Naseby. Rupert fled to Bristol, whence he counselled the king to come to terms with the parliament. In his conduct of the defence of the town, this "boldest attaquer in the world for personal courage" showed how much he "wanted the patience and seasoned head to consult and advise for defence" (Pepys). His surrender of the town after only a three weeks' siege, though he had promised Charles to keep it four months, caused his disgrace with the king, who revoked all his commissions by an order dated September 14, and in a cold letter ordered him to seek his subsistence beyond seas, for which purpose a pass was sent him. Rupert, however, broke through the enemy, reached the king at Oxford, and was there reconciled to him. He challenged an investigation of his conduct, and was triumphantly acquitted by the council of war. He appears, too, to have remonstrated personally with Charles in terms of indecent violence. He then applied to the parliament for a pass. This, however, was offered only on unacceptable conditions. On June 24 Rupert was taken prisoner by Fairfax at Oxford, and on July 5, at the demand of the parliament, sailed from Dover for France. He was immediately made a marshal in the French service, with the command of the English there. He received a wound in the head at Armentières during 1647. The greater part of the English fleet having adhered to Charles, and having sailed to Holland, Rupert went with the prince of Wales to The Hague, where the charge of it was put into his hand. He immediately set out in January 1649 upon an expedition of organized piracy. In February, after passing without molestation through the Parliamentary ships, he was at Kinsale, of which he took the fort. He relieved John Grenville at the Scilly Isles, and practically crippled the English trade. Attacked by Blake, he sailed to Portugal, and was received with kindness by the king; Blake, however, blockaded him in the Tagus, and demanded his surrender. Rupert broke through the blockade and sailed to the Mediterranean, landing at Barbary, and refitting at Toulon; thence he proceeded to Madeira, the Canaries (in 1652), the Azores, Cape de Verd, and the West Indies, sweeping the ocean between the latter places for a considerable time. Finding it impossible, however, to escape the indefatigable pursuit of Blake, he returned to France in 1653. He was now invited to Paris by Louis XIV., who made him master of the horse; he had also an offer from the emperor to command his forces. He travelled for some while, and was again in Paris in 1655. His movements, however, at this time are very uncertain, but he appears to have devoted his enforced leisure to engraving, chemistry, the perfection of gunpowder, and other arts, especially those of military science. Whether he was the actual discoverer of mezzotinto engraving, in which he was skilful, is uncertain, but this seems probable.

At the end of September 1660 Rupert returned to England; he was abroad during 1661, was placed on the privy council in April 1662, and in October was one of the commissioners for Tangiers; in December he became a member of the Royal Society. In August 1664 he was appointed to command the Guinea fleet against the Dutch, and set sail in October. On June 5, 1665, he gained with Monk a great victory over the Dutch, and on his return had his portrait painted by Lely along with the other admirals present at the battle. He again put to sea in May 1666, to hinder the junction of the Dutch and French, and returned in the beginning of June after a heavy defeat, his ship having stuck on the Galloper Sands during the fight. He was obliged to justify himself before the council. In January 1667 he was very ill, but recovered after the operation of trepanning. At this time he is mentioned as one of the best tennis players in the nation. On October 22, 1667, he received with Monk the thanks of the House of Commons for his exertions against the Dutch at Chatham, and he was again at sea in April 1668. He was always staunch in his Protestant principles, and was carefully kept in ignorance of Charles's Catholic plot in 1670. In August of that year he was constable of Windsor, and busied himself with the fitting up of the Round Tower, a turret of which he converted into a workshop. He shared in the prevailing immorality of the time, his favourite mistress being the celebrated actress, Mrs Hughes. In 1673 he was appointed lord high admiral, and fought two battles with the Dutch Fleet on May 28 and August 11, but could do little through the backwardness of the French in coming to his assistance. This appears to have so annoyed him that he henceforward eagerly helped the anti-French party. He was an active member of the Board of Trade, and governor of the Hudson's Bay Company. Till his death, on November 29, 1682, he lived in complete retirement at Windsor. (O. A.)

RUPERT'S LAND. See Hudson's Bay Company and North-West Territory.

RUPTURE. See Hernia.

