retirement he received a baronetcy from Lord Palmerston. In his early years his political views had a Radical tinge, and, although he subsequently joined the Tories, his Conservatism was of a mild type. He withdrew from the Whigs along with Lord Stanley and Sir James Graham, and afterwards adhered to Peel. He died in London on the 6th of March 1869. His family consisted of two daughters and a son, Sir William Emerson Tennent, 2nd baronet (1835-1876), who was an official in the Board of Trade, and at whose death the baronetcy be­came extinct.

Besides the books above mentioned, Emerson Tennent wrote *Belgium in* *1840*.(1841), and *Wine; its Duties and Taxation* (1855), and was a contributor to magazines and a frequent correspondent of *Noles and Queries.* (H. CH.)

**TENNESSEE, a** South Central state of the United States of North America, lying between latitude 35° and latitude 36° 40' N. and between longitude 81° 37' and longitude 90° 28' W. It is bounded on the N. by Kentucky and Virginia along a line which, because of erroneous surveys, varies considerably, east of the Tennessee river, from the intended boundary—the line of latitude 36° 30' N.—the variations all being measured to the north of that parallel; on the E. by North Carolina along the line of the crest of the culminating ridge of the Unaka Mountains till within 26 m. of the Georgia frontier, where it turns due south, giving to Tennessee a triangular piece of territory which should have belonged to North Carolina; on the S. by Georgia, Alabama and Mississippi along the 35th parallel of N. lat.; on the W. by the Mississippi river which separates it from Arkansas and Missouri. The extreme length of the state from E. to W. is 432 m., and the extreme breadth is 109 m. its area being 42,022 sq. m., of which 335 sq. m. is water surface.

*Physical Features.—*Tennessee is traversed in the east by the Unaka Ridges of the Older Appalachian Mountains and by the Great Appalachian Valley; in the middle by the Cumberland Plateau, the Highland Rim Plateau, and the Nashville Basin of the Appalachian Plateau; and in the west by the Gulf Coastal Plains and a narrow strip of the Mississippi Flood Plain. From a maximum elevation of 6636 ft. at Mount Guyot on the North Carolina border, in Sevier county, the surface descends to 117 ft. or less on the Mississippi Flood Plain in the S.W. corner of the state. The general slope, however, is west by north. About 1700 sq. m. are at least 2000 ft. above the sea, but 28,200 sq. m. are less than 1000 ft. above the sea, and the mean elevation of the state is approximately 900 ft. The Unaka Mountains, which occupy a belt 8 to 10 m. wide along its E. border, are a series of somewhat irregular ridges developedon complexly folded and faulted crystalline rocks. Sixteen peaks exceed 6000 ft. in height. They are Mount Guyot (6636 ft.), Clingman Dome (6619 ft.), Mount Le Conte (6612 ft.), Mount Curtis (6568 ft.), Mount Safford (6535 ft.), Mount Love (6443 ft.), Mount Henry (6373 ft.), Roan Mountain (6313 ft.), Luftee Knob (6232 ft.), Peck Peak (6232 ft.), Raven Knob (6230 ft.), Mount Collins (6188 ft.), Tricorner Knob (6188 ft.), Thermometer Knob (6157 ft.), Oconee Mountain (6135 ft.), and Master Knob (6013 ft.). That part of the Great Appalachian Valley which traverses Tennessee is commonly known as the Valley of East Tennessee. It consists of parallel ridges and valleys de­veloped by erosion on folded sandstones, shales and limestones, the valley quality predominating because the weak limestones were of great thickness. The valley areas vary in height from 600 ft. in the south-west to 1000 ft. in the north-east. In the north­east the ridges are more numerous and higher than in the south­west, where White Oak Ridge and Taylors Mountain are among the highest, although Missionary and Chickamauga Ridges are better known, because of their association with battles of the Civil War. Along the north-west border of the valley a steep escarpment, known as the Cumberland Scarp, rises to the Cumberland Plateau. This plateau has a mean elevation of about 2000 ft., is only slightly rolling, and slopes gently toward the north-west. The W. edge of the plateau is much broken by deep indentations of stream valleys, and drops suddenly downward about 1000 ft. to the Highland Rim Plateau, so named from the scarp formed by its western rim about the Nashville and (farther north) Louisville basins. It is generally level except where it is cut by river valleys. The Nashville Basin, with a more rolling surface, lies for the most part 400 to 600 ft. below the Rim; a few hills or ridges, however, rise to the level of the Rim. The Basin is elliptical in form, extending nearly across the state from N.E. to S.W., with an extreme width of about 60 m. ; near its centre is thecïty of Murfreesboro, and Nashville lies in the north-west. Westward from the Lower Tennessee river the surface of the East Gulf Coastal Plain rises rapidly to the summit of a broken cuesta or ridge and then descends gently and terminates abruptly in a bluff overlooking the Mississippi Flood Plain. The E. slope, about one-fourth the length of the W. slope, is steep and rocky, and the W. slope is broken by the valleys of numerous streams. The. bluff, 150 to 200 ft. in height, traverses the state in a rather straight course and between it and the meandering Mississippi, except at a few points where the latter touches it, lie low bottom lands varying in width according to the bends of the river and containing numerous swamps and ponds. In the northern portion, principally in Lake county, is Reelfoot Lake, which occupies a depression formed during an earthquake in 1811. It is 18 m. long, has a maximum width 0Γ3 m., and is the only large lake in the state.

The whole of the Appalachian Province of Tennessee and the southern portion of the Cumberland Plateau, the Highland Rim, and the Lowland Basin are drained southward and westward by the Tennessee river and its tributaries. The valley of the Lower Tennessee is drained northward by the same river. The northern portion of the. Cumberland Plateau, Highland Rim, and Lowland Basin are drained northward and westward by the Cumberland river and its tributaries. The western slope of the East Gulf Plains is drained directly into the Mississippi by several small streams.

*Fauna.—A* few black bears inhabit the Unaka Mountain region. Deer are quite numerous in the forests of the east half of the state. The wolf, fox, lynx (“ wildcat "), otter, mink and beaver have become rare. Squirrels, rabbits, wood-chucks, skunks, muskrats and opossums are common. Among game-birds there are a few wild turkeys, wild geese and bob-white (locally “ partridge "), and greater numbers of grouse and various ducks; among song-birds the robin, bluebird and mocking-bird arc common; and there are also woodpeckers, whippoorwills, blackbirds, hawks, owls, crows and buzzards. There are a few speckled trout in the mountain streams, but the commoner fish are bass, perch, catfish, crappies, pike, drum buffalo, carp, suckers and eels. Rattlesnakes and moccasins, or cottonmouths, both venomous, are occasionally seen.

*Flora.*—Originally the state was well covered with forests, and about one-half of it is still woodland containing a large variety of trees. On the mountains the trees are chiefly pines, firs, spruce and hemlock. In the. swamps of the western part of the state, especially on the Mississippi Flood Plain, the cypress is dominant. In the Lowland Basin small groves of what was once an extensive forest of red cedar remain. Poplar and larch are much more abun­dant in the western than in the eastern half of the state, and pine is much more abundant in the eastern than in the western half. But in most partsof the state there are mixed forests of white oak, red oak, ash, red gum, black gum, maple, hickory, chestnut, syca­more, magnolia, tulip tree, cherry, pecan, walnut, elm, beech, locust and persimmon. Birch, mulberry, linden, willow, bass-wood, dogwood, the sorrel tree, pawpaw and wild plum are common. There are a few varieties of the rare shittimwood tree *(Bumelia lanuginosa).* Among indigenous shrubs and vines are the hazel, blackberry, gooseberry,, whortleberryf huckleberry, grape and cranberry. Blue grass is indigenous in the Lowland Basin. Of numerous medicinal herbs ginseng is the most important.

*Climate.—*Tennessee is noted for its delightful climate. The mean summer temperature ranges according to elevation from 62o F. on the Unaka Mountains to 720 on the Cumberland Plateau, to 750 in the Valley of East Tennessee and on the Highland Rim, to 770 in the Lowland Basin, and to about 78° on the East Gulf Plains. But the mean winter temperature for each of these divisions varies little from 38°, and the mean.annual temperature ranges only from 57° in East Tennessee to 58i in Middle Tennessee and to 60° in West Tennessee. The altitude being the same, the mean annual temperature on the south border of the state is about a0 higher than that on the north border. Usually the highest temperatures of the year are in July and the lowest in January. In some regions there is no record of a temperature as high as 100"; in others there is none as low as -io°; and the average absolute range is about 90o. However, during a period of fifty-four years (1854-1908) the records show a range of extremes from -30o at Erasmus, Cumber­land county, in February 1899, to 107" at several places in July 1901. Rarely there are killing frosts, especially in the southern and western parts of the state from the third week in April to the middle of October. An average annual precipitation of about 50 in. is quite equally distributed over the state and a little more than one-half of it is well distributed through the spring and summer months. The average annual snowfall is about 8 in., and the snowfalls are usually light and melt within a few days. The average number of clear, fair, or only partly cloudy days during a year in Tennessee is 260. The warm, moisture-bearing winds blow low from the south or south-west with a free sweep across the state in a direction nearly parallel with the trend of the mountains. Above these are upper currents from the north or north-west. The com­mingling of the two currents gives rise frequently to westerly and occasionally to easterly winds. The average velocity of the winds is comparatively low and violent storms are rare.

*Soil.—*The Lowland Basin, the less elevated parts of the Valley of East Tennessee, and parts of the outer portion of the Highland Rim have a fertile limestone soil. The deep deposit of silt on the Mississippi Flood Plain is even more fertile. There are narrow strips of rich alluvium along many other rivers. The soils on the