidian family. The Todas worship their dairy-buffaloes, but they have a whole pantheon of other gods. The only purely religious ceremony they have is Kona Shastra, the annual sacrifice of a male buffalo calf. Toda villages, called *mands,* usually consist of five buildings or huts, three of which are used as dwellings, one as a dairy and the other for sheltering the calves at night. These huts are of an oval, pent-shaped construction usually 10 ft. high, 18 ft. long and 9 ft. broad. They are built of bamboo fastened with rattan and thatched. Each hut is enclosed within a wall of loose stones. The inhabitants of a *mand* are generally related and consider themselves one family. The Todas numbered 807 in 1901.

See W. H. R. Rivers, *The Todas* (1906).

TODHUNTER, ISAAC (1820-1884), English mathematician, son of George Todhunter, a Nonconformist minister, was born at Rye on the 23rd of November 1820. He was educated at Hastings, at which town his mother had opened a school after the death of his father in 1826. He became an assistant master at a school at Peckham, attending at the same time evening classes at the University College, London. In 1842 he obtained a mathematical scholarship and graduated as B.A. at London University, and was awarded the gold medal on the Μ.A. examination. About this time he became mathematical master at a school at Wimbledon. In 1844 he entered St John’s Col­lege, Cambridge, where he was senior -wrangler in 1848, and gained the first Smith’s prize and the Burney prize; and in 1849 he was elected to a fellowship, and began his life of college lecturer and private tutor. In 1862 he was made a fellow of the Royal Society, and in 1865 a member of the Mathematical Society of London. In 1871 he gained the Adams prize and was elected to the council of the Royal Society. He was elected honorary fellow of St John’s in 1874, having resigned his fellowship on his marriage in 1864. In 1880 his eyesight began to fail, and shortly afterwards he was attacked with paralysis. He died at Cambridge on the ist of March 1884.

Works.—*Treatise on the Differential Calculus and, the Elements of the Integral Calculus* (1852, 6th ed., 1873), *Treatise on Analytical -Statics* u853,4th ed., 1874); *Treatise on the Integral Calculus* (1857, 4th ed., 1874); *Treatise on Algebra* (1858, 6th ed., 1871); *Treatise on Plane Coordinate Geometry* (1858, 3rd ed., 1861); *Plane Trigo­nometry* (1859,4th ed., 1869) ; *Spherical Trigonometry* (1859) ; *History of the. Calculus of Variations* (1861); *Theory of Equations* (1861, 2nd ed. 1875); *Examples of Analytical Geometry of Three Dimensions* (1858, 3rd ed., 1873); *Mechanics* (1867), *History of the Mathematical Theory of Probability from the Time of Pascal to that of Lagrange* (1865); *Researches in the Calculus of Variations* (1871); *History of the Mathematical Theories of Attraction and Figure of the Earth from Newton to Laplace* (1873); *Elementary Treatise on Laplace's, Lamé’s and Bessel’s Functions* (1875); *Natural Philosophy for Beginners* (1877). An unfinished work, 7‰ *History of the Theory of Elasticity,* was edited and published posthumously in 1886 by Karl Pearson. Todhunter also published keys to the problems in his textbooks on algebra and trigonometry; and a biographical work, *William Whewell, account of his writings and correspondence* (1876), in addition to many original papers in scientific journals.

See obituary notices in the *Proc. Lond. Math. Soc.* (1884), and *Proc. Roy. Soc.* (1884).

TODI (anc. *Tuder),* a town and episcopal see of the province of Perugia, Italy, 28 m. S. of Perugia by road, on a steep hill above the east bank of the Tiber, 1348 ft. above sea-level, and 866 ft. above the river. Pop. (1901), 3599 (town), 16,528 (commune). Some portions of the ancient town walls—of two enceintes, an inner and an outer, the former attributed to the original Umbrian inhabitants, the latter to the Romans—are preserved, and also remains of baths, amphitheatre, theatre, and a substruction wall of massive masonry, with four niches. Here was found the bronze statue of Mars, now in the Vatican, so that the building is sometimes erroneously called the temple of Mars. Beneath the cathedral square, at the highest point of the town, is a large reservoir. The Romanesque cathedral has a simple façade (partly of the ιxth, partly of the 14th and 15th centuries), with a fine portal and rose window. In the same square is the massive Romanesque Gothic Palazzo Comunale of 1267, the Palazzo dei Priori and the Palazzo della Podesta. The Gothic church of S. Fortunato, with its nave and aisles of the same height, has a splendid portal; the upper part of the façade is unfinished. Both this church and the cathedral have good choir-stalls.

Just outside the town on the west is the pilgrimage church of S. Maria della Consolazione, one of the finest buildings of the Renaissance, and often wrongly attributed to Bramante. Con­temporary documents prove that the interior was begun in 1508 by Cola Matteuccio da Caprarola, and the exterior com­pleted in 1516-1524 by Ambrogio da Milano and Francesco di Vito Lombardo; the slender dome was not added till 1606; its plan is a Greek cross. S. Fillippo in the town, a church of the early 16th century, betrays the influence of the Consolazione in details.

During the period of its independence, the town struck coins with the legend *Tutere.* It is hardly mentioned in history until it received Roman citizenship in the Social War. Crassus took it in 83 B.c.; and a colony was founded there by Octavian, including some soldiers of the 41st legion, which only existed in his time, after which it bore the name *Colonia Iulia fida Tuder.* It was a station on the road between America and Perusia, but otherwise is hardly mentioned. Narses won a victory over the Goths near Todi in 552, and Totila lost his life. In the middle ages it had frequent struggles with Perugia, and its obedience to the church until the 16th century was somewhat fitful. The village of Vicus Martis Tudertium lay 9 m. to the east on the Via Flaminia. Several inscriptions mention it *{Corpus inscript, lat.* xi. 694).

TODLEBEN (or Totleben), FRANZ EDUARD IVANOVICH, Count (1818-1884), Russian engineer general, was bom at Mittau in Courland, on the 20th of May 1818. His parents were of German descent, and of the mercantile class, and he himself was intended for commerce, but a strong instinct led him to seek the career of a military engineer. He entered the school of engineers at St Petersburg, and passed into the army in 1836. In 1848 and the two following years he was employed, as cap­tain of engineers, in the campaigns against Schamyl in the Caucasus. On the outbreak of -war between Russia and Turkey in 1853, he served in the siege of Silistria, and after the siege was raised was transferred to the Crimea (see Crimean War). Sevastopol, while strongly fortified toward the sea, was almost unprotected on the land side. Todleben, though still a junior field officer, became the animating genius of the defence. By his advice the fleet .was sunk, in order to blockade the mouth of the harbour, and the deficiency of fortifications on the land side was made good before the allies could take advantage of it. The construction of earthworks and redoubts was carried on with extreme rapidity, and to these was transferred, in great part, the artillery that had belonged to the fleet. It was in the ceaseless improvisation of defensive works and offensive counterworks to meet every changing phase of the enemy’s attack that Todleben’s peculiar power and originality showed itself. He never commanded a large army in the open field, nor was he the creator of a great permanent system of defence like Vauban. But he may justly be called the originator of the idea that a fortress is to be considered, not as a walled town but as an entrenched position, intimately connected with the offensive and defensive capacities of an army and as susceptible of alteration as the formation of troops in battle or manœuvre. Until the 20th of June 1855 he conducted the operations of defence at Sevastopol in person; he was then wounded in the foot, and at the operations which immediately preceded the fall of the fortress he was not present. In the course of the siege he had risen from the rank of lieutenant-colonel to that of lieutenant-general, and had also been made aide-de-camp to the