RUSH. Under the name of rush or rushes, the stalks or fistular stem-like leaves of several plants have minor industrial applications. The common rushes (species of *Juncus*) are used in many parts of the world for chair-bottoms, mats, and basket work, and the pith they contain serves as wicks in open oil-lamps and for tallow-candles,—whence rushlight. The bulrush, *Typha elephantina*, is used in Sindh for mats and baskets. Under the name of rushes, species of *Scirpus* and other *Cyperaceæ* are used for chair-bottoms, mats, and thatch. The elegant rush mats of Madras are made from *Papyrus pangorei*. The sweet rush, yielding essential oil, is *Andropogon Schœnanthus*, known also as lemon grass. Large quantities of the "horse tail," *Equisetum hiemale*, are used under the name of the Dutch or scouring rush, for scouring metal and other hard surfaces on account of the large proportion of silica the plant contains.

RUSH, Benjamin (1745–1813), the Sydenham of America, was born near Bristol (12 miles from Philadelphia), on a homestead founded by his grandfather, who had followed Penn from England in 1683, being of the Quaker persuasion, and a gunsmith by trade. After a careful education at school and college, and an apprenticeship of six years with a doctor in Philadelphia, Rush went for two years to Edinburgh, where he attached himself chiefly to Cullen. He took his M.D. degree there in 1768, spent a year more in the hospitals of London and Paris, and began practice in Philadelphia at the age of twenty-four, undertaking at the same time the chemistry class at the new medical school. He at once became a leading spirit in the political and social movements of the day. He was a friend of Franklin's, a member of Congress for the State of Pennsylvania in 1776, and one of those who signed the Declaration of Independence the same year. He had already written on the Test Laws, "Sermons to the Rich," and on Negro Slavery, having taken up the last-named subject at the instance of Anthony Benezet, whose *Historical Account of Guinea* was the inspiration of Clarkson's celebrated college essay twelve years after. In 1774 he started along with James Pemberton the first anti-slavery society in America, and was its secretary for many years. When the political crisis ended in 1787 with the convention for drawing up a federal constitution, of which he was a member, he retired from public life, and gave himself up to medical practice. In 1789 he exchanged his chemistry lectureship for that of the theory and practice of physic;

and when the medical college, which he had helped to found, was absorbed by the university of Pennsylvania in 1791 he became professor of the institutes of medicine and of clinical practice, succeeding in 1805 to the chair of the theory and practice of physic. He was the central figure in the medical world of Philadelphia, as Cullen was at Edinburgh and Boerhaave at Leyden. Much of his influence and success was due to his method and regularity of life on the Franklin model. During the thirty years that he attended the Pennsylvania Hospital as physician, he is said to have never missed his daily visit and never to have been more than ten minutes late. Notwithstanding a weak chest, which troubled him the greater part of his life, he got through an enormous amount of work, literary and other; he was a systematic early riser, and his leisure at the end of the day was spent in reading poetry, history, the moral sciences, and the like, with his pen always in his hand. His temperament was of the gentle sort, and his conversation and correspondence abounding in ideas. It is stated by his friend Dr Hosack of New York, that Rush was successively a Quaker, an Anabaptist, a Presbyterian, and an Anglican. He gained great credit when the yellow fever devastated Philadelphia, in 1793, by his assiduity in visiting the sick (as many as one hundred and twenty in a day), and by his bold and apparently successful treatment of the disease by bloodletting. When he began to prosper in practice, he gave a seventh part of his income in charity. He died in 1813, after a five days' illness from typhus fever. Nine out of a family of thirteen children survived him, all prosperously settled.

Rush's writings cover an immense range of subjects, including language, the study of Latin and Greek, the moral faculty, capital punishment, medicine among the American Indians, maple sugar, the blackness of the negro, the cause of animal life, tobacco smoking, spirit drinking, as well as a long list of more strictly professional topics. His last work was an elaborate treatise on the *Diseases of the Mind* (1812). He is best known now by the five volumes of *Medical Inquiries and Observations*, which he brought out at intervals from 1789 to 1798 (two later editions revised by the author). Epidemiology, and yellow fever in particular, was the subject on which he wrote to most purpose. His treatment of yellow fever by bloodletting helped more than anything else to make him famous, although the practice would now be condemned. His views as to the origin and diffusion of yellow fever have a more permanent interest. He stoutly maintained, as against the doctrine of importation from the West Indies, that the yellow fever of Philadelphia was generated on the spot by noxious exhalations, although he does not appear to have suspected that there was something special or specific in the filthy conditions of soil or harbour mud which gave rise to the miasmata. For a number of years he expressed the opinion that yellow fever might become catching from person to person, under certain aggravated circumstances; but in the end he professed the doctrine of absolute non-contagiousness. He became well known in Europe as an authority on the epidemics of fever, and was elected an honorary member of several foreign societies.

