

and the public debt was £2500. The tonnage entering and clearing was 307,000, and the imports and exports were valued at £190,000 and £240,000 respectively per annum. The sugar exports amounted to 10,000 tons. The population of the island was about 30,000.

ST CLAIR, a borough of the United States, in Schuylkill county, Pennsylvania, 3 miles east of Pottsville on the Reading and Philadelphia Railroad. It mainly depends on its coal-mines. The population was 5726 in 1870 and 4149 in 1880.

ST CLOUD, a village of France, on the left bank of the Seine, 7 miles west from the centre of Paris and 9½ by the railroad from Paris to Versailles, forming part of the canton of Sèvres and of the arrondissement of Versailles (Seine-et-Oise). Picturesquely built on a hill-slope, it overlooks the river, the Bois de Boulogne, and Paris; and, lying amid the foliage of its magnificent park and numerous villa gardens, it is one of the favourite resorts of the Parisians. The palace of St Cloud, which had been a summer residence for Napoleon I., Louis XVIII., Charles X., Louis Philippe, and Napoleon III., was burned by the Prussians in 1870 along with part of the village. In spite of the damage inflicted on the park at the same period, magnificent avenues still make it one of the finest rural haunts in the neighbourhood of Paris. It occupies a varied tract of 960 acres, and abounds in picturesque views. Every year in September a great fair, lasting three weeks, is held in the park; and within its precincts are situated the new national Sèvres porcelain manufacture and the Breteuil pavilion, the seat of the international metre commission. St Cloud possesses a church, erected about 1865, in the style of the 12th century, with an elegant stone spire; and here too has been established the upper normal school (science and letters) for the training of teachers (male) for the provincial normal schools of primary instruction. The population in 1881 was 4081, and 4126 in the commune.

Clodoald or Clod, grandson of Clovis, adopted the monastic life and left his name to the spot where his tomb was discovered after the lapse of 1200 years, in a crypt near the present church. He had granted the domain to the church of Paris, which possessed it as a fief till the 18th century. At St Cloud Henry III. and the king of Navarre (Henry IV.) established their camp during the League for the siege of Paris; and there the former was assassinated by Jacques Clément. The castle was at that time only a plain country house belonging to Pierre de Gondy, archbishop of Paris. Louis XIV. bought it for his brother, the duke of Orleans, who was the originator of the palace which perished in 1870. Peter the Great of Russia was received there in 1717 by the regent, whose grandson sold the palace to Marie Antoinette. It was in the orangery at St Cloud that Bonaparte executed the *coup d'état* of 18th Brumaire; and after he became emperor the palace was his favourite residence, and there he celebrated his marriage with Marie Louise. In 1815 it was the scene of the signing of the capitulation of Paris; and in 1830 from St Cloud Charles X. issued the orders which brought about his fall. Napoleon III. was there when he received the *senatus-consultum* which restored the empire in his favour (1st December 1852). Seized by the Prussians at the commencement of the investment of Paris in 1870, St Cloud was sacked during the siege.

ST CROIX, or SAINTE CROIX, one of the Danish West India Islands, is situated between 17° and 18° N. lat., about 40 miles south-south-east of St Thomas. Twenty-three miles long, and with a maximum width of 6 miles, it has an area estimated at 51,168 acres. Blue Mountain, the highest peak (1100 feet), lies in the range of hills running parallel with the coast in the western half of the island. The narrower eastern end is also hilly. In the centre and towards the west the surface is undulating, and towards the south flat with brackish lagoons. With the exception of about 4000 acres, the soil is everywhere productive; but only about one-third of the area is devoted to sugar-growing and one-sixth to pasture-land, the greater part of the remainder being either worthless brush-

wood (the haunt of small deer) or scanty timber. Besides little Negro hamlets there are two garrison towns—Christiansted (or popularly Bassin) on the north coast, with a small harbour 15 to 16 feet deep at the entrance, and Frederiksted (popularly West End) on the west coast, with an open roadstead. The population of the island was 23,194 in 1860, 22,760 in 1870, and 18,430 in 1880. This decrease is due to the comparative failure of the sugar-crops. Destruction of the forests (or some unsuspected cause) has brought diminished rainfall (from 20 to 34 inches per annum); and the belt of abandoned cane-ground has been steadily increasing. To help in checking this decay the Government constructed (1876) a great central factory, to which the juice is conveyed from the plantations by a system of pipes. Apart from the official element (mostly Danish), the white inhabitants of St Croix are almost wholly British either by birth or descent.

St Croix was discovered by Columbus on his second voyage. In 1651 France entrusted it to the Knights of Malta, and in 1733 it was purchased by Denmark for 750,000 livres (167,000 rixdollars). Slavery was abolished in 1848, and coolies began to be employed in 1863.

ST CYR, MARSHAL (1764-1830). See GOUVION ST CYR.

ST CYR-L'ÉCOLE, a village of France (Seine-et-Oise), 2½ miles west of Versailles at the end of the old park of Louis XIV. It had only 2712 inhabitants in 1881, and its importance is solely due to the famous military school now established in the convent which Madame de Maintenon founded for the education of noble young ladies in indigent circumstances. It was here that Racine's *Esther* and *Athalie* were first acted, having been written expressly for the pupils. Madame de Maintenon's tomb is still preserved in the chapel. The convent was suppressed at the Revolution, and the gardens are now partly transformed into parade-grounds. Two advanced forts of the new enceinte round Paris are situated at St Cyr.

ST DAVID'S, a village of Pembrokeshire, South Wales, and the seat of a bishopric, is situated in the valley of the Alan, 16 miles north-west of Haverfordwest, the nearest railway station, and 1½ miles east from the most westerly point of Wales. By some it is supposed to be the Roman Menapia. It consists of straggling and somewhat mean houses, occupying the crest of the hill above the cathedral. It was the birthplace of St David, the patron saint of Wales. The see, which includes nearly the whole of South Wales, was founded at least not later than the 7th century. Till the middle of the 12th century the bishops had archiepiscopal powers. The existing cathedral was begun in 1180. Its tower fell in 1220, crashing through the choir and transepts; when it was rebuilt the old western arch was retained. About the time the choir and transepts were repaired St Thomas's chapel was added. In 1248 an earthquake caused the walls of the nave to bulge. The chapels east of the presbytery were begun about this period, and the lady chapel between 1296 and 1328. The aisles of the nave and of the presbytery were raised by Bishop Gower (1328-1347), who set up the beautiful stone rood screen. The great window in the south transept in the Perpendicular style was erected in 1384, and the roofs renewed in the Late Perpendicular between 1461 and 1522. The west front was rebuilt by Nash about the end of the 18th century, and in 1862 extensive restorations, including the rebuilding of the two western piers of the tower and of the west front, were begun under the direction of Sir G. G. Scott. The cathedral contains the tomb of Edmund Tudor, father of Henry VII., and the shrine of St David. The total internal length of the building is 298 feet, the breadth of the nave (with aisles) 70 feet, and the breadth of the transepts 27 feet 3 inches. Parts of the rich interior decoration of the

nave are particularly worthy of notice. To the north of the cathedral are the picturesque ruins of the chapel of St Mary's College, founded in 1377. On the other side of the Alan are the remains of the bishop's palace, a masterpiece of Bishop Gower, particularly noteworthy for the beautiful arcade and parapet running round the whole building. It was partly unroofed by Bishop Barlow in 1536. In the centre of the village stands the ancient cross, 28 feet high, the steps of which were restored by Bishop Thirlwall in 1873. The place is without municipal government, its mayor being the officer of the bishop's manorial court. The population of the parish in 1881 was 2053.

ST DENIS, a town of France, in the department of Seine, 4½ miles north of Paris by the Northern Railway, which there divides into two branches leading respectively to Pontoise and Creil, is now a great manufacturing centre for machinery, boats, railway carriages, chemical products, printed goods, candles, beer, leather, and flour. Many of the works are supplied with water from the Crould and the Rouillon, which there fall into the Seine; and a canal extends from the Seine to La Villette, the great inner harbour of Paris. In 1881 the population was 43,127. The name and fame of the town are derived from the abbey founded by Dagobert on the spot where St Denis, the apostle of Paris, was interred (see below). The west front was built between 1137 and 1140. The right-hand tower is almost pure Romanesque; that on the left was Gothic, and its spire was carried to a height of 280 feet, but it was struck by lightning in 1837 and its reconstruction effected in so clumsy a manner that it had to be taken down till it was on a level with the roof of the nave. The rose window, now occupied by a clock face, dates from the 13th century. Under one of the three rows of arches above the main entrance runs an inscription recording the erection of the church by Suger with abbatial funds and its consecration in 1140. The porch formed by the first three bays of the church contains some remains of the basilica of Pippin the Short. The nave proper (235 feet long and 57 wide) has seven bays, and dates, as well as most of the choir and transepts, from the reign of St Louis. The gallery of the triforium is of open work and is filled in with glass. The secondary apse (*rond-point*) and its semicircular chapels (consecrated on 11th June 1144) are considered as the first perfected attempt at Gothic. The transepts have fine 13th-century façades, each with two unfinished towers; if the plan had been fully carried out there would have been six towers besides a central flèche in lead. In the chapels of the nave are the tombs of Louis XII. and Anne of Brittany (1591); of Henry II. and Catherine de' Medici, a masterpiece by Germain Pilon; of Louis of Orleans and Valentine of Milan, from the old church of the Celestines at Paris; of Francis I. and Claude of France, one of the most splendid tombs of the Renaissance, executed under the direction of Philibert Delorme; and that of Dagobert, which, though considerably dilapidated, ranks as one of the most curious of mediæval (13th-century) works of art. In the apse some stained glass of the time of Suger still remains. The crypt dates partly from Charlemagne and partly from Suger. In the centre is the vault where the coffin of the dead king used to lie until, to make room for that of his successor, it was removed to its final resting-place. It is at present occupied by the coffin of Louis XVIII., the last sovereign whose body was borne to St Denis and the only one whose ashes have been respected. Besides some fine statues, the crypt contains the Bourbon vault, in which were deposited the remains of Louis XVI. and Marie Antoinette, or at least whatever of them was recoverable from the cemetery of La Madeleine, where the Chapelle

Expiatoire now stands. The treasury of St Denis has been despoiled of its richest possessions, including the books now in the National Library; but it still contains crosses, altar-pieces, and reliquaries, notably those of St Denis and his two companions, Rusticus and Eleutherius, the three patrons of the basilica. The chapter of St Denis is usually composed of emeritus bishops with the title of canons; but the institution is about to be abolished (1886). St Denis possesses a fine town-house and a poor-house (300 beds). Its three forts formed part of the Parisian enceinte in 1870-71, and from 23d to 26th January 1871 the place was bombarded by the Prussians, who did considerable damage to the basilica.

St Denis, the ancient Catulliacum, was a town of no pretensions till the founding of its abbey. The process of rebuilding begun in the 12th century by Abbé Suger was completed under Philip the Bold. In the meantime St Louis caused mausoleums to be erected with figures of the princes already buried in the abbey; and from his time onwards to Henry II. every monarch in succession had his monument. Louis XIV. reduced the abbey to the rank of a priory; and at the Revolution it was suppressed, the tombs being violated and the church sacked (1793). Two years later all the remains and fragments that could be recovered were collected in the museum of the Petits Augustines at Paris; but the bronze tombs had been melted down, the stained-glass windows shattered, and large numbers of interesting objects stolen or lost. Napoleon established in the monastery a school for daughters of the members of the Legion of Honour, which has continued to flourish. Louis XVIII. caused all the articles belonging to St Denis to be brought back from the museums to their original site, and added numerous other monuments from the suppressed abbeys. But it was not till after 1848 that, under the intelligent direction of Viollet le Duc, the damage inflicted by revolutionist and unskilful restorer was repaired and the basilica recovered its original appearance. Charles the Bold instituted the famous fair of Landit, which was transferred from the neighbouring plain to St Denis itself in 1552, and is still held in the town. Sheep and parchment were formerly the staples. The abbey was pillaged by Charles the Bad, king of Navarre, in 1358, by the Burgundians and Flemings in 1411, and by the English in 1430. A sanguinary battle, in which the Catholic leader Constable Anne de Montmorency found victory and death, was fought between Huguenots and Catholics in the neighbourhood on 10th November 1567.

ST DENIS, the capital of RÉUNION (*q.v.*).

ST DIÉ, a town of France, chef-lieu of an arrondissement and a bishop's see in the department of Vosges, is situated on the right bank of the Meurthe, 1030 feet above the sea, on the railway from Lunéville (32 miles north-west) to Épinal (38 miles south-west). One portion of the town was rebuilt after the fire of 1757 in the regular and monumental style of Nancy; the other has a somewhat mean appearance. Several Alsatian manufacturers having emigrated to St Dié on the annexation of their country to Germany, the town has made great progress since 1871, and now possesses weaving factories, bleacheries, hosiery factories, engineering works, a tile work, and an extensive brewery. The cathedral has a Romanesque nave (10th century) and a Gothic choir; the portal, in red sandstone, dates from the 18th century. A fine cloister, recently restored and containing a beautifully executed stone pulpit, leads to the Petite Église or Notre Dame, a well-preserved specimen of early Romanesque. Other points of interest are the library, the museum, belonging to the Société Philomathique Vosgienne, the large schools, and the public fountains. The town commands an extensive view of the Vosges and is a convenient centre for excursions. The population in 1881 was 12,677 (15,312 in the commune).

St Dié (*Deodatum, Theodati, S. Deodati Fanum*) grew up round a monastery founded in the 6th century by St Deodatus of Nevers, who gave up his episcopal functions in order to retire to this place. In the 10th century the community became a chapter of canons; and among those who subsequently held the rank of provost or dean were Giovanni de' Medici (afterwards Pope Leo X.) and several princes of the house of Lorraine. Among the extensive privileges enjoyed by them was that of coining money. Though they co-operated in building the town walls, the canons and the dukes of

Lorraine soon became rival competitors for the authority over St. Dié. The institution of a town council in 1628, and the establishment under King Stanislaus of a bishopric which appropriated part of their spiritual jurisdiction, contributed greatly to diminish the influence of the canons; and with the Revolution they were completely swept away. During the 17th century the town was repeatedly sacked by the Burgundians under Charles the Bold, by the French, and by the Swedes. It was also partially destroyed by fire in 1065, 1155, 1554, and 1757. St. Dié was the seat of a very early printing press.

SAINTE-BEUVE, CHARLES AUGUSTIN (1804-1869), the most notable critic of our time, was born at Boulogne-sur-Mer on 23d December 1804. He was a posthumous child,—his father, a native of Picardy, and controller of town-dues at Boulogne, having married in this same year, at the age of fifty-two, and died before the birth of his son. The father was a man of literary tastes, and used to read, like his son, pencil in hand; his copy of the Elzevir edition of Virgil, covered with his notes, was in his son's possession, and is mentioned by him in one of his poems. Sainte-Beuve's mother was half English,—her father, a mariner of Boulogne, having married an Englishwoman. The little Charles Augustin was brought up by his mother, who never remarried, and an aunt, his father's sister, who lived with her. They were poor, but the boy, having learnt all he could at his first school at Boulogne, persuaded his mother to send him, when he was near the age of fourteen, to finish his education at Paris. He boarded with a M. Landry, and had for a fellow-boarder and intimate friend Charles Neate, afterwards fellow of Oriel College and member of parliament for the city of Oxford. From M. Landry's boarding-house he attended the classes, first of the Collège Charlemagne, and then of the Collège Bourbon, winning the head prize for history at the first, and for Latin verse at the second. In 1823 he began to study medicine, and continued the study with diligence and interest for nearly four years, attending lectures on anatomy and physiology and walking the hospitals. But meanwhile a Liberal newspaper, the *Globe*, was founded in 1827 by M. Dubois, one of Sainte-Beuve's old teachers at the Collège Charlemagne. M. Dubois called to his aid his former pupil, who, now quitting the study of medicine, contributed historical and literary articles to the *Globe*, among them two, which attracted the notice of Goethe, on Victor Hugo's *Odes and Ballads*. These articles led to a friendship with Victor Hugo and to Sainte-Beuve's connexion with the romantic school of poets, a school never entirely suited to his nature. In the *Globe* appeared also his interesting articles on the French poetry of the 16th century, which in 1828 were collected and published in a volume, and followed by a second volume containing selections from Ronsard. In 1829 he made his first venture as a poet with the *Vie, Poésies, et Pensées de Joseph Delorme*. His own name did not appear; but Joseph Delorme, that "Werther in the shape of Jacobin" and medical student," as Guizot called him, was the Sainte-Beuve of those days himself. About the same time was founded the *Revue de Paris*, and Sainte-Beuve contributed the opening article, with Boileau for its subject. In 1830 came his second volume of poems, the *Consolations*, a work on which Sainte-Beuve looked back in later life with a special affection. To himself it marked and expressed, he said, that epoch of his life to which he could with most pleasure return, and at which he could like best that others should see him. But the critic in him grew to prevail more and more and pushed out the poet. In 1831 the *Revue des Deux Mondes* was founded in rivalry with the *Revue de Paris*, and from the first Sainte-Beuve was one of the most active and important contributors. He brought out his novel of *Volupté* in 1834, his third and last volume of poetry, the *Pensées d'Août*, in 1837.

He himself thought that the activity which he had in the meanwhile exercised as a critic, and the offence which in some quarters his criticism had given, were the cause of the less favourable reception which this volume received. He had long meditated a book on Port Royal. At the end of 1837 he quitted France, accepting an invitation from the academy of Lausanne, where in a series of lectures his work on Port Royal came into its first form of being. In the summer of the next year he returned to Paris to revise and give the final shape to his work, which, however, was not completed for twenty years. In 1840 M. Cousin, then minister of public instruction, appointed him one of the keepers of the Mazarin Library, an appointment which gave him rooms at the library, and, with the money earned by his pen, made him for the first time in his life easy in his circumstances, so that, as he afterwards used to say, he had to buy rare books in order to spend his income. A more important consequence of his easier circumstances was that he could study freely and largely. He returned to Greek, of which a French schoolboy brings from his *lycée* no great store. With a Greek teacher, M. Pantasides, he read and re-read the poets in the original, and thus acquired, not, perhaps, a philological scholar's knowledge of them, but a genuine and invaluable acquaintance with them as literature. His activity in the *Revue des Deux Mondes* continued, and articles on Homer, Theocritus, Apollonius of Rhodes, and Meleager were fruits of his new Greek studies. He wrote also a very good article in 1844 on the Italian poet Leopardi; but in general his subjects were taken from the great literature which he knew best, that of his own country,—its literature both in the past and in the contemporary present. Seven volumes of "Portraits," contributed to the *Revue de Paris* and the *Revue des Deux Mondes*, exhibit his work in the years from 1832 to 1848, a work constantly increasing in range and value. In 1844 he was elected to the French Academy as successor to Casimir Delavigne, and was received there at the beginning of 1845 by Victor Hugo.

From this settled and prosperous condition the revolution of February 1848 dislodged him. In March of that year was published an account of secret-service money distributed in the late reign, and Sainte-Beuve was put down as having received the sum of one hundred francs. The smallness of the sum would hardly seem to suggest corruption; it appears probable that the money was given to cure a smoky chimney in his room at the Mazarin Library, and was wrongly entered as secret-service money. But Sainte-Beuve, who piqued himself on his independence and on a punctilious delicacy in money matters, was indignant at the entry, and thought the proceedings of the minister of public instruction and his officials, when he demanded to have the matter sifted, tardy and equivocal. He resigned his post at the Mazarin and accepted an offer from the Belgian Government of a chair of French literature in the university of Liège. There he gave the series of lectures on Chateaubriand and his contemporaries which was afterwards (in 1861) published in two volumes. He liked Liège, and the Belgians would have been glad to keep him; but the attraction of Paris carried him back there in the autumn of 1849. Louis Napoleon was then president. Disturbance was ceasing; a time of settled government, which lasted twenty years and corresponds with the second stage of Sainte-Beuve's literary activity, was beginning. Dr Véron, the editor of the *Constitutionnel*, proposed to him that he should supply that newspaper with a literary article for every Monday; and thus the *Causeries du Lundi* were started. They at once succeeded, and "gave the signal," as Sainte-Beuve himself says with truth, "for the return of letters." Sainte-Beuve now lived in the small house in the Rue Mont-Parnasse (No. 11) which he occu-

ped for the remainder of his life, and where in 1850 his mother, from whom he seems to have inherited his good sense, tact, and finesse, died at the age of eighty-six. For three years he continued writing every Monday for the *Constitutionnel*; then he passed, with a similar engagement, to the *Moniteur*. In 1857 his Monday articles began to be published in volumes, and by 1862 formed a collection in fifteen volumes; they afterwards were resumed under the title of *Nouveaux Lundis*, which now make a collection of thirteen volumes more. In 1854 M. Fortoul nominated him to the chair of Latin poetry at the College of France. His first lecture there was received with interruptions and marks of disapprobation by many of the students, displeased at his adherence to the empire; at a second lecture the interruption was renewed. Sainte-Beuve had no taste for public speaking and lecturing; his *frontis mollities*, he said, unfitted him for it. He was not going to carry on a war with a party of turbulent students; he proposed to resign, and when the minister would not accept his resignation of his professorship he resigned its emoluments. The *Étude sur Virgile*, a volume published in 1857, contains what he had meant to be his first course of lectures. He was still a titular official of public instruction; and in 1858 his services were called for by M. Rouland, then minister of public instruction, as a lecturer (*maître de conférences*) on French literature at the École Normale Supérieure. This work he discharged with assiduity and success for four years. In 1859 he was made commander of the Legion of Honour, having twice previously to 1848 refused the cross. During the years of his official engagement his Monday contributions to the *Moniteur* had no longer been continuous; but in 1862 an arrangement was proposed by which he was to return to the *Constitutionnel* and again supply an article there every Monday. He consented, at the age of fifty-seven, to try this last pull, as he called it, this "dernier coup de collier"; he resigned his office at the École Normale and began the series of his *Nouveaux Lundis*. They show no falling off in vigour and resource from the *Causeries*. But the strain upon him of his weekly labour was great. "I am not a *monsieur* nor a gentleman," he writes in 1864, "but a workman by the piece and by the hour." "I look upon myself as a player forced to go on acting at an age when he ought to retire, and who can see no term to his engagement." He had reason to hope for relief. Except himself, the foremost literary men in France had stood aloof from the empire and treated it with a hostility more or less bitter. He had not been hostile to it: he had accepted it with satisfaction, and had bestowed on its official journal, the *Moniteur*, the lustre of his literature. The prince Napoleon and the princess Mathilde were his warm friends. A senatorship was mentioned; its income of £1600 a year would give him opulence and freedom. But its coming was delayed, and the strain upon him continued for some time longer. When at last in April 1865 he was made senator, his health was already seriously compromised. The disease of which he died, but of which the doctors did not ascertain the presence until his body was opened after his death—the stone—began to distress and disable him. He could seldom attend the meetings of the senate; the part he took there, however, on two famous occasions, when the nomination of M. Renan to the College of France came under discussion in 1867 and the law on the press in the year following, provoked the indignation of the great majority in that conservative assembly. It delighted, however, all who "belonged," to use his own phrase, "to the diocese of free thought"; and he gave further pleasure in this diocese by leaving at the beginning of 1869 the *Moniteur*, injudiciously managed by the Government and M. Rouher, and contributing to a

Liberal journal, the *Temps*. His literary activity suffered little abatement, but the attacks of his malady, though borne with courage and cheerfulness, became more and more severe. Pain made him at last unable to sit or write; he could only stand or lie. He died in his house in the Rue Mont-Parnasse on the 13th of October 1869. He had inherited an income of four thousand francs a year from his mother, and he left it six thousand; to the extent of eighty pounds a year and no further had literature and the senatorship enriched him. By his will he left directions that his funeral was to be without religious rites, quite simple, and with no speeches at the grave except a few words of thanks from one of his secretaries to those present. There was a great concourse; the Paris students, who had formerly interrupted him, came now to do honour to him as a Liberal and a champion of free thought—a senator they could not but admit—undeniably, alas, a senator, but *oh, si peu!* Yet his own account of himself is the best and truest,—an account which lays no stress on his Liberalism, no stress on his championship of free thought, but says simply: "Devoted to my profession as critic, I have tried to be more and more a good, and, if possible, an able workman."

The work of Sainte-Beuve divides itself into three portions—his poetry, his criticism before 1848, and his criticism after that year. His novel of *Volupté* may properly go with his poetry.

We have seen his tender feeling for his poetry, and he always maintained that, when the "integrating molecule," the foundation of him as a man of letters, was reached, it would be found to have a poetic character. And yet he declares, too, that it is never without a sort of surprise and confusion that he sees his verses detached from their context and quoted in public and in open day. They do not seem made for it, he says. This admirable critic knew, indeed, what a Frenchman may be pardoned for not willingly perceiving, and what even some Englishmen try to imagine that they do not perceive, the radical inadequacy of French poetry. For us it is extremely interesting to hear Sainte-Beuve on this point, since it is to English poetry that he resorts in order to find his term of comparison, and to award the praise which to French poetry he refuses. "Since you are fond of the poets," he writes to a friend, "I should like to see you read and look for poets in another language, in English for instance. There you will find the most rich, the most dulcet, and the most new poetical literature. Our French poets are too soon read; they are too slight, too mixed, too corrupted for the most part, too poor in ideas even when they have the talent for strophe and line, to hold and occupy for long a serious mind." And again: "If you knew English you would have treasures to draw upon. They have a poetical literature far superior to ours, and, above all, sounder, more full. Wordsworth is not translated; these things are not to be translated; you must go to the fountain-head for them. Let me give you this advice: learn English."

But, even as French poetry, Sainte-Beuve's poetry had faults of its own. Critics who found much in it to praise yet pronounced it a poetry "narrow, puny, and stifled," and its style "slowly dragging and laborious." Here we touch on a want which must no doubt be recognized in him, which he recognized in himself, and whereby he is separated from the spirits who succeed in uttering their most highly inspired note and in giving their full measure,—some want of flame, of breath, of pinion. Perhaps we may look for the cause in a confession of his own: "I have my weaknesses; they are those which gave to King Solomon his disgust with everything and his satiety with life. I may have regretted sometimes that

I was thus extinguishing my fire, but I did not ever pervert my heart." It is enough for us to take his confession that he extinguished or impaired his fire.

Yet his poetry is characterized by merits which make it readable still and readable by foreigners. So far as it exhibits the endeavour of the romantic school in France to enlarge the vocabulary of poetry and to give greater freedom and variety to the alexandrine, it has interest chiefly for readers of his own nation. But it exhibits more than this. It exhibits already the genuine Sainte-Beuve, the author who, as M. Duvergier de Hauranne said in the *Globe* at the time, "sent à sa manière et écrit comme il sent," the man who, even in the forms of an artificial poetry, remains always "un penseur et un homme d'esprit." That his Joseph Delorme was not the Werther of romance, but a Werther in the shape of Jacobin and medical student, the only Werther whom Sainte-Beuve by his own practical experience really knew, was a novelty in French poetical literature, but was entirely characteristic of Sainte-Beuve. All his poetry has this stamp of direct dealing with common things, of plain unpretending reality and sincerity; and this stamp at that time made it, as Béranger said, "a kind of poetry absolutely new in France." It found, therefore, with all its shortcomings, friends in men so diverse as Béranger, Lamartine, Jouffroy, Beyle. Whoever is interested in Sainte-Beuve should turn to it, and will be glad that he has done so.

It has been the fashion to disparage the criticism of the *Critiques et Portraits Littéraires*, the criticism anterior to 1848, and to sacrifice it, in fact, to the criticism posterior to that date. Sainte-Beuve has himself indicated what considerations ought to be present with us in reading the *Critiques et Portraits*, with what reserves we should read them. They are to be considered, he says, "rather as a dependency of the elegiac and romanesque part of my work than as express criticisms." "The *Revue des Deux Mondes*," he adds, which published them, was young in those days, "mixed a good deal of its wishes and its hopes with its criticism, sought to explain and to stimulate rather than to judge. The portraits there of contemporary poets and romance-writers can in general be considered, whether as respects the painter or as respects the models, as youthful portraits only; *juvenis juvenem pinxit*." They have also the copiousness and enthusiasm of youth; they have also its exuberance. He judged in later life Chateaubriand, Lamartine, Victor Hugo, more coolly, judged them differently. But the *Critiques et Portraits* contain a number of articles on personages, other than contemporary French poets and romance-writers, which have much of the soundness of his later work, and, in addition, an abundance and fervour of their own which are not without their attraction. Many of these are delightful reading. The articles on the Greek poets and on Leopardi have been already mentioned. Those on Boileau, Molière, Daunou, and Fauriel, on Madame de la Fayette and Mademoiselle Aïssé, may be taken as samples of a whole group which will be found to support perfectly the test of reading, even after we have accustomed ourselves to the later work of the master. Nay, his soberness and tact show themselves even in this earlier stage of his criticism, and even in treating the objects of his too fervid youthful enthusiasm. A special object of this was Victor Hugo, and in the first article on him in the *Portraits Contemporains* we have certainly plenty of enthusiasm, plenty of exuberance. We have the epithets "adorable," "sublime," "supreme," given to Victor Hugo's poetry; we are told of "the majesty of its high and sombre philosophy." All this is in the vein of Mr George Gilfillan. But the article next following this, and written only four years later, in 1835, is the article of a critic, and takes the points of objection, seizes the weak side of

Victor Hugo's poetry, how much it has of what is "creux," "sonore," "artificiel," "voulu," "théâtral," "violent," as distinctly as the author of the *Causeries* could seize it. "The Frank, energetic and subtle, who has mastered to perfection the technical and rhetorical resources of the Latin literature of the decadence," is a description never to be forgotten of Victor Hugo as a poet, and Sainte-Beuve launches it in this article, written when he was but thirty years old, and still a painter of "portraits de jeunesse" only.

He had thus been steadily working and growing; nevertheless, 1848 is an epoch which divides two critics in him of very unequal value. When, after that year of revolution and his stage of seclusion and labour at Liège, he came back to Paris in the autumn of 1849 and commenced in the *Constitutionnel* the *Causeries du Lundi*, he was astonishingly matured. Something of fervour, enthusiasm, poetry, he may have lost, but he had become a perfect critic—a critic of measure, not exuberant; of the centre, not provincial; of keen industry and curiosity, with "Truth" (the word engraved in English on his seal) for his motto; moreover, with gay and amiable temper, his manner as good as his matter,—the "critique souriant," as, in Charles Monselet's dedication to him, he is called.

Merely to say that he was all this is less convincing than to show, if possible, by words of his own, in what fashion he was all this. The root of everything in his criticism is his single-hearted devotion to truth. What he called "fictions" in literature, in politics, in religion, were not allowed to influence him. Some one had talked of his being tenacious of a certain set of literary opinions. "I hold very little," he answers, "to literary opinions; literary opinions occupy very little place in my life and in my thoughts. What does occupy me seriously is life itself and the object of it." "I am accustomed incessantly to call my judgments in question anew, and to re-cast my opinions the moment I suspect them to be without validity." "What I have wished" (in *Port Royal*) "is to say not a word more than I thought, to stop even a little short of what I believed in certain cases, in order that my words might acquire more weight as historical testimony." To all exaggeration and untruth, from whatever side it proceeded, he had an antipathy. "I turn my back upon the Michelets and Quinets, but I cannot hold out my hand to the Veullots." When he was writing for the *Moniteur* he was asked by the manager of the paper to review a book by an important personage, a contributor; his answer is a lesson for critics and paints him exactly. "I should like to say yes, but I have an insurmountable difficulty as to this author; he appears to me to compromise whatever he touches; he is violent, and has not the tradition of the things he talks about. Thus his article on Condorcet, which the *Moniteur* inserted, is odious and false; one may be severe upon Condorcet, but not in that tone or in that note. The man has no insight—a defect which does not prevent him from having a pen with which at a given moment he can flourish marvellously. But, of himself, he is a gladiator and a desperado. I must tell you, my dear sir, that to have once named him with compliment in some article of mine or other is one of my self-reproaches as a man of letters. Let me say that he has not attacked me in any way; it is a case of natural repulsion."

But Sainte-Beuve could not have been the great critic he was had he not had, at the service of this his love of truth and measure, the conscientious industry of a Benedictine. "I never have a holiday. On Monday towards noon I lift up my head, and breathe for about an hour; after that the wicket shuts again and I am in my prison cell for seven days." The *Causeries* were at this price. They came once a week, and to write one of them as he

wrote it was indeed a week's work. The "irresponsible indolent reviewer" should read his notes to his friend and provider with books, M. Paul Chéron of the National Library. Here is a note dated the 2d of January 1853: "Good-day and a happy New Year. To-day I set to work on Grimm. A little dry; but after St François de Sales" (his Monday article just finished) "one requires a little relief from roses. I have of Grimm the edition of his *Correspondence* by M. Taschereau. I have also the *Memoirs* of Madame d'Épinay, where there are many letters of his. But it is possible that there may be notices of him mentioned in the bibliographical book of that German whose name I have forgotten. I should like, too, to have the first editions of his *Correspondence*; they came out in successive parts." Thus he prepared himself, not for a grand review article once a quarter, but for a newspaper review once a week.

His adhesion to the empire caused him to be habitually represented by the Orleanists and the Republicans as without character and patriotism, and to be charged with baseness and corruption. The Orleanists had, in a great degree, possession of the higher press in France and of English opinion,—of Liberal English opinion more especially. And with English Liberals his indifference to parliamentary government was indeed a grievous fault in him; "you Whigs," as Croker happily says, "are like quack doctors, who have but one specific for all constitutions." To him either the doctrine of English Liberals, or the doctrine of Republicanism, applied absolutely, was what he called a "fiction," one of those fictions which "always end by obscuring the truth." Not even on M. de Tocqueville's authority would he consent to receive "les hypothèses dites les plus honorables,"—"the suppositions which pass for the most respectable." All suppositions he demanded to sift, to see them at work, to know the place and time and men to which they were to be applied. For the France before his eyes in 1849 he thought that something "solid and stable"—*un mur*, "a wall," as he said—was requisite, and that the government of Louis Napoleon supplied this wall. But no one judged the empire more independently than he did, no one saw and denounced its faults more clearly; he described himself as being, in his own single person, "the *gauche* of the empire," and the description was just.

To these merits of mental independence, industry, measure, lucidity, his criticism adds the merit of happy temper and disposition. Goethe long ago noticed that, whereas Germans reviewed one another as enemies whom they hated, the critics of the *Globe* reviewed one another as gentlemen. This arose from the higher social development of France and from the closer relations of literature with life there. But Sainte-Beuve has more, as a critic, than the external politeness which once at any rate distinguished his countrymen: he has a personal charm of manner due to a sweet and humane temper. He complained of *un peu de dureté*, "a certain dose of hardness," in the new generation of writers. The personality of an author had a peculiar importance for him; the poetical side of his subjects, however latent it might be, always attracted him and he always sought to extricate it. This was because he had in himself the moderate, gracious, amiably human instincts of the true poetic nature. "Let me beg of you," he says in thanking a reviewer who praised him, "to alter one or two expressions at any rate. I cannot bear to have it said that I am the first in anything whatever, as a writer least of all; it is not a thing which can be admitted, and these ways of classing people give offence." Literary man and loyal to the French Academy as he was, he can yet write to an old friend after his election: "All these academies, between you and me, are

pieces of childishness; at any rate the French Academy is. Our least quarter of an hour of solitary reverie or of serious talk, yours and mine, in our youth, was better employed; but, as one gets old, one falls back into the power of these nothings; only it is well to know that nothings they are."

Perhaps the best way to get a sense of the value and extent of the work done in the last twenty years of his life by the critic thus excellently endowed is to take a single volume of the *Causeries du Lundi*, to look through its list of subjects, and to remember that with the qualities above mentioned all these subjects are treated. Any volume will serve; let us take the fourth. This volume consists of articles on twenty-four subjects. Twenty of these are the following:—Mirabeau and Sophie, Montaigne, Mirabeau and Comte de la Marck, Mademoiselle de Scudéry, André Chénier as politician, Saint-Évremond and Ninon, Joseph de Maistre, Madame de Lambert, Madame Necker, the Abbé Maury, the Duc de Lauzun of Louis XVI.'s reign, Marie Antoinette, Buffon, Madame de Maintenon, De Bonald, Amyot, Mallet du Pan, Marmontel, Chamfort, Ruhlère. Almost every personage is French, it is true; Sainte-Beuve had a maxim that the critic should prefer subjects which he possesses familiarly. But we should recognize more fully than we do the immense importance and interest of French literature. Certain productions of this literature Mr Saintsbury may misjudge and overpraise; but he is entirely right in insisting on its immense importance. More than any modern literature it has been in the most intimate correspondence with the social life and development of the nation producing it. Now it so happens that the great place of France in the world is very much due to her eminent gift for social life and development; and this gift French literature has accompanied, fashioned, perfected, and continues to reflect. This gives a special interest to French literature, and an interest independent even of the excellence of individual French writers, high as that often is. And nowhere shall we find such interest more completely and charmingly brought out than in the *Causeries du Lundi* and the *Nouveaux Lundis* of the consummate critic of whom we have been speaking. As a guide to bring us to a knowledge of the French genius and literature he is unrivalled,—perfect, so far as a poor mortal critic can be perfect, in knowledge of his subject, in judgment, in tact, and tone. Certain spirits are of an excellence almost ideal in certain lines; the human race might willingly adopt them as its spokesmen, recognizing that on these lines their style and utterance may stand as those, not of bounded individuals, but of the human race. So Homer speaks for the human race, and with an excellence which is ideal, in epic narration; Plato in the treatment at once beautiful and profound of philosophical questions; Shakespeare in the presentation of human character; Voltaire in light verse and ironical discussion. A list of perfect ones, indeed, each in his own line! and we may almost venture to add to their number, in his line of literary criticism, Sainte-Beuve. (M. A.)

SAINTE-CLAIRE DEVILLE, ÉTIENNE HENRI (1818-1881), French chemist, was born on 11th March 1818 in the island of St Thomas, West Indies, where his father was French consul. He was educated in Paris along with his elder brother Charles at the Collège Rollin. In 1844, having graduated as doctor of medicine and doctor of science, he was appointed dean of the new faculty of science at Besançon by Thenard. In 1851 he succeeded Balard in the École Normale and in the Sorbonne. He died at Boulogne-sur-Seine on 1st July 1881.

Sainte-Claire Deville began his experimental work in 1841 with investigations on oil of turpentine and balsam of tolu, in the course

of which he discovered the hydro-carbon toluene. But he soon abandoned organic chemistry, and his most important work was in inorganic and thermal chemistry. In 1850 he discovered anhydrous nitric acid, a substance interesting not only in itself but as the first obtained of an important group, the so-called "anhydrides" of the monobasic acids. In 1855 he succeeded in obtaining aluminium in mass. This metal, of which clay is the hydrated silicate, is of course one of the most abundant of metals, but was not obtained in the metallic state until Wöhler in 1827 decomposed its chloride by means of potassium. The aluminium thus prepared was in the form of a fine powder, and, although the isolation of the metal was of great theoretical importance, there did not seem much prospect of a practical application of the discovery. In 1845 Wöhler returned to the subject and by using large quantities of material obtained small globules of an obviously metallic character. Deville, who knew only Wöhler's paper of 1827, set to work to prepare aluminium, not for the sake of the metal itself, but with the view of procuring by the action of aluminium on chloride of aluminium a lower chloride from which a series of new compounds corresponding to the ferrous salts might be obtained. He did not succeed in this, but he did succeed in producing globules of aluminium of considerable size. This led him to perfect the process, and ultimately he devised a method by which aluminium could be prepared on a large scale. The first use to which he put the metal was to make a medal with the name of Wöhler and the date 1827. In connexion with the preparation of aluminium may be mentioned Deville's investigations, partly with Wöhler, into the allotropic forms of silicon and boron.

Along with Debray, Deville studied the platinum metals; their object was on the one hand to prepare the six metals in a state of purity and on the other to obtain a suitable metal for the standard metre. In the course of these investigations large quantities of platinum and of the alloys of platinum and iridium were fused and cast, and the methods used for obtaining the necessary high temperatures were applied to the fusion of other refractory metals, such as cobalt, nickel, chromium, and manganese.

Along with Troost, Deville devised a method for determining the density of vapours at very high temperatures and applied it to the cases of sulphur, selenium, tellurium, zinc, cadmium, and many other substances boiling at temperatures up to 1400° C. The interesting and important results have been already described (see CHEMISTRY and MOLECULE). Deville made a large number of ingenious experiments on the artificial production of minerals. Among these may be specially mentioned the formation of apatite and isomorphous minerals and of crystallized oxides. Deville and Caron found that when the vapour of a metallic fluoride acts on fused boracic acid the fluorine and the oxygen change places, a metallic oxide remains in crystals, while the gaseous fluoride of boron escapes. In this way they prepared corundum (crystallized oxide of aluminium) and sapphire, ruby and emerald; coloured forms of corundum were obtained by mixing small quantities of fluoride of chromium with the fluoride of aluminium. Another method discovered by Deville for the preparation of crystallized oxides is of great interest. When an amorphous oxide—such as amorphous ferric oxide—is heated to redness and exposed to a slow current of hydrochloric acid gas, it gradually changes into a crystalline oxide of the same composition. In this way Deville obtained hæmatite, tinstone, periclase, and other crystalline oxides. This conversion of an amorphous into a crystalline substance without change of composition, by the action of a gas (in this case hydrochloric acid) which itself undergoes no change, is one of those mysterious processes which used to be referred to a "catalytic force" or called "actions by contact"; like many such actions, this has been shown by Deville to belong to the same class of phenomena as dissociation.

This leads us to Deville's greatest contribution to general chemistry. Many chemical actions have been long known which take place either in the one or the other sense according to certain conditions. For instance, if a tube containing metallic iron is heated to redness and steam passed through it, water is decomposed, black oxide of iron is formed, and hydrogen escapes. If, on the other hand, the tube is filled with black oxide of iron and hydrogen passed through, the oxide is reduced and water is formed. Both of these opposite changes occur at the very same temperature. Again, a solution of sulphate of potassium is completely decomposed by passing a current of carbonic acid gas through it for a sufficient time, sulphuretted hydrogen being given off and bicarbonate remaining in solution. But exactly the opposite happens if we begin with bicarbonate and pass sulphuretted hydrogen gas through it: carbonic acid gas escapes and the solution ultimately contains nothing but sulph-hydrate. An imperfect, unsatisfactory explanation of some of the phenomena of which these are examples was given by Berthollet; it remained for Deville to give a general theory and show their relation to such physical phenomena as

¹ The metre commission fused a quarter of a ton of the alloy at a single operation.

evaporation and condensation. This he did by his experimental work on "Dissociation" and his theoretical discussion of the facts in papers published in the *Comptes Rendus*. He gave a very complete and clear account of the whole subject in a lecture delivered before the Chemical Society of Paris in 1866.

As illustrations we shall take a few cases as different from one another as possible.

It has long been known that carbonate of lime—limestone—when heated is decomposed into quicklime and carbonic acid gas, and that this decomposition takes place the more quickly the more thoroughly the carbonic acid produced is removed. Sir James Hall showed that, if the carbonate of lime is heated in a closed vessel strong enough to resist the pressure of the carbonic acid gas, it can be fused, only a small part undergoing decomposition. Deville examined this relation quantitatively and showed that, if in a closed vessel we have quicklime, carbonate of lime, and carbonic acid gas, the pressure of the carbonic acid gas depends on the temperature only, and is quite independent of the quantity of the quicklime or of the carbonate of lime, as long as there is some, however little, of both, and is also quite uninfluenced by the presence of other gases. It will be seen that this case exactly resembles that of the evaporation of water. In a closed vessel containing liquid water and water-vapour the pressure of the water-vapour depends on the temperature only and is independent of the quantity of liquid water, as long as there is any, and is not influenced by the presence of other gases. In both cases, if we disturb the equilibrium and then leave things to themselves the equilibrium is restored. If in the first case we diminish the pressure of the carbonic acid gas, some carbonate of lime decomposes, yielding carbonic acid gas until the pressure is raised to what it was; if we increase the pressure, some of the carbonic acid combines with quicklime until the pressure is reduced to what it was before. In the second case, if we diminish the pressure, some of the liquid water evaporates; if we increase it, some of the water-vapour condenses, and so the pressure is restored. Rise of temperature causes in the one case evaporation of water, in the other decomposition of carbonate of lime,—in both increase of pressure. Lowering of temperature causes in the one case condensation of water-vapour, in the other combination of quicklime and carbonic acid gas,—in both diminution of pressure.

As a second instance we may take the dissociation of water. Just as water-vapour condenses into liquid water under certain conditions, but always with the evolution of heat (latent heat of vapour), so the mixture of oxygen and hydrogen in the proper proportion to form water combines, under certain conditions, to form water-vapour, but always with the evolution of heat (heat of combination). In both cases we have change of state but no change of composition, and in both we have evolution of heat. In the first case we can reverse the process: heat the liquid water, heat becomes latent, liquid water changes into water-vapour. There is a certain definite pressure of water-vapour corresponding to the temperature: raise the temperature, more water evaporates, the pressure of water-vapour increases. It occurred to Deville, to whom both changes were equally physical, that in the second case the process should be reversible also,—that on heating the water-vapour it ought to decompose into oxygen and hydrogen, heat disappearing here also, and that, as there is a definite pressure of water-vapour corresponding to the temperature (often called the tension of water-vapour), so there should be a definite ratio of the pressure of hydrogen and oxygen to that of water-vapour (the tension of dissociation). Deville showed in the most conclusive manner that this is the case and devised ingenious arrangements for proving the actual occurrence of dissociation.

Another case very fully investigated by Deville is that already mentioned,—viz., the action of water-vapour on iron, and of hydrogen on oxide of iron. He showed that, for a fixed temperature, water-vapour and hydrogen are in equilibrium in presence of iron and oxide of iron when the pressures of the two gases, hydrogen and water-vapour, are in a certain ratio quite independent of the quantity of the iron or of the oxide of iron, as long as there is some of each. If the ratio is changed, say by increasing the pressure of the water-vapour, chemical action takes place: water is decomposed, oxide of iron is formed, and hydrogen set free. Again, if the pressure of the water-vapour is diminished, part of the hydrogen acts on oxide of iron, reducing it and forming water. In both cases the ratio of pressures is restored. This gives an easy explanation of the apparently anomalous results mentioned above. When a current of hydrogen is passed over oxide of iron the water-vapour produced is swept away as fast as it is formed; the ratio of the pressure of hydrogen to that of water-vapour is therefore always greater than that required for equilibrium and reduction of iron, and formation of water goes on continuously until all the oxide of iron is reduced. In the same way, a current of water-vapour carries away the hydrogen as fast as it is produced; the ratio of the pressure of hydrogen to that of water-vapour is always less than that required for equilibrium, and the oxidation of iron and production of hydrogen goes on until no metallic iron remains. Exactly the same explanation applies to the action of carbonic acid gas on solution of sulph-

hydrate of potassium, and of sulphuretted hydrogen on solution of bicarbonate of potassium. Equilibrium results when the pressures of the gases are in a certain ratio; if the equilibrium is disturbed chemical action takes place in the direction which tends to restore the equilibrium by reproducing the ratio of pressures.

The apparatus devised by Deville for detecting and measuring dissociation illustrates his remarkable ingenuity. We shall instance only one example in addition to those already mentioned.

One of the great difficulties in observing dissociation depends on its reversible character. A compound may indeed decompose when raised to a high temperature; but, if, as we cool it again, reunion occurs, it is not easy to prove that any chemical change took place. One of the ways in which Deville got over this difficulty was by the use of his "hot and cold tube." Inside a porcelain tube he placed a metal tube of smaller diameter, so that their axes coincided, leaving an annular space between them. This annular space was closed at both ends, but, by means of side tubes near the ends, could be filled with any gas, or a current of gas could be passed through it. The porcelain tube was raised to a high temperature by being placed in a furnace, while the internal metal tube was kept cold by running water through it. By this means he proved the dissociation of carbonic acid gas, carbonic oxide, and sulphurous acid gas,—the carbon or sulphur being deposited on the outer wall of the cold internal tube, and thus kept at a temperature below that at which recombination could take place.

Deville's observations on dissociation and his generalizations from them have a very direct bearing on the kinetic theory of gases, and it is a fact of interest in the history of science that Deville did not recognize the validity of that theory. Our estimate of the ingenuity, skill, and patience shown in his experimental work, and of the genius and sound judgment which directed his theoretical conclusions, is perhaps raised when we recollect that he was neither led in the first nor biased in the second by ideas derived from the kinetic theory, and his hostile or at least neutral attitude towards it gives perhaps greater value to the evidence that his work has contributed to its soundness.

Deville's works were published in the *Annales de Chimie et de Physique* and in the *Comptes Rendus*. He further published a volume, entitled *De l'Aluminium; ses Propriétés, &c.*, Paris, 1859, and the lecture *On Dissociation* already referred to. (A. C. B.)

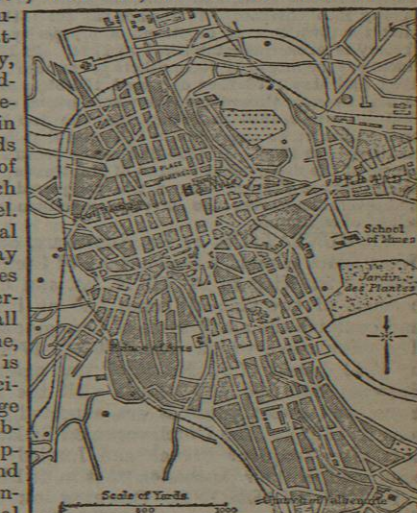
STE MARIE-AUX-MINES. See MARKIRCH.

SAINTES, a town of France, the chef-lieu of an arrondissement in the department of Charente-Inférieure, on the left bank of the Charente, 88 feet above the sea and 45 miles south-east of La Rochelle by the railway from Nantes to Bordeaux. It occupies a delightful position and is of interest for its Roman remains. Of these the best preserved is the triumphal arch of Germanicus, although it has been removed and rebuilt stone by stone. The amphitheatre is larger than those of Nîmes, Bordeaux, and Pompeii, and in area (.89 of an acre) is surpassed only by the Colosseum. The external ellipse was 436 feet long and 354 broad. Rubble embedded in cement is the material of the building, which dates probably from the close of the 1st or the beginning of the 2d century. Measures have been taken to keep the ruins, now made picturesque by trees, from further injury or decay. The capitol was destroyed after the capture of the town from the English by Charles of Alençon, brother of Philip of Valois, in 1330. An ancient hypogæum is still preserved, as well as numerous traces of the channels by which water was conveyed to private houses. The antiquarian museum contains 7000 medals and numerous sculptured pieces. Saintes was a bishop's see till 1790; the cathedral of St Peter, rebuilt at the close of the 12th century, was almost destroyed by the Huguenots in 1568. As rebuilt between 1582 and 1585 the interior of the church has an unattractive appearance. The tower is 236 feet high. The church of St Eutropius (which was founded in the close of the 6th century, rebuilt in the 11th, and had its nave destroyed in the Wars of Religion) stands above a very interesting well-lighted crypt, the largest in France after that of Chartres, adorned with richly sculptured capitals and containing the tomb of St Eutropius (4th or 5th century). Notre Dame, a splendid example of the architecture of the 11th and 12th centuries, with a noble round clock-tower, is unfortunately occupied by the military authorities, who have divided and mutilated the interior. The town, which was

at one time at the head of the department, is still the seat of the courts of assize and has a court-house. Other public buildings are a town-house (Renaissance), a hospital, and a library. Small vessels ascend the river as far as Saintes, which has an advantageous situation between Angoulême and Cognac higher up and Taillebourg and Rochefort farther down, and is the seat of iron and copper foundries, factories for agricultural instruments, cooperages, and skin-dressing establishments. The population in 1881 was 13,341 (15,763 in the commune).

Saintes (Mediolanum or Mediolanium), the capital of the Santones, was a flourishing town before Caesar's conquest of Gaul. Christianity was introduced by St Eutropius, its first bishop, in the middle of the 3d century. Charlemagne rebuilt its cathedral. The Normans burned the town in 845 and 854. Richard Cosur de Lion fortified himself within its walls against his father Henry II., who captured it after a destructive siege. It was not till the reign of Charles V. that Saintes was permanently recovered from the English. The Protestants did great damage during the Wars of Religion.

ST ÉTIENNE, an industrial and manufacturing town of France, chef-lieu of the department of Loire, 312 miles south-south-east of Paris and 36 miles south-south-west of Lyons by rail, with a branch line to Le Puy. The coal-field of St Étienne is the richest in France after that of Valenciennes and Pas de Calais, giving employment to 12,000 miners and 5000 workmen at the pit-heads. There are 64 concessions worked by 28 companies, extending over an area 20 miles long by 5 in width; the mineral is of two kinds,—smelting coal (said to be the best in France) and gas coal; the yearly output is between 3,000,000 and 4,000,000 tons, but with a tendency to decrease. In the metallurgic establishments of the arrondissement, which extend all the way along the railway from Firminy to Rive-de-Gier, 5540 workmen are employed, and in 1882 61,127 tons of cast metal, 58,445 tons of iron, 10,815 tons of sheet-iron, and 131,563 tons of steel of all kinds were manufactured. The last-named industry, carried on according to the Bessemer and Martin processes, yields nearly a third of the whole French production of steel. Military and naval material, railway plant, and articles of general merchandise are all made at St Étienne, and its name is especially associated with large castings, bomb-proof plates, ship-armour, masts, and pieces of machinery. The national gun-factory, under the direction of artillery officers and employing 4300 workmen, is almost exclusively devoted to the production of rifles and revolvers for the army. A certain number of gun-makers not engaged in the factory turn out from 80,000 to 90,000 firearms (hunting-pieces, revolvers, &c.) per annum. Hardware is manufactured by 60 firms, employing 7000 workmen (who are not, however, exclusively occupied with this department); leading articles are locks (known as Forez locks), common cutlery, files, nails, bolts, anvils, vices. Hemp cables for mines,



Plan of St Étienne.