*Literature.—*The specifications of patents may be consulted. See also C. W. Williams, *The Combustion of Coal and the Preven­tion of Smoke* (London, 1858) ; W. W. Barr, *Practical Treatise on the Combustion of Coal* (Indianapolis, 1879) ; *Official Report of the Smoke-Abatement Committee* (London, 1882); *Smoke-Abatement Exhibition Review* (London, 1882) ; and papers and discussions in the *Journal of the Society of Chemical Industry,* 1881 and follow­ing years. (o. m.)

SMOLENSK, a government of middle Russia, belonging partly to Great Russia and partly to White Russia, is bounded by Moscow and Kaluga on the E., Orel and Tcher- nigoff on the S., Moghileff and Vitebsk on the W., and Pskoff and Tver on the N. It covers an area of 21,638 square miles in the west of the great central plateau, its northern districts extending towards the hilly region of the Valdais, where the flat-topped gentle declivities reach about 1000 feet above the sea. The rivers being deeply cut in the plateau, the surface is also hilly in the western districts (Smolensk, Dorogobuzh), whence it slopes away gently towards im­mense plains on the east and south. Carboniferous lime­stones, containing a few layers of coal (in Yuchnoff) and quarried for building purposes, occupy the east of Smolensk ; white Chalk appears in the southern extremity; while Tertiary sands, marls, and ferruginous clays cover all the west. The whole is overlain with a thick sheet of boulder clay, with irregular extensions to the north ; Post-Tertiary sands are spread over wide surfaces; and peat-bog fills the marshy depressions. The soil, mostly clay, is generally unfertile, and stony and sandy in several districts. Many large rivers belonging to the basins of the Volga, the Oka, the Dnieper, and the Dwina have their origin in Smolensk. The Vazuza and the Gzhat, both flowing into the Volga, and the Moskva and the Ugra, tributaries of the Oka, are channels for floating timber. The two tributaries of the Dwina—the Kasplya and the Mezha—are of much more importance, as they and their affluents carry considerable numbers of boats to Riga. The Dnieper takes its origin in Smolensk and waters it for more than 300 miles ; but neither this river nor its tributaries (Vop, Vyazma, Sozh, and Desna), whose upper courses belong to Smolensk, are navigable ; timber only is floated down some of them. Many small lakes and extensive marshes occur in the north­west. One-third of the area is under forests. The popula­tion of Smolensk reached 1,191,172 in 1882, of whom only 106,133 lived in towns, and consists of White Russians in the west (46∙7 per cent.), Great Russians in the east (42∙6), and of a mixed population of both (10∙4). Nearly 1000 Jews and 1000 Poles are scattered through the towns.

The climate is like that of middle Russia generally, although the moderating influence of the wet climate of western Europe is felt to some extent. The average yearly temperature at Smolensk is 45°∙5 Fahr. (January, 13°∙5 ; July, 67°∙2). Notwithstanding the unproductive soil and the frequent failures of crops (especially in the north-west), the chief occupation is agriculture. In 1884 3,040,000 acres were under crops, and 2,379,600 quarters of grain of various kinds were raised (2,930,400 in 1883),—the potato crop yielding 5,498,400 bushels. Nearly all the land is cultivated by the peasant communes,—only 766,500 acres (out of 6,868,900) in the hands of single individuals being under cultivation. Oats are an important crop. Hemp and flax are largely raised and exported. Cattle-breeding stands at a low level ; the cattle of the peasantry suffer from a want of meadow and pasture land, which is mostly in private ownership. In 1882 there were 329,850 horses, 349,000 horned cattle, 401,000 sheep, and 162,000 pigs. The peasantry are mostly very poor, in consequence not only of the desolation inflicted on Smolensk in 1812, the effects of which are still felt, but also of insufficient allotments and want of meadows. Garden­ing and bee - keeping, which formerly flourished, have almost disappeared. The timber trade and boat-building are important sources of income, but do not furnish employment for all who are in need of it ; more than one-half of the male population of west Smolensk leave their homes every year in search of work, principally as navvies throughout Russia. The manufactures are developing but slowly, and in 1882 employed only about 5100 workmen,—their annual production being valued at £328,800 ; of this amount the distilleries yielded nearly one-third. A few cotton-mills in the east have a production valued at £62,160 per annum. A lively

traffic is carried on on the rivers, principally the Kasplya, the Obzha, and the Ugra, where corn, hemp, hempseed, linseed; and especially timber are shipped to the amount of nearly £400,000 annually. A considerable quantity of corn is imported into the western districts. Smolensk is crossed by two important railways, from Moscow to Warsaw and from Riga to Saratoff; a branch-line connects Vyazma with Kaluga. The educational institutions embrace eleven gym­nasia and progymnasia (830 boys and 1402 girls), and 394 primary schools (15,031 boys and 2142 girls). Smolensk is divided into twelve districts, the chief towns of which, with their populations in 1882, are—Smolensk (see below), Byełyi (7150), Dorogobuzh (8400), Duhovshina (3660), Elnya (4850), Gzhatsk (7050), Krasnyi (3550), Poryetchie (4650), Rosłavl (9050), Sytchevka (5720), Vyazma (13,000), and Yuchnoff (3230).

SMOLENSK, capital of the above government, is situ­ated on both banks of the Dnieper, at the junction of the railways from Moscow to Warsaw and from Riga to Orel, 262 miles by rail west-south-west of Moscow. The town, with the ruins of its old kremlin, is built on the high crags of the left bank of the Dnieper, its suburbs extending around and on the opposite bank of the river. Its walls are now rapidly falling into decay, as well as all other remainders of its past. The cathedral was erected in 1676-1772, on the site of a more primitive building (erected in 1101), which was blown up in 1611 by the defenders of the city. The picture of the Virgin brought to Russia in 1046, and attributed to St Luke, which is kept in this cathedral, is much venerated throughout central Russia. Two other churches, built in the 12th century, have been spoiled by recent additions. Smolensk is neither a commercial nor a manufacturing centre; its population was 35,830 in 1882.

Smolensk, one of the oldest towns of Russia, is mentioned in Nestor as the chief town of the Crivitchis, situated on the great com­mercial route “from the Varyaghs to the Greeks.” It maintained a lively traffic with Constantinople down to the 11th century, when the principality of Smolensk included Vitebsk, Moscow, Kaluga, and parts of the present government of Pskoff. The princes of Kieff were often recognized as military chiefs by the *vyetche* (council) of Smolensk, who mostly preferred Mstislaff and his descendants, and Rostislaff Mstislavovitch became the head of a series of nearly independent princes of Smolensk. From the 14th century these last fell more and more under the influence of the Lithuanian princes, and in 1404 Smolensk was annexed to Lithuania. In 1449 the Moscow princes renounced their claims upon Smolensk; never­theless this important city, which was both a stronghold and a commercial centre with nearly 100,000 inhabitants, was a constant source of contention between Moscow and Lithuania. In 1514 it fell under Russian dominion ; but during the disturbances of 1611 it was taken by Sigismund III. of Poland, and it remained under Polish rule until 1654, when the Russians retook it; in 1686 it was definitively annexed to Russia. In the 18th century it played an important part as a basis for the military operations of Peter I. during his wars with Sweden. In 1812 it was well fortified ; but the French took it, when it suffered much from conflagrations, and generally, during the war.

SMOLLETT, Tobias George (1721-1771), novelist, was born at Dalquburn, in the valley of Leven, Dumbartonshire, in 1721. His buoyant humour and energy were the gifts of nature, and early experience furnished him with abundant provocation for the harsh and cynical views of human nature to be traced in his novels. At a very early age he was placed in a position calculated to harden the heart of a proud and sensitive child. His father, the youngest son of the laird of Bonhill, a Scottish legal dignitary, married against the ambition of his family, and died young, leaving three children, of whom the future novelist was the second son, entirely unprovided for. The boy, being thus left dependent on the charity of relatives, grudgingly and insolently bestowed, as it seemed to him, learned to look with suspicion on kindly professions. He seems to have received the ordinary book education of the place and period. He was sent to the neighbouring grammar-school of Dumbarton—taught at the time by one of the most eminent schoolmasters in Scotland—and thereafter to the university of Glasgow. He wished then to enter the army, as his elder brother had done, but much against his will was apprenticed to a surgeon. His