See eulogy by Hosack (*Essays*, i., New York, 1824), with biographical details taken from a letter of Rush to President John Adams; also references in the works of Thacker, Gross, and Bowditch on the history of medicine in America. His part in the yellow fever controversies is indicated by La Roche (*Yellow Fever in Philadelphia from 1699 to 1854*, 2 vols., Philadelphia, 1855) and by Bancroft (*Essay on the Yellow Fever*, London, 1811). His services as an abolitionist pioneer are recorded in Clarkson's *History of the Abolition of the African Slave Trade.*

RUSHWORTH, John (*c.* 1607–1690), the compiler of the *Historical Collections* commonly described by his name, was born in Northumberland about the year 1607. After a period of study at Oxford, but not, it appears, as a member of the university, he came to London, was entered at Lincoln's Inn, and was in due course called to the bar. As early as [illegible]30 he seems to have commenced attendance at the courts, especially the Star Chamber and the Exchequer Chamber, not for the purpose of practising his profession, but in order that he might observe and record the more remarkable of their proceedings. On the meeting of the Long Parliament in 1640 he was appointed assistant clerk to the House of Commons, and was in the habit of making short-hand notes of the speeches he heard delivered in debate. He himself states that it was from his report that the words used by Charles I. during his memorable attempt to seize the "five members" were printed for public distribution under the king's orders. Being an expert horseman, it seems that Rushworth was frequently employed by the House as their messenger as well as in the capacity of clerk. When the king left London, and while the earl of Essex was general, he was often the bearer of communications from the parliament to one or the other of them. In 1645 Sir Thomas Fairfax, to whom he was distantly related, and who was then in command of the Parliamentary forces, made him his secretary, and he remained with the army almost continuously until 1650. In 1649 he was at Oxford, and the degree of master of arts was conferred on him by the university. In 1652 he was nominated one of the commissioners for the reform of the common law, and in 1658 he was elected member for Berwick in the parliament of the commonwealth. Almost immediately before the Restoration he published the first volume of his *Historical Collections*, which had been submitted in manuscript to Oliver Cromwell, with a very laudatory dedication to Richard Cromwell, then Lord Protector. But the turn of events induced him to withdraw this dedication, and he subsequently endeavoured without success to conciliate Charles II. by presenting him with some of the registers of the privy council which had come into his possession. In the convention of 1660, which recalled the king, he sat again as member for Berwick. In 1677 he was made secretary to Sir Orlando Bridgeman, then lord keeper, and he was returned for Berwick a third and a fourth time to the parliaments of 1679 and 1681. Soon after this he appears to have fallen into straitened circumstances. In 1684 he was arrested for debt, and cast into the King's Bench prison, where he died, after lingering for some time in a condition of mental infirmity, the result of excessive drinking, in 1690.

Rushworth's *Historical Collections of Private Passages of State, Weighty Matters in Law, and Remarkable Proceedings in Parliament* was reprinted in eight folio volumes in 1721. The eighth volume of this edition is an account of the trial of the earl of Strafford, the other seven volumes being concerned with the miscellaneous transactions of the period from 1618 to 1648. Only the first three volumes and the trial of Strafford were originally published in Rushworth's lifetime; but the manuscript of the other volumes was left by him ready for the press. The extreme value of the work is well known to all inquirers into the history of the Civil War, and much of the information it contains is to be found nowhere else. Its impartiality, however, can hardly be seriously maintained, and hence it is necessary to consult it with some caution.

RUSSELL, John Russell, Earl (1792–1878), a statesman who for nearly half a century faithfully represented the traditions of Whig politics, was the third son of John, sixth duke of Bedford, and was born in Hertford Street, Mayfair, London, 18th August 1792, one of the most terrible months in the annals of the French Revolution. Whilst still a child he was sent to a private school at Sunbury, and for a short time he was at Westminster School. Long and severe illness led to his being placed, with many other young men sprung from Whig parents, with a private tutor at Woodnesborough in Kent. Following in the footsteps of Lord Henry Petty, Brougham, and Horner, he went to the university of Edinburgh, then the academic centre of Liberalism, and dwelt in the house of Prof. Playfair, whom he afterwards described as "one of the best and noblest, the most upright, the most benevolent, and the most liberal of all philosophers." On leaving the university, he determined upon taking a foreign tour, and, as the greater part of Europe was overrun by French troops, he landed at Lisbon with the intention of exploring the countries of Portugal and Spain. Lord John

Russell had previously arrived at the conclusion that the continuance of the war with France was necessary for the restoration of the peace of Europe, and his convictions were deepened by the experience of travel. On the 4th May 1813, ere he was of age, he was returned for the ducal borough of Tavistock, and in this he resembled Lord Chesterfield and other aristocratic legislators, who were entrusted with the duty of law-making before they had arrived at years of discretion. After the battle of Waterloo the Whig representatives in parliament concentrated their efforts in promoting financial reform, and in resisting those arbitrary settlements of the Continental countries which found favour in the eyes of Metternich and Castlereagh. In foreign politics Lord John Russell's oratorical talents were especially shown in his struggles to prevent the union of Norway and Sweden. In domestic questions he cast in his lot with those who opposed the repressive measures of 1817, and protested that the causes of the discontent at home should be removed by remedial legislation. When failure attended all his efforts he resigned his seat for Tavistock, and meditated permanent withdrawal from public life, but was dissuaded from this step by the arguments of his friends, and especially by a poetic appeal from Tom Moore. In the parliament of 1818–20 he again represented the family borough in Devon, and in May 1819 began his long advocacy of parliamentary reform by moving for an inquiry into the corruption which prevailed in the Cornish constituency of Grampound. During the first parliament (1820–26) of George IV. the county of Huntingdon accepted Lord John Russell's services as its representative, and it was his good fortune to secure in 1821 the disfranchisement of Grampound, but his satisfaction at this triumph was diminished by the fact that the seats were not transferred to the constituency which he desired. This was the sole parliamentary victory which the advocates of a reform of the representation obtained before 1832, but they found cause for congratulation in other triumphs. Lord John Russell paid the penalty for his advocacy of Catholic emancipation with the loss in 1826 of his seat for Huntingdon county, but he found a shelter in the Irish borough of Bandon Bridge. He led the attack against the Test Acts by carrying in February 1828 with a majority of forty-four a motion for a committee to inquire into their operations, and after this decisive victory they were repealed. He warmly supported the Wellington ministry when it realized that the king's government could only be carried on by the passing of a Catholic Relief Act. For the greater part of the short-lived parliament of 1830–31 he served his old constituency of Tavistock, having been beaten in a contest for Bedford county at the general election by one vote; and, when Lord Grey's Reform ministry was formed, Lord John Russell accepted the office of paymaster-general, though, strange to say, he was not admitted into the sacred precincts of the cabinet. This exclusion from the official hierarchy was rendered the more remarkable by the circumstance that he was selected (1st March 1831) to explain the provisions of the Reform Bill, to which the cabinet had given its formal sanction. The Whig ministry were soon met by defeat, but an appeal to the country increased the number of their adherents, and Lord John Russell himself had the satisfaction of being chosen by the freeholders of Devon as their member. After many a period of doubt and defeat, "the bill, the whole bill, and nothing but the bill" passed into law, and Lord John stood forth in the mind of the people as its champion. Although it was not till some years later that he became the leader of the Liberal party, the height of his fame was attained in 1832. After the passing of the Reform Bill he sat for the southern division of Devon, and continued to retain the place of paymaster-general in the ministries of Lord Grey and Lord Melbourne. The former of these cabinets was broken up by the withdrawal of Mr Stanley, afterwards Lord Derby, on the proposal for reforming the Irish Church, when he emphasized Lord John Russell's part in the movements by the saying "Johnny 's upset the coach;" the latter was abruptly, if not rudely, dismissed by William IV. when the death of Lord Spencer promoted the leader of the House of Commons, Lord Althorp, to the peerage, and Lord John Russell was proposed as the spokesman of the ministry in the Commons. At the general election which ensued the Tories received a considerable accession of strength, but not sufficient to ensure their continuance in office, and the adoption by the House of Commons of the proposition of the Whig leader, that the surplus funds of the Irish Church should be applied to general education, necessitated the resignation of Sir Robert Peel's ministry. In Lