constitution promised. After consultation with the diet the king promulgated a new constitution on September 4, 1831, which is the basis of the present government. An offer from Metternich of Austrian arms to repress the discontent by force had been refused. The feudal estates were replaced by two chambers, largely elective, and the privy council by a responsible ministry of six departments. Bernhard von Lindenau was the head of the first responsible cabinet, and the first constitutional assembly sat from January 27, 1833, till October 30, 1834. While Saxony's political liberty was thus enlarged, its commerce and credit were stimulated by the construction of railways. Antony had died in 1836, and Frederick Augustus II. (1836–1854) became sole king. Growing interest in politics produced dissatisfaction with the compromise of 1831, and the liberal opposition grew in numbers and influence. The burning questions were the publicity of legal proceedings and the freedom of the press; and on these the Government sustained its first crushing defeat in the lower or second chamber in 1842. Lindenau resigned in 1843. Religious considerations as to the recognition of the German Catholics and a new constitution for the Protestant Church began to mingle with purely political questions, and Prince John, as the supposed head of the Jesuit party, was insulted at a review of the communal guards at Leipsic in 1845. The military rashly interfered, and several innocent spectators were shot. The bitterness which this occurrence provoked was intensified by a political reaction which was initiated about the same time under Von Könneritz. Warned by the sympathy excited in Saxony by the revolutionary events at Paris in 1848, the king dismissed his reactionary ministry, and a liberal cabinet took its place in March 1848. The disputed points were now conceded to the country. The privileges of the nobles were curtailed; the administration of justice was put on a better footing, the press was unshackled; publicity in legal proceedings was granted; trial by jury was introduced for some special cases; and the German Catholics were recognized. The feudal character of the first chamber was abolished, and its members made mainly elective from among the highest tax-payers, while an almost universal suffrage was introduced for the second chamber. The first demand of the overwhelmingly democratic diet returned under this reform bill was that the king should accept the Frankfort constitution. Frederick, alleging the danger of acting without the concurrence of Prussia, refused, and dissolved the diet. A public demonstration at Dresden in favour of the Frankfort constitution was prohibited as illegal on May 2, 1849. This at once awoke the popular fury. The mob seized the town and barricaded the streets; Dresden was almost destitute of troops; and the king fled to the Königstein. The rebels then proceeded to appoint a provisional Government, consisting of Tzschirner, Heubner, and Todt, though the true leader of the insurrection was the Russian Bakunin. Meanwhile Prussian troops had arrived to aid the Government, and after two days' fierce street fighting the rising was quelled. The bond with Prussia now became closer, and Frederick entered with Prussia and Hanover into the temporary "alliance of the three kings." He was not sincere, however, in desiring to exclude Austria, and in 1850 accepted the invitation of that power to send deputies to Frankfort. The first chamber immediately protested against this step, and refused to consider the question of a pressing loan. The king retorted by dissolving the diet and summoning the old estates abolished in 1848. When a quorum, with some difficulty, was obtained, another period of retrograde legislation set in. The constitution of the chambers has never been restored to the basis of 1848. The king himself was carried away with the reactionary current, and the people remained for the time indifferent. Von Beust became minister for both home and foreign affairs in 1852, and under his guidance the policy of Saxony became more and more hostile to Prussia and friendly to Austria. Saxony was not, however, able to withdraw from the customs union, which indeed conferred the very highest benefit on its trade and manufactures.

The sudden death of the king, by a fall from his carriage in Tyrol, left the throne to his brother John (1854–1873), a learned and accomplished prince, whose name is known in German literature as a translator and annotator of Dante. His brother's ministers kept their portfolios, but their views gradually became somewhat liberalized with the spirit of the times. Beust, however, still retained his federalistic and philo-Austrian views. When war was declared between Prussia and Austria in 1866, Saxony declined the former's offer of neutrality, and, when a Prussian force crossed the border, the Saxon army under the king and the crown prince joined the Austrians in Bohemia. The entire kingdom, with the solitary exception of the Königstein, was occupied by the Prussians. On the conclusion of peace Saxony lost no territory, but had to pay a war indemnity of ten million thalers, and was compelled to enter the North-German Confederation. Its army and its postal and telegraph system were placed under the control of Prussia, and its representation at foreign courts was entrusted to the Prussian embassies. Beust was forced to resign; and liberal measures in both church and state were actively carried through. John was succeeded in 1873 by his elder son Albert (born 1828), who had won distinction as a general in the wars of 1866 and 1870. Under this prince the general course of politics has presented nothing of special importance, except perhaps the steady spread of the doctrines of social democracy, which has flourished especially in Saxony. As a loyal member of the new German empire, Saxony has gradually transferred its sympathies from its old ally Austria to its new leader Prussia. In 1877 Leipsic was chosen as the seat of the supreme court of law for the empire.

The political history of the parts of Saxony left by the capitulation of Wittenberg to the Ernestine line, which occupy the region now generally styled Thuringia (Thüringen), is mainly a recital of partitions, reunions, redivisions, and fresh combinations of territory among the various sons of the successive dukes. The principle of primogeniture was not introduced until the end of the 17th century, so that the Protestant Saxon dynasty, instead of building up a single compact kingdom for itself, has split into four petty duchies, of no political influence whatever. In 1547 the ex-elector John Frederick the Magnanimous was allowed to retain Weimar, Jena, Eisenach, Gotha, Henneberg, and Saalfeld. Altenburg and a few other districts were added to the Ernestine possessions by the treaty of Naumburg in 1554, and other additions were made from other sources. John Frederick, who had retained and transmitted to his descendants the title of duke of Saxony, forbade his sons to divide their inheritance; but his wishes were respected only until after the death of his eldest son in 1565. The two survivors then founded separate jurisdictions at Weimar and Coburg, though arrangements were made to exchange territories every three years. In 1596 Saxe-Coburg gave off the branch Saxe-Eisenach; and in 1603 Saxe-Weimar gave off Saxe-Altenburg, the elder Weimar line ending and the younger beginning with the latter date. By 1638 Weimar had absorbed both Coburg and Eisenach; Altenburg remained till 1672. John, duke of Saxe-Weimar, who died in 1605, is regarded as the common ancestor of the present Ernestine lines. In 1640 his three surviving sons ruled the duchies of Weimar, Eisenach, and Gotha. Eisenach fell in in 1644 and Altenburg in 1672, thus leaving the dukes of Saxe-Weimar and Saxe-Gotha to become the ancestors of the modern ruling houses. Saxe-Weimar was still repeatedly divided; in 1668 a Saxe-Marksuhl appears, and about 1672 a Saxe-Jena and a new Saxe-Eisenach. All these, however, were extinct by 1741, and their possessions returned to the main line, which had adopted the principle of primogeniture in 1719. The present grand-duchy of SAXE-WEIMAR-EISENACH is separately noticed.

Saxe-Gotha was even more subdivided, and the climax was reached about 1680, when Gotha, Coburg, Meiningen, Romhild, Eisenberg, Hildburghausen, and Saalfeld were each the capital of a duchy. By the beginning of 1825 only the first three of these and Hildburghausen remained, the lands of the others having been divided after much quarrelling. In that year the Gotha line expired, and a general redistribution of the lands of the "Nexus Gothanus," as this group of duchies was called, was arranged on 12th November 1826. The duke of Hildburghausen gave up his lands entirely for Altenburg and became duke of SAXE-ALTENBURG; the duke of Coburg exchanged Saalfeld for Gotha and became duke of SAXE-COBURG-GOTHA; and the duke of SAXE-MEININGEN received Hildburghausen, Saalfeld, and some other territories, and added Hildburghausen to his title. These duchies are separately noticed. See also THURINGIA.

GEOGRAPHY AND STATISTICS.

The kingdom of Saxony, the history of which has been traced above, is the third constituent of the German empire in point of population, and the fifth in point of area. With the exception of the two small exclaves of Ziegelhein in Saxe-Altenburg and Leibschwitz on the borders of Reuss, Saxe-Weimar, and Saxe-Altenburg, it forms a compact whole of a triangular shape, its base extending from north-east to south-west, and its apex pointing north-west. It lies between 50° 10′ and 51° 29′ N. lat. and between 11° 53′ and 15° 4′ E. long. The total area is 5789 square miles (about half the size of Belgium), or 2·7 per cent. of the entire empire; its greatest length is 130 miles, and its greatest breadth 93 miles. Its frontiers have a circuit of 760 miles. On the south it is bounded by Bohemia, on the west by Bavaria and the Thuringian states, and on the remaining sides by Prussia. Except on the south, where the Erzgebirge forms at once the limit of the kingdom and of the empire, the boundaries are entirely political. For administrative purposes the kingdom of Saxony is divided into the four districts of Bautzen in the south-east, Dresden in the north-east, Leipsic in the north-west, and Zwickau in the south-west.

Physical Features.—Saxony belongs almost entirely to the central mountain region of Germany, only the districts along the north border and around Leipsic descending into the great North-European plain. The average elevation of the country is not, however, great; and it is more properly described as hilly than as mountainous. The ordinary estimates return one-fifth of the area as plain, two-fifths as hill country, and two-fifths as mountain land. The slope is very regularly from south-east to north-west, in the direction of the shorter axis. The chief mountain range is the Erzgebirge, stretching for 90 miles along the south border, and reaching in the Fichtelbergs (3979 feet and 3953 feet) the highest elevation in the kingdom. The west and south-west half of Saxony is more or less occupied by the ramifications and subsidiary groups of this range, one of which is known from its position as the Central Saxon chain, and another lower group still farther north as the Oschatz group. The south-east angle of Saxony is occupied by the mountains of Upper Lusatia (highest summit 2600 feet), which form the link between the Erzgebirge and Riesengebirge in the great Sudetic chain. North-west from this group, and along both banks of the Elbe, which divides it from the Erzgebirge, extends the picturesque mountain region known as the Saxon Switzerland. The action of water and ice upon the soft sandstone of which the hills here are chiefly composed has produced remarkable formations of deep gorges and isolated fantastic peaks, which, however, though both beautiful and interesting, by no means recall the characteristics of Swiss scenery. The highest summit attains a height of 1830 feet; but the more interesting peaks, as the Lilienstein, Königstein, and the Bastei, are lower. With the trifling exception of the south-east of Bautzen, which sends its waters by the Neisse to the Oder, Saxony lies wholly in the basin of the Elbe, which has a navigable course of 72 miles from south-east to north-west through the kingdom. Comparatively few of the numerous smaller streams of Saxony flow directly to the Elbe, and the larger tributaries only join it beyond the Saxon borders. The Mulde, formed of two branches, is the second river of Saxony; others are the Black Elster, the White Elster, the Pleisse, and the Spree. There are no lakes of any size, but mineral springs are very abundant. The best known is at Bad Elster in the Voigtland.

Climate.—The climate of Saxony is generally healthy. It is mildest in the valleys of the Elbe, Mulde, and Pleisse, and severest in the Erzgebirge, where the district near Johanngeorgenstadt is known as Saxon Siberia. The average temperature, like that of central Germany as a whole, varies from 48° to 50° Fahr.; in the Elbe valley the mean in summer is from 62° to 64°, and in winter about 30°; in the Erzgebirge the mean temperature in summer is from 55° to 57°, and in winter 23° or 24°. The Erzgebirge is also the rainiest district, 27½ to 33½ inches falling per annum; the amount decreases as we proceed northwards, and Leipsic with an annual fall of 15½ to 21½ inches enjoys the driest climate.

Soil.—Saxony is one of the most fertile parts of Germany; and in regard to the productive occupation of its soil it stands among the most advanced nations of the world. Only 1 per cent. of the total area is waste or unused. According to the returns for 1883, 55·7 per cent. of the area is under agriculture, 11·7 in pasture and meadow, 27·4 under forest, and 4·2 occupied by buildings, roads, and water. The lowest lands are the most productive, and fertility diminishes as we ascend towards the south, until on the bleak crest of the Erzgebirge cultivation ceases altogether. Saxon agriculture, though dating its origin from the Wends, has received its full development only in the present century. Long fettered by antiquated customs, the land was subdivided into small parcels and subjected to vexatious rights. But in 1834 a law was passed providing for the union of the scattered lands belonging to each proprietor, and that may be considered the dawn of modern Saxon agriculture, which has now reached a very high pitch of excellence. It has been fostered both publicly and privately, and a special official secretary assists the minister of the interior in attending to this branch of national prosperity. In 1883 the agricultural lands in Saxony were divided among 192,000 farmers or proprietors, of whom only 758 held 250 acres and upwards, 28,200 between 25 and 250 acres, and the rest less than 25 acres. The small proprietors held 28·7 per cent. of the total area, the middle class 57·2, and the large owners 14·1. The richest grain districts are near Meissen, Grimma, Bautzen, Döbeln, and Pirna. The chief crop is rye, but oats are hardly second to it. Wheat and barley are grown in considerably less quantity. Very large quantities of potatoes are grown, especially in the Voigtland. Beet is chiefly grown as feeding stuff for cattle, and not for sugar. Flax (8270 acres in 1883) is grown in the Erzgebirge and Lusatian mountains, where the manufacture of linen was at one time a flourishing domestic industry. Saxony owes its unusual wealth in fruit to the care of the paternal elector Augustus (1553–1586), who is said never to have stirred abroad without fruit seeds for distribution among the peasants and farmers. Enormous quantities of cherries, plums, and apples are annually borne by the trees round Leipsic, Dresden, and Colditz. The cultivation of the vine in Saxony is respectable for its antiquity, though the yield is insignificant. Wine is said to have been grown here in the 11th century; the Saxon vineyards, chiefly on the banks of the Elbe near Meissen and Dresden, occupied 2515 acres in 1883.

Live Stock.—According to returns made for 1883 Saxony contained 126,886 horses, 651,329 cattle, 149,037 sheep, 355,550 pigs, and 116,547 goats. The breeding of horses is carried on to a very limited extent in Saxony, more than nine-tenths of the horses required being imported. Cattle-rearing, which has been an industry since the advent of the Wends in the 6th century, has attained very considerable importance on the extensive pastures of the Erzgebirge and in the Voigtland. Sheep-farming has considerably declined within the last few decades, as in most parts of northern Germany. While other classes of domestic animals have retained very much the same proportion to the number of the human population, sheep have decreased from one to every six inhabitants in 1861 to one to every twenty in 1883. In 1765 the regent Prince Xaver imported 300 merino sheep from Spain, and so improved the native breed by this new strain that Saxon sheep were eagerly imported by foreign nations to improve their flocks, and "Saxon electoral wool" became one of the best brands in the market. The high level was not long maintained; flock-masters began to pay more attention to quantity than to quality of wool, and the Saxon wool has accordingly deteriorated. In 1868 no less than 1,166,130 lbs. of wool were offered for sale in the wool markets of Saxony, of which Leipsic and Dresden are the chief; in 1884 only 276,843 lbs. were offered. Swine furnish a very large proportion of the flesh-diet of the people. Geese abound particularly round Leipsic and in Upper Lusatia, poultry about Bautzen. Bee-keeping flourishes on the heaths on the right bank of the Elbe; in 1883 there were 53,756 bee-hives in Saxony. Game is not now very abundant; hares and partridges are shot in the plains to the north-west.

Forests.—The forests of Saxony are extensive, and have long been well cared for both by Government and by private proprietors. The famous school of forestry at Tharandt was founded in 1811. The Voigtland is the most densely wooded portion of the kingdom, and next comes the Erzgebirge. About 8,379,200 acres, or 85 per cent. of the whole forest land, were planted with coniferous trees; and about 1,439,700 acres or 15 per cent. with deciduous trees, among which beeches and birches are the commonest. About 30 per cent. of the total belongs to Government.

Minerals.—The mineral wealth of Saxony is very considerable; and its mines are among the oldest in Germany. Silver was raised in the 12th century, and argentiferous lead is still the most valuable ore mined; tin, iron, and cobalt rank next; and coal is one of the chief exports. Copper, zinc, and bismuth are also worked. Saxon mines now produce about 6 per cent. of the gross quantity, and about 8 per cent. of the aggregate value of metals raised in Germany. The country is divided into four mining districts:—Freiberg, where silver and lead are the chief products; Altenberg, where tin is mainly raised; Schneeberg, yielding cobalt, nickel, and ironstone; and Johanngeorgenstadt, with ironstone and silver mines. There are in all 236 mines, but in 1883 only 150 of these were in operation, employing 8615 hands. In 1870 253 mines employed 9132 hands. The total value of metal raised in Saxony in 1883 was £288,200; in 1870 it was £314,916. Coal is found principally in two fields,—one near Zwickau, and the other in the circle of Dresden. Brown coal or lignite is found chiefly in the north and north-west, but not in sufficiently large quantities to be exported. The number of coal-mines is steadily decreasing, though the numbers of miners and the gross produce are both on the increase. The following table shows the output in tons since the years named:—

	Mines.	Hands.	Coal.	Lignite.	Anthracite.	Value.
1870	242	16,811	2,608,705	506,687	346	£1,083,625
1880	189	19,625	3,622,007	590,119	345	1,363,780
1883	166	20,136	4,088,484	648,044	280	1,510,863

Peat is especially abundant on the Erzgebirge. Immense quantities of bricks are made all over the country. Excellent sandstone for building is found on the hills of the Elbe; in 1883 266 quarries employed 1348 hands. Fine porcelain clay occurs near Meissen, and coarser varieties elsewhere. A few precious stones are found among the southern mountains. Saxony has no salt-mines.

Industries.—The Central-European position of Saxony has fostered its commerce; and its manufactures have been encouraged by the abundant water-power throughout the kingdom. Nearly one-half of the motive power used in Saxon factories is supplied by the streams, of which the Mulde, in this respect, is the chief. The early foundation of the Leipsic fairs, and the enlightened policy of the rulers of the country, have also done much to develop its commercial and industrial resources. Next to agriculture, which supports about 20 per cent. of the population, by far the most important industry is the textile. Saxony carries on 26 per cent. of the whole textile industry in Germany, a share far in excess of its proportionate population. Prussia, which has more than nine times as many inhabitants, carries on 45 per cent., and no other state more than 8 per cent. Nearly 18½ per cent. of the population were engaged in this industry in 1882, by far the largest proportion in any German state except Reuss (älterer Linie), which had 36 per cent. so engaged. The chief seats of the

manufacture are Zwickau, Chemnitz, Glauchau, Meerane, and Hohenstein in the south of Zwickau, and Camenz, Pulsnitz, and Bischofswerda in the north of Dresden. The centre of the cotton manufacture (especially of cotton hosiery) is Chemnitz; cotton-muslins are made throughout the Voigtland, ribbons at Pulsnitz and its neighbourhood. Woollen cloth and buckskin are woven at Camenz, Bischofswerda, and Grossenhain, all in the north-east, woollen and half-woollen underclothing at Chemnitz, Glauchau, Meerane, and Reichenbach; while Bautzen and Limbach produce woollen stockings. Linen is manufactured chiefly in the mountains of Lusatia, where the looms are still to some extent found in the homes of the weavers. The coarser kinds only are now made, owing to the keen English competition in the finer varieties. Damask is produced at Gross-Schönau and Neu-Schönau. Lace-making, discovered or introduced by Barbara Uttmann in the latter half of the 16th century, and now fostered by Government schools, has long been an important domestic industry among the villages of the Erz Mountains. Straw-plaiting occupies 6000 hands on the mountain slopes between Gottleuba and Lockwitz. Wax cloth is manufactured at Leipsic, and artificial flowers at Leipsic and Dresden. Stoneware and earthenware are made at Chemnitz, Zwickau, Bautzen, and Meissen, porcelain ("Dresden china") at Meissen, chemicals in and near Leipsic. Dobeln, Werdau, and Lossnitz are the chief seats of the Saxon leather trade; cigars are very extensively made in the town and district of Leipsic, and hats and pianofortes at Leipsic, Dresden, and Chemnitz. Paper is made chiefly in the west of the kingdom, but does not keep pace with the demand. Machinery of all kinds is produced, from the sewing-machines of Dresden to the steam-locomotives and marine-engines of Chemnitz. The last-named place, though the centre of the iron-manufacture of Saxony, has to import every pound of iron by railway. The leading branch is the machinery used in the industries of the country—mining, paper-making, and weaving. The very large printing trade of Leipsic encourages the manufacture of printing-presses in that city. In 1883–84 Saxony contained 744 active breweries and 683 distilleries. The tendency in this branch of industry is to extinguish the smaller establishments, and to form large joint-stock companies. The smelting and refining of the metal ores is also an important industry. The chief smelting works, at Freiberg, employed 1377 hands in 1883.

Trade.—Leipsic, with its famous and still frequented fairs, is the focus of the trade of Saxony. The fur trade between eastern and western Europe and the book-trade of Germany centre here. Chemnitz, Dresden, Plauen, Zwickau, Zittau, and Bautzen are the other chief commercial cities. The principal exports are wool, woollen, cotton, and linen goods, and the other produce of the factories and of the mines.

Communication.—The roads of Saxony are numerous and good. In 1883 there were 2304 miles of road in the kingdom. Saxony was the first German state to encourage and develop a railway system, and, although at first private enterprise led the way, the Saxon lines are now almost exclusively in the hands of Government. The first railway, between Leipsic and Althen, was opened on April 24, 1837. In 1837 there were 9 miles of state railway; in 1840, 71 miles; in 1850, 250; in 1870, 685; in 1880, 1184; and in 1884, 1395 miles, which, together with 75 miles of private line, mostly worked by the state, employed 24,400 hands. There are no canals in Saxony, and the only navigable river is the Elbe.

Population.—In 1880 the population of Saxony was 2,972,805, or 3½ per cent. of the total population of the German empire, on 2·7 per cent. of its area. The provisional returns of the census of 1885 gave a population of 3,179,168. With the exception of the free towns, Saxony is the most densely peopled member of the empire, and its population is increasing at a more rapid rate than is the case in any of the larger German states. In 1880 Saxony had 513·5 inhabitants per square mile, nearly three times as many as Bavaria; Prussia had 202·8, and the average for the empire was 216·7. More than half (56 per cent.) of the people live in communities of over 2000 inhabitants. The following table shows the distribution of the population among the four administrative districts. It will be noticed that the industrial district of Zwickau is the most densely peopled.

District.	Population.	Area in Square Miles.	Average per Square Mile.
Bautzen	351,326	953	368·6
Dresden	808,512	1675	482·7
Leipsic	707,826	1377	514·0
Zwickau	1,105,141	1784	619·4

The growth of the population since 1815, when the kingdom received its present limits has been as follows:—in 1815, 1,178,802; in 1830, 1,402,066; in 1840, 1,706,275; in 1864, 2,344,094; and in 1875, 2,760,586

The number of marriages per 1000 inhabitants is between 8 and 9; the birth-rate is 43, and the death-rate 30 per thousand. The annual increase of the population, on the average of the five years between 1875 and 1880, is at the rate of 1·48 per cent. The death-rate in Saxony is the highest in Germany, but its birth-rate is also the highest, except in the small state of Reuss (älterer Linie). In 1883, out of 132,209 births, 16,990, or 12·8 per cent., were illegitimate, and 4935, or 3·7 per cent., were still-born, and these rates represent tolerably accurately the average of the last few years. In the relative number of suicides (311 per 1,000,000 inhabitants) Saxony ranks highest among the European states (see Morselli, *Int. Sci. Ser.*, vol. xxxvi.). In 1884 1114 persons, of whom 861 were males, committed suicide. In the same year 17,706 persons were punished as vagrants.

The preponderating industrial activity of Saxony fosters the tendency of the population to concentrate in towns; with the exception of the free towns and Anhalt, no German state has so large a proportion of urban population, *i.e.*, inhabitants residing in communities of 2000 persons and upwards. In the empire as a whole 41·4 per cent. of the population is urban in this sense; in Saxony the proportion rises to 56·6 per cent. The largest towns are Dresden (245,515 inhabitants), the capital since the middle of the 16th century, Leipsic (170,076), and Chemnitz (110,693). Eighteen other towns, chiefly in the manufacturing district of Zwickau, have over 10,000 inhabitants, and thirty-five between 5000 and 10,000. The main results of the industrial census of 1882, which shows an increase of population since 1880 of 42,000, are summarized in the following table, which gives the number of persons (including wives, families, and dependants) supported by the several occupations, and the percentage of the total population:—

Occupations.	Persons.	Percentage.
1. Agriculture, forestry, and fishing	602,378	20
2. Industrial pursuits	1,695,895	56·2
3. Trade	360,675	12
4. Domestic servants and general labourers	53,584	1·7
5. Official, military, and professional classes	148,361	5
6. Not returned under any occupation	153,929	5·1

The people of Saxony are chiefly of pure Teutonic stock; a proportion are Germanized Slavs, and in the south of Bautzen there are still about 50,000 Wends, who retain their peculiar customs and language. In some villages near Bautzen hardly a word of German is spoken.

Religious Statistics.—About 97 per cent. of the inhabitants of Saxony are Protestants; between 6000 and 7000 are Jews, and the remainder, including the royal family, are mostly Roman Catholics. According to the religious census of 1880, 2,886,806 were Evangelicals, 74,333 Roman Catholics, 1467 German Catholics, 620 Anglicans, 453 Greek Catholics, 6518 Jews, and 339 "others." The Evangelical-Lutheran or State Church had 1130 pastors and 1393 places of worship in 1884. Its head is the minister "de evangelicis" so long as the king is Roman Catholic; and its management is vested in the Evangelical Consistory at Dresden. Its representative assembly, consisting of twenty-nine clergymen and thirty-five laymen is called a synod (*Synode*). The Roman Catholic Church has enjoyed the patronage of the reigning family since 1697, though it was the peace of Posen (1806) which placed it on a level with the Lutherans. By the peace of Prague, which transferred Upper Lusatia to Saxony in 1635, stipulations were made in favour of the Roman Catholics of that region, who are ecclesiastically in the jurisdiction of the cathedral chapter of St Peter at Bautzen, the dean of which has *ex officio* a seat in the first chamber of the diet. The other districts are managed by an apostolic vicariate at Dresden, under the direction of the minister of public worship. Two nunneries in Bautzen are the only conventual establishments in Saxony, and no others may be founded. Among the smaller religious sects the MORAVIAN BRETHREN (*q.v.*), whose chief seat is at Herrnhut, are perhaps the most interesting. In 1868 civil rights were declared to be independent of religious confession.

Education.—Saxony claims to be one of the most highly educated countries in Europe, and its foundations of schools and universities were among the earliest in Germany. Of the four universities founded by the Saxon electors at Leipsic, Jena, Wittenberg, and Erfurt, only the first is included in the present kingdom of Saxony. It is second only to Berlin in the number of its students. The endowed schools (Fürstenschulen) at Meissen and Grimma have long enjoyed a high reputation. Besides these there are 12 other gymnasia, 13 realschulen of the first class, and 19 of the second class, the organization of which resembles that already described in detail under PRUSSIA. There are nearly 4000 elementary and preparatory schools; and education is compulsory. Of 8856 recruits in 1883–84 only 13 (·15 per cent.) were unable to read and write. Saxony is particularly well-equipped with technical schools, the textile industries being especially fostered by numerous schools of weaving, embroidery, lace-making, &c.; but the mining academy at Freiberg and the school of forestry at Tharandt are probably the most widely known. The conservatory of music at Leipsic enjoys a world-wide reputation; not less the art-collections at Dresden.

Constitution.—Saxony is a constitutional monarchy and a member of the German empire, with four votes in the federal council and twenty-three in the reichstag. The constitution rests on a law promulgated on 4th September 1831, and subsequently amended. The crown is hereditary in the Albertine Saxon line, with reversion to the Ernestine line, of which the duke of Saxe-Weimar is now the head. The king enjoys a civil list of 2,940,000 marks or £147,000, while the apanages of the crown, including the payments to the other members of the royal house, amount to £15,670 more. The legislature (Ständeversammlung) is bicameral,—the constitution of the co-ordinate chambers being finally settled by a law of 1868 amending the enactment of 1831. The first chamber consists of the adult princes of the blood, five hereditary members from among the nobility, representatives of the Lutheran and Roman Catholic Churches, a representative of Leipsic university, twelve representatives of proprietors with landed property of an annual value of at least £150, elected for life, and ten representatives of the same class nominated for life by the crown, the chief magistrates of the eight principal towns, and five other life members, chosen without any restrictions by the king. The second chamber consists of thirty-five members from the towns and forty-five from the country, elected for six years. All male citizens twenty-five years old and upwards who pay one thaler (3s.) per annum in taxes have the suffrage; and all above thirty years of age who pay 10 thalers in annual taxes are eligible as members of the diet. The chambers must be convened at least once every two years; and extraordinary meetings take place at every change of ruler and on other special occasions. One-third of the members of the second chamber retire at the end of every period of two years. With the exception of the hereditary and some of the ex-officio members of the first chamber, the members of the diet are entitled to an allowance (12s.) for their daily expenses, as well as their travelling expenses. The executive consists of a responsible ministry (Gesammtministerium), with the six departments of justice, finance, home affairs, war, public worship and education, and foreign affairs. The minister of the royal household does not belong to the cabinet. The constitution also provides for the formation of a kind of privy council (Staatsrath), consisting of the cabinet ministers and other members appointed by the king.

For administrative purposes Saxony is divided into four Kreishauptmannschaften or governmental departments, subdivided into fifteen Amtshauptmannschaften and one hundred and sixteen Aemter. The cities of Dresden and Leipsic form departments by themselves. The supreme court of law for both civil and criminal cases is the Oberlandes-Gericht at Dresden, subordinate to which are seven other courts in the other principal towns and one hundred and five inferior tribunals. The German imperial code was adopted by Saxony in 1879. Leipsic is the seat of the imperial supreme court.

Finance.—The Saxon financial period embraces a space of two years. For 1884–5 the "ordinary" budget showed an income of £3,496,000, balanced by the expenditure, which included a reserve fund of £29,400. The chief sources of income were taxes (£1,377,293, including £899,975 of direct taxes), state-railways (£1,357,890), and the public forests and domains (£359,171). Lotteries brought in £232,270, and the royal porcelain manufacture £17,500. The chief expenditure was on the interest (£1,135,681) and sinking fund (£410,000) of the national debt. The "extraordinary" budget, applying exclusively to public works, showed an income and expenditure tallying at £882,800. The national debt, incurred almost wholly in making and buying railways, amounted on 1st January 1885 to £32,670,300, mostly paying interest at the rate of 4 per cent.

Army.—The Saxon army is modelled on that of Prussia. It forms the 12th army corps in the imperial German army, and consists of the 23rd and 24th divisions, with headquarters at Dresden and Leipsic respectively. On its peace-footing the Saxon contingent includes 20,500 infantry, 4180 cavalry, and 3000 artillery; in war it has 75,800 infantry, 6680 cavalry, and 8050 artillery.

The statistical information in the above article has been derived chiefly from the *Kalendar und statistischen Jahrbuch für das Königreich Sachsen* (Dresden, 1875–86) and the *Zeitschrift des Königlichen Sächsischen statistischen Bureau* (Dresden, 1855–85). The *Staatshandbuch für das Königreich Sachsen* is an annual official register. Engelhardt's *Vaterlandskunde für Schule und Haus im Königreich Sachsen* (Dresden, 3d ed. by Flathe, 1877) contains a comprehensive account of the country and its resources; and Daniel's *Handbuch der Geographie* (Leipsic, 1881) clearly summarizes the principal points. The standard history of Saxony is Büttiger's *Geschichte des Kurstaats und Königreichs Sachsens* (3 vols., Gotha, 3d ed., edited and continued by Flathe, 1867–73). Brandes's *Grundriss der Sächsischen Geschichte* (Leipsic, 1860) is a succinct but somewhat dry summary. Other leading works on the subjects are Gretschel, *Geschichte des Sächsischen Staats und Volks* (3 vols., Leipsic, 2d ed., continued by Fulau, 1862–63); Meynert, *Geschichte des Sächsischen Volks* (2 vols., Leipsic, 1853–39); Heinrich, *Sächsische Geschichte* (2 vols., Leipsic, 1810–12); and Wense, *Geschichte der Kursächsischen Staaten* (7 vols., Leipsic, 1802–12). The publication of the *Codex Diplomaticus Saxoniæ Regiæ* was begun in 1864 under the care of Gersdorf, and has been continued under Posse and Emerisch. Posse has also published *Die Markgrafen von Meissen und das Haus Wettin bis zu Konrad dem Grossen* (Leipsic, 1881); and Emerisch is the editor of the *Neue Archiv für Sächsische Geschichte* (Leipsic, 6 vols.), which contains full information as to works on the history of the country. Weber's older *Archiv für die Sächsische Geschichte* appeared in 1864 *sq.*; and a still older periodical publication on the subject is Von Braun's *Monatlicher Auszug aus der Geschichte des Kur- und Fürstlichen Hauses Sachsens* (6 vols., Langensalza, 1778–81). See also Tutschmann's *Atlas zur Geschichte der Sächsischen Länder* (Grimma, 1852). (F. MU.)

SAXONY, PRUSSIAN (Germ. *Provinz Sachsen*), one of the central provinces of the kingdom of Prussia, consists mainly of what was formerly the northern part of the kingdom of Saxony (ceded to Prussia in 1815), but also comprises the duchy of Magdeburg, the Altmark, and other districts, the connexion of which with Prussia is of earlier date. The area of the province is 9750 square miles. On the W. it is bounded by Hesse-Nassau, Hanover, and Brunswick, on the N. by Hanover and Brandenburg, on the E. by Brandenburg and Silesia, and on the S. by the kingdom of Saxony and the small Thuringian states. It is, however, very irregular in form, entirely surrounding parts of Brunswick and the Thuringian states, and itself possessing several "exclaves," while the northern portion of the province is almost entirely severed from the southern by the duchy of Anhalt. The major part of the province is flat and belongs to the great North-German plain, but the western and south-western districts are hilly, including parts of the Harz (with the Brocken, 3417 feet) and the Thuringian Forest. About nine-tenths of Prussian Saxony belongs to the system of the Elbe, the chief feeders of which within the province are the Saale and the Mulde, but a small district on the west drains into the Weser. The saltwater lakes between Halle and Eisleben are the only lakes of the kind in Prussia.

Saxony is on the whole the most fertile province of Prussia, and excels all the others in its produce of wheat and beetroot sugar (as well as in salt, brown coal, and copper), but the nature of its soil is very unequal. The best crop-producing districts lie near the base of the Harz Mountains, such as the "Magdeburger Börde" and the "Goldene Aue," and rich pasture lands occur in the river valleys, but the sandy plains of the Altmark, in the north part of the province, yield but a scanty return for the husbandman's toil.

Of the total area of the province 61 per cent. is occupied by arable land, 13 per cent. by meadows and pastures, and 20·5 per cent. by forests. Wheat and rye are raised in such abundance as to allow of a considerable export, while the other grain crops meet the local demand. The beetroot for sugar is grown chiefly in the district to the north of the Harz, as far as the Ohre, and on the banks of the Saale: and the amount of sugar produced (upwards of 400,000 tons in 1883–84) is nearly as much as that of all the rest of Prussia together. Flax, hops, and seeds for oil are also cultivated to some extent, and large quantities of excellent fruit are grown at the foot of the Harz and in the valleys of the Unstrut and the Saale. The market-gardening of Erfurt is well-known throughout Germany. Wine, of indifferent quality, is produced in the vicinity of Naumburg. Saxony is comparatively poor in timber, though there are some fine forests in the Harz and other hilly districts. Cattle-rearing is carried on with success in the river valleys, and more goats are met with here than in any other part of Prussia. The live-stock census for 1883 gave the following figures:—horses, 182,485; cattle, 624,973; sheep, 1,390,915; pigs, 719,627; goats, 261,225. (Compare the tables under PRUSSIA, vol. xx. p. 14.)

The principal underground wealth of Prussian Saxony consists of its salt and its brown coal, of both of which it possesses larger stores than any other part of the German empire. The rock-salt mines and brine springs (the chief of which are at Stassfurt, Schönebeck, Halle, &c.) produced in 1883–4 no less than 256,000 tons of salt, while the annual output of brown coal amounts to about 8 million tons, or more than the entire yield of the rest of Germany. Prussian Saxony also possesses three-fourths of the wealth of Germany in copper, the yield in 1883 amounting to 445,000 tons of ore and 11,000 tons of the pure metal. The copper mines are found chiefly in the Harz district. The other mineral resources include silver (one-third of the total German yield), pit-coal, pyrites, alum, plaster of Paris, sulphur, alabaster, and several varieties of good building-stone. Numerous mineral springs occur in the Harz.

In addition to the production of sugar already noted, the most important industries are the manufactures of cloth, leather, iron and steel wares (chiefly at Suhl and Sömmerda), spirits (Nord-

hausen), chemicals (Stassfurt), and starch. Beer is also browed extensively in Prussian Saxony, where the annual consumption per head (107 quarts) is considerably in excess of the average for the kingdom. Trade is much facilitated by the great waterway of the Elbe, as well as by a very complete system of railways. The chief articles are wool, grain, sugar, salt, lignite, and the principal manufactured products named above.

The population of the province of Saxony in 1880 was 2,312,007, including 2,154,663 Protestants, 145,518 Roman Catholics, and 6700 Jews; in 1885, according to provisional census returns, the population was 2,427,968. The great bulk of the inhabitants are of unmixed German stock, but many of those in the east part of the province have Wendish blood in their veins. The province belongs to the more thickly populated parts of Germany, the average being 237 persons to the square mile, and the ratio of the urban population to the rural is about as 4½ to 5½. The occupation census of 1882 gives the following percentages for the different classes of the population:—agricultural, 36·78; industrial, 35·18; trade, 8·15; domestic servants and day labourers, 8·70; official and professional, 5·12.

Prussian Saxony is divided into the three government districts of Magdeburg, Merseburg, and Erfurt. Magdeburg is the most important town and the headquarters of an army corps, but the provincial chambers meet at Merseburg. The province sends twenty members to the reichstag and thirty-eight to the Prussian house of representatives. The religious control of the district is in the hands of a consistory at Magdeburg; the Roman Catholics belong to the diocese of Paderborn. The university of Halle holds a high rank among German seats of learning, and the other educational requirements of the province are adequately provided for. The illiterate recruits of this province in 1883–4 numbered only 13 out of a total of 7868, equivalent to 0·17 per cent. The principal towns are Magdeburg (about 150,000 inhabitants, including Neustadt and Buckau), Halle (81,869), Erfurt (58,507), Halberstadt (34,048), Nordhausen, Mühlhausen, and Aschersleben.

The history of the present Prussian province of Saxony as such dates only from 1815, and is, of course, merely of local interest. The previous history of its constituent parts, of considerable more interest and importance, must be sought for under the various headings that will suggest themselves, such as SAXONY (*supra*), PRUSSIA, MAGDEBURG, ERFURT, &c. It is, however, worth noting that the province comprises the Altmark or old North Mark that formed the kernel of the Prussian state (see PRUSSIA, vol. xx. p. 2), and also the old bishoprics on the Elbe and Saale, from which as a centre the Christianization of Germany mainly spread. And the leading position of this part of Germany in promoting the Reformation should also be remembered.

SAY, JEAN BAPTISTE (1767–1832), an eminent French political economist, was born at Lyons 5th January 1767. His father, Jean Étienne Say, was of a Protestant family which had originally belonged to Nîmes, but had removed to Geneva for some time in consequence of the revocation of the edict of Nantes. Young Say was intended to follow a commercial career, and was accordingly sent, with his brother Horace, to England, and lived first at Croydon, in the house of a merchant, to whom he acted as clerk, and afterwards at London, where he was in the service of another employer. When, on the death of the latter, he returned to France, he was employed in the office of a life assurance company directed by Clavière, afterwards known in politics. It was Clavière who called his attention to the *Wealth of Nations*, and the study of that work revealed to him his vocation. His first literary attempt was a pamphlet on the liberty of the press, published in 1789. He worked under the celebrated Mirabeau on the *Courrier de Provence*. In 1792 he took part as a volunteer in the campaign of Champagne; in 1793 he assumed, in conformity with the Revolutionary fashion, the pre-name of *Atticus*, and became secretary to Clavière, then finance minister. He married in 1793 Mlle. Deloche, daughter of a former *avocat au conseil*; the young pair were greatly straitened in means in consequence of the depreciation of the assignats. From 1794 to 1800 Say edited a periodical entitled *La Décade philosophique, littéraire, et politique*, in which he expounded the doctrines of Adam Smith. He had by this time established his reputation as a publicist, and, when the consular government was established in the year VIII (1799), he was selected as one of the hundred members of the tribunate, and resigned, in consequence, the direction of the *Décade*. He published in 1800 *Olbie, ou Essai sur les moyens de réformer les mœurs d'une nation*.

In 1803 appeared his principal work, the *Traité d'Économie Politique*. In 1804, having shown his unwillingness to sacrifice his convictions for the purpose of furthering the designs of Napoleon, he was removed from the office of tribune, being at the same time nominated to a lucrative post, which, however, he thought it his duty to resign. He then turned to industrial pursuits, and, having made himself acquainted with the processes of the cotton manufacture, founded at Auchy, in the Pas de Calais, a spinning-mill which employed four or five hundred persons, principally women and children. He devoted his leisure hours to the improvement of his economic treatise, which had for some time been out of print, but which the censorship did not permit him to republish; and in 1814 he availed himself (to use his own words) of the sort of liberty arising from the entrance of the allied powers into France to bring out a second edition of the work, dedicated to the emperor Alexander, who had professed himself his pupil. In the same year the French Government sent him to study the economic condition of Great Britain. The results of his observations during his journey through England and Scotland appeared in a tract *De l'Angleterre et des Anglais*; and his conversations with distinguished men in those countries contributed, he tells us, to give greater correctness to the exposition of principles in the third edition of the *Traité*, which appeared in 1817. A chair of industrial economy was founded for him in 1819 at the Conservatoire des Arts et Métiers, in which he lectured with ability and success. In 1831 he was made professor of political economy at the Collége de France. He published in 1828–30 his *Cours Complet d'Économie Politique pratique*, which is in the main an expansion of the *Traité*, with practical applications. In his later years he became subject to attacks of nervous apoplexy, which increasingly reduced his strength. He lost his wife, to whom he was fondly attached, in January 1830; and from that time his health constantly declined. When the revolution of that year broke out, he was named a member of the council-general of the department of the Seine, but found it necessary to resign that position. He died at Paris 16th November 1832, leaving behind him a well-earned reputation for private worth and political integrity.

Say was essentially a propagandist, not an originator. His great service to mankind lies in the fact that he disseminated throughout Europe by means of the French language, and popularized by his clear and easy style, the economic doctrines of Adam Smith. It is true that his French panegyrists (and he is not himself free from censure on this score) are unjust in their estimate of Smith as an expositor; they give false or exaggerated ideas of his obscurity, his prolixity, and his want of method; and they accordingly extol too highly the merits of Say. Those merits are, however, real and considerable; his writings were without doubt very effective in diffusing throughout Continental Europe a taste for economic inquiry and a knowledge of its principal results. On the side of the philosophy of science Say is weak; his observations on that subject are usually commonplace or superficial. Thus he accepts the shallow dictum of Condillac that *toute science se réduit à une langue bien faite*. He recognizes political economy and statistics as alike sciences, and represents the distinction between them as having never been made before him, though he quotes what Smith had said of political arithmetic. Whilst always deserving the praise of honesty, sincerity, and independence, he is very inferior to his great predecessor in breadth of view on moral and political questions. In his general conception of human affairs there is a tendency to regard too exclusively the material side of things, which made him pre-eminently the economist of the French liberal *bourgeoisie*; thus Storch justly censures the levity with which he doubts the necessity of a public religious cultus, suggesting that enlightened nations might dispense with it "as the Pacific islanders do." He is inspired with the dislike and jealousy of Governments so often felt and expressed by thinkers formed in the social atmosphere of the last century. Soldiers are for him not merely

unproductive labourers, as Smith called them; they are rather "destructive labourers." "A nation might," he says, "strictly speaking, subsist without a government, each profession exchanging the fruits of its labours with the products of the labours of others,"—a remark which betrays the notion that economic coincides with social life. Taxes are uncompensated payments; they are plagues like hail, war, or depredation; they may fitly be described as of the nature of robbery. When he says, "Lorsqu'on vous vend un privilége, comme le droit de chasse, ou seulement de port d'armes, on vous vole votre droit naturel d'être armé pour le vous vendre après l'avoir volé," we see that we are still in the region of the *jus naturæ*, which lies at the basis of all the old economics.

Say is considered to have brought out the importance of capital as a factor in production more distinctly than the English economists, who unduly emphasized labour. The special doctrines most commonly mentioned as due to him are—(1) that of "immaterial products," and (2) what is called his "théorie des débouchés." Objecting, as Germain Garnier had done before him, to Smith's well-known distinction between productive and unproductive labour, he maintains that, production consisting in the creation or addition of a utility, all useful labour is productive. He is thus led to recognize immaterial products, whose characteristic quality is that they are consumed immediately and are incapable of accumulation; under this head are to be ranged the *services* rendered either by a person, a capital, or a portion of land, as, *e.g.*, the advantages derived from medical attendance, or from a hired house, or from a beautiful view. But in working out the consequences of this view Say is not free (as Storch has shown) from obscurities and inconsistencies; and by his comprehension of these immaterial products within the domain of economics he is confirmed in the error of regarding that science as filling the whole sphere which really belongs to sociology. His "théorie des débouchés" amounts to this, that, products being, in last analysis, purchased only with products, the extent of the markets (or outlets) for home products is proportional to the quantity of foreign productions; when the sale of any commodity is dull, it is because there is not a sufficient number, or rather value, of other commodities produced with which it could be purchased. Another proposition on which Say insists is that every value is consumed and is created only to be consumed. Values can therefore be accumulated only by being reproduced in the course or, as often happens, by the very act of consumption; hence his distinction between reproductive and unproductive consumption. We find in him other corrections or new presentations of views previously accepted, and some useful suggestions for the improvement of nomenclature.

Say's writings occupy vols. ix.–xii. of Guillaumin's *Collection des Principaux Économistes*. Among them are, in addition to those already mentioned, *Catéchisme d'Économie Politique*, 1815; *Petit Volume contenant quelques aperçus des Hommes et de la Société, Lettres à Malthus sur différens sujets d'Économie Politique*, 1820; *Epitomé des Principes de l'Économie Politique*, 1831. A volume of *Mélanges et Correspondance* was published posthumously by Charles Comte, author of the *Traité de Législation*, who was his son-in-law. To the above must be added an edition of Storch's *Cours d'Économie Politique*, which Say published in 1823 without Storch's authorization, with notes embodying a "critique amère et virulente," a proceeding which Storch justly resented.

The last edition of the *Traité d'Économie Politique* which appeared during the life of the author was the 6th (1826); the 6th, with the author's final corrections, was edited by the eldest son, Horace Émile Say, himself known as an economist, in 1846. The work was translated into English "from the 4th edition of the French" by C. R. Prinsep (1821), into German by Ludwig Heinrich von Jakob (1807) and by C. Ed. Morstadt (1818, and 1830), and, as Say himself informs us, into Spanish by José Queypo. The *Cours d'Économie Politique pratique*, from which Morstadt had given extracts, was translated into German by Max. Stirner (1845). The *Catéchisme* and the *Petit Volume* have also been translated into several European languages. An English version of the *Lettres à Malthus* appears in vol. xvii. of the *Pamphleteer*, 1821. (J. K. I.)

SCALA NOVA, SCALA NUOVA, or (Turkish) KUSHADASSI, also known as New Ephesus, a harbour on the west coast of Asia Minor, in the vilayet of Aidin, opposite the island of Samos. Before the opening of the Smyrna-Aidin railway its excellent roadstead was largely frequented by vessels trading with the Anatolian coast, and it has often been proposed to connect it with this system by a branch line, and thus enable it to compete with Smyrna as a trading centre. The population is estimated at 7000 to 10,000, of whom about 3000 are Greeks.

SCALIGER. For some account of the great Della Scala (Lat. *Scaliger*) family, the reader is referred to the article VERONA. The name has also been borne by two scholars of extraordinary eminence in the world of letters.

I. JULIUS CÆSAR SCALIGER (1484–1558), so distinguished by his learning and talents that, according to De Thou, no one of the ancients could be placed above him and the age in which he lived could not show his equal, was, according to his own account, a scion of the illustrious house of La Scala, for a hundred and fifty years princes of Verona, and was born in 1484 at the castle of La Rocca on the Lago de Garda. At the age of twelve he was presented to his kinsman the emperor Maximilian, and placed by him among his pages. He remained for seventeen years in the service of the emperor, following him in his expeditions through half Europe, and distinguishing himself no less by personal bravery as a soldier than by military skill as a captain. But he was unmindful neither of letters, in which he had the most eminent scholars of the day as his instructors, nor of art, which he studied with considerable success under Albert Dürer. In 1512 he fought at the battle of Ravenina, where his father and elder brother were killed. He there displayed prodigies of valour, and received the highest honours of chivalry from his imperial cousin, the emperor conferring upon him with his own hands the spurs, the collar, and the eagle of gold. But this was the only reward he obtained for his long and faithful devotion. He left the service of Maximilian, and after a brief employment by another kinsman, the duke of Ferrara, he decided to quit the military life, and in 1514 entered as a student at the university of Bologna. He determined to take holy orders, in the expectation that he would become in due time cardinal, and then be elected pope, when he would wrest from the Venetians his principality of Verona, of which the republic had despoiled his ancestors. But, though he soon gave up this design, he remained at the university until 1519. The next six years he passed at the castle of Vico Nuova, in Piedmont, as a guest of the family of La Rovère, at first dividing his time between military expeditions in the summer, in which he achieved great successes, and study, chiefly of medicine and natural history, in the winter, until a severe attack of rheumatic gout brought his military career to a close. Henceforth his life was wholly devoted to study. In 1525 he accompanied M. A. de la Rovère, bishop of Agen, to that city as his physician. Such is the outline of his own account of his early life. It was not until some time after his death that the enemies of his son first alleged that he was not of the family of La Scala, but was the son of Benedetto Bordone, an illuminator or schoolmaster of Verona; that he was educated at Padua, where he took the degree of M.D.; and that his story of his life and adventures before arriving at Agen was a tissue of fables. It certainly is supported by no other evidence than his own statements, some of which are inconsistent with well-ascertained facts.

The remaining thirty-two years of his life were passed almost wholly at Agen, in the full light of contemporary history. They were without adventure, almost without incident, but it was in them that he achieved so much distinction that at his death in 1558 he had the highest scientific and literary reputation of any man in Europe. A few days after his arrival at Agen he fell in love with a charming orphan of thirteen, Andiette de la Roque Lobejac. Her friends objected to her marriage with an unknown adventurer, but in 1528 he had obtained so much success as a physician that the objections of her family were overcome, and at forty-five he married Andiette, who was then sixteen. The marriage proved a complete success; it was followed by twenty-nine years of almost uninterrupted happiness, and by the birth of fifteen children.

A charge of heresy in 1538, of which he was acquitted by his friendly judges, one of whom was his friend Arnoul Le Ferron, was almost the only event of interest during these twenty-nine years, except the publication of his books, and the quarrels and criticisms to which they gave rise.

In 1531 he printed his first oration against Erasmus, in defence of Cicero and the Ciceronians. It is a piece of

vigorous invective, displaying, like all his subsequent writings, an astonishing knowledge and command of the Latin language, and much brilliant rhetoric, but full of vulgar abuse, and completely missing the point of the *Ciceronianus* of Erasmus. The writer's indignation at finding it treated with silent contempt by the great scholar, who thought it was the work of a personal enemy—Aleander—caused him to write a second oration, more violent, more abusive, with more self-glorification, but with less real merit than the first. The orations were followed by a prodigious quantity of Latin verse, which appeared in successive volumes in 1533, 1534, 1539, 1546, and 1574; of these, a friendly critic, Mr Pattison, is obliged to approve the judgment of Huet, who says: "par ses poésies brutes et informes Scaliger a deshonoré le Parnasse;" yet their numerous editions show that they commended themselves not only to his contemporaries but to succeeding scholars. A brief tract on comic metres (*De Comicis Dimensionibus*) and a work *De Causis Linguæ Latinæ*—the earliest Latin grammar on scientific principles, and following a scientific method—were his only other purely literary works published in his lifetime. His *Poetics* was left unpublished, and only appeared in 1561 after his death. With many paradoxes, with many criticisms which are below contempt, and many indecent displays of violent personal animosity,—especially in his reference to the unfortunate Dolet, over whose death he gloated with brutal malignity,—it yet contains much acute criticism, and shows that for the first time a writer had appeared who had formed an adequate idea of what such a treatise ought to be, and how it ought to be written.

But it is as a philosopher and a man of science that J. C. Scaliger ought to be judged. His tastes were for metaphysics and physics rather than for literature. Classical studies he regarded as an agreeable relaxation from severer pursuits. Whatever the truth or fable of the first forty years of his life, he had certainly been a most close and accurate observer, and had made himself acquainted with many curious and little-known phenomena, which he had stored up in a most tenacious memory, and which he was able to make use of with profit. His scientific writings are all in the form of commentaries, and it was not until his seventieth year that (with the exception of a brief tract on the *De Insomniis* of Hippocrates) he felt that any of them were sufficiently complete to be given to the world. In 1556 he printed his *Dialogue* on the *De Plantis* attributed to Aristotle, and in 1557 his *Exercitationes* on the work of Cardan, *De Subtilitate*. His other scientific works, *Commentaries* on Theophrastus's *History of Plants* and Aristotle's *History of Animals*, he left in a more or less unfinished state, and they were not printed until after his death. They are all marked by the same characteristics: arrogant dogmatism, violence of language, irritable vanity, a constant tendency to self-glorification, which we expect to find only in the charlatan and the impostor, are in him combined with extensive real knowledge, with acute reasoning, with an observation of facts and details almost unparalleled. He displays everywhere what Naudé calls "an intellect teeming with heroic thought." But he is only the naturalist of his own time. That he anticipated in any manner the inductive philosophy cannot be contended; his botanical studies did not lead him, like his contemporary Gesner, to any idea of a natural system of classification, and he rejected with the utmost arrogance and violence of language the discoveries of Copernicus. In metaphysics and in natural history Aristotle was a law to him, and in medicine Galen, but he was not a slave to the text or the details of either. He has thoroughly mastered their principles, and is able to see when his masters are not true to themselves. He corrects Aristotle by himself. He is in that stage of learning when the attempt is made to harmonize the written word with the actual facts of nature, and the result is that his works have no real scientific value. Their interest is only historical. His *Exercitationes* upon the *De Subtilitate* of Cardan (1557) is the book by which Scaliger is best known as a philosopher. Its numerous editions bear witness to its popularity, and until the final fall of Aristotle's physics it continued a popular text-book; as late as the middle of the seventeenth century an elaborate commentary upon it was published by Sperling, a professor at Wittenberg. We are astonished at the encyclopædic wealth of knowledge which the *Exercitationes* display, at the vigour of the author's style, at the accuracy of his observations, but are obliged to agree with Naudé that he has committed more faults than he has discovered in Cardan, and with Nisard that his object seems to be to deny all that Cardan affirms and to affirm all that Cardan denies. Yet it is no light praise that writers like Leibnitz and Sir William Hamilton recognize J. C. Scaliger as the best modern exponent of the physics and metaphysics of Aristotle. He died at Agen 21st October 1558.

2. Joseph Justus Scaliger (1540–1609), the greatest scholar of modern times, was the tenth child and third son of Julius Cæsar Scaliger and Andiette de la Roque Lobejac (see above). Born at Agen in 1540, he was sent when twelve years of age, with two younger brothers, to the college of Guienne at Bordeaux, then under the direction of Jean Gelida. An outbreak of the plague in 1555 caused the boys to return home, and for the next few years Joseph was his father's constant companion and amanuensis. The composition of Latin verse was the chief amusement of Julius in his later years, and he daily dictated to his son from eighty to a hundred lines, and sometimes more. Joseph was also required each day to write a Latin theme or declamation, but in other respects he seems to have been left to his own devices. The Latin verse of Julius, faulty as it is in all that constitutes poetry, yet displays a more extensive knowledge of the Latin language, and a greater command of its resources, than is to be found in the verse of any of his contemporaries; and this constant practice in writing and reading or speaking Latin, under the supervision of one who knew the language thoroughly, was probably the foundation of Joseph's Latin scholarship. But the companionship of his father was worth more to him than any mere instruction. He learned from Julius what real knowledge was, and that it did not consist in discussions on words and phrases; and to his father he owed it that he was not a mere scholar, but something more—an acute observer, never losing sight of the actual world, and aiming not so much at correcting texts as at laying the foundation of a science of historical criticism.

In 1558, on the death of his father, he proceeded to Paris, and spent four years at the university there. Of his life at Paris we know but little. Hitherto he had not studied Greek. Now he felt that not to know Greek was to know nothing. It was in the literature of Greece that he must look for the true key of antiquity, and he forthwith began to attend the lectures of Turnebus. But after two months he found out his mistake. He had much to learn before he could be in a position to profit by the lectures of the greatest Greek scholar of the time. He shut himself up in his chamber, and determined to teach himself. He read Homer in twenty-one days, and then went through all the other Greek poets, orators, and historians, forming a grammar for himself as he went along. From Greek, at the suggestion of Postel, he proceeded to attack Hebrew, and then Arabic; of both he acquired a respectable knowledge, though not the critical mastery which he possessed in Latin and Greek. The name of Dorat then stood as high as that of Turnebus as a Greek scholar, and far higher as a professor. He has left nothing to justify his reputation as a scholar; but as a teacher he undoubtedly possessed the highest qualifications. He was able not only to impart knowledge, but to kindle enthusiasm for his subject in the minds of his hearers and pupils. It was to Dorat that Scaliger owed the home which he found for the next thirty years of his life. In 1563 the professor recommended him to Louis de Chastaigner, the young lord of La Roche Pozay, as a companion in his travels. A close friendship sprung up between the two young men, which remained unbroken till the death of Louis in 1595. The travellers first proceeded to Rome. Here they found Muretus, who, when at Bordeaux and Toulouse, had been a great favourite and occasional visitor of Julius Cæsar at Agen. Muretus soon recognized Scaliger's merits, and devoted himself to making his stay at Rome as agreeable as possible, introducing him to all the men that were worth knowing. After visiting a large part of Italy, the travellers passed to England and Scotland, taking as it would seem La Roche Pozay on their way, for Scaliger's preface to his first book, the *Conjectanea in Varronem*, is dated there in December 1564. Scaliger formed an unfavourable opinion of the English. Their inhuman disposition, and inhospitable treatment of foreigners, especially impressed him. He was also disappointed in finding few Greek manuscripts and few learned men. It was not until a much later period that he became intimate with Richard Thompson and other Englishmen. In the course of his travels he had become a Protestant. His father, though he lived and died in the communion of the Church of Rome, had been suspected of heresy, and it is probable that Joseph's sympathies were early enlisted on the side of Protestantism. On his return to France he spent three years with the Chastaigners, accompanying them to their different chateaux in Poitou, as the calls of the civil war required their presence. In 1570 he accepted the invitation of Cujas, and proceeded to Valence to study jurisprudence under the greatest living jurist. Here he remained three years, profiting not only by the lectures but even more by the library of Cujas, which filled no less than seven or eight rooms and included five hundred manuscripts.

The massacre of St Bartholomew—occurring as he was about to accompany the bishop of Valence on an embassy to Poland—induced him with other Huguenots to retire to Geneva, where he was received with open arms, and was appointed a professor in the academy. He lectured on the *Organon* of Aristotle and the *De Finibus* of Cicero with much satisfaction to the students but with little to himself. He hated lecturing, and was bored to death with the importunities of the fanatical preachers; and in 1574 he returned to France, and made his home for the next twenty years in the chateaux of his friend the lord of La Roche Pozay. Of his life during this period we have for the first time interesting details and notices in the *Lettres françaises inédites de Joseph Scaliger*, edited by M. Tamizey de Larroque (Agen, 1881), a volume which adds much to our knowledge of Scaliger's life. Constantly moving from chateau to chateau through Poitou and the Limousin, as the exigencies of the civil war required, occasionally taking his turn as a guard when the chateau was attacked, at least on one occasion trailing a pike on an expedition against the Leaguers, with no access to libraries, and frequently separated even from his own books, his life during this period seems in one aspect most unsuited to study. He had, however, what so few contemporary scholars possessed—leisure, and freedom from pecuniary cares. In general he could devote his whole time to study; and it was during this period of his life that he composed and published the books which showed how far he was in advance of all his contemporaries as a scholar and a critic, and that with him a new school of historical criticism had arisen. His editions of the *Catalecta* (1574), of Festus (1576), of Catullus, Tibullus, and Propertius (1577), are the work of a man who writes not only books of instruction for learners, but who is determined himself to discover and communicate to others the real meaning and force of his author. Discarding the trivial remarks and groundless suggestions which we find in the editions of nearly all his contemporaries and predecessors, he first laid down and applied sound rules of criticism and emendation, and changed textual criticism, from a series of haphazard and frequently baseless guesses, into a "rational procedure subject to fixed laws" (Pattison). But these works, while proving Scaliger's right to the foremost place among his contemporaries as far as Latin scholarship and criticism were concerned, did not go beyond mere scholarship. It was reserved for his edition of Manilius (1579), and his *De Emendatione Temporum* (1583), to revolutionize all the received ideas of the chronology of ancient history,—to show for the first time that ancient chronology was of the highest importance as a corrector as well as a supplement to historical narrative, that ancient history is not confined to that of the Greeks and Romans, but also comprises that of the Persians, the Babylonians, and the Egyptians, hitherto neglected as absolutely worthless, and that of the Jews, hitherto treated as a thing apart and too sacred to be mixed up with the others, and that the historical narratives and fragments of each of these, and their several systems of chronology, must be carefully and critically compared together, if any true and general conclusions on ancient history are to be arrived at. It is this which constitutes his true glory, and which places Scaliger on so immeasurably higher an eminence than any of his contemporaries. Yet, while the scholars of his time admitted his pre-eminence, neither they nor those who immediately followed seem to have appreciated his real merit, but to have considered his emendatory criticism, and his skill in Greek, as constituting his claim to special greatness. "Scaliger's great works in historical criticism had overstepped any power of appreciation which the succeeding age possessed" (Pattison). His commentary on Manilius is really a treatise on the astronomy of the ancients, and it forms an introduction to the *De Emendatione Temporum*, in which he examines by the light of modern and Copernican science the ancient system as applied to epochs, calendars, and computations of time, showing upon what principles they were based.

In the remaining twenty-four years of his life he at once corrected and enlarged the basis which he had laid in the *De Emendatione*. With incredible patience, sometimes with a happy audacity of conjecture which itself is almost genius, he succeeded in reconstructing the lost *Chronicle* of Eusebius—one of the most precious remains of antiquity, and of the highest value for ancient chronology. This he printed in 1606 in his *Thesaurus Temporum*, in which he collected, restored, and arranged every chronological relic extant in Greek or Latin. In 1590 Lipsius retired from Leyden, where for twelve years he had been professor of Roman history and antiquities. The university and its protectors, the states-general of Holland and the prince of Orange, resolved to obtain Scaliger as his successor. He declined their offer. He hated the thought of lecturing, and there were those among his friends who erroneously believed that with the success of Henry IV. learning would flourish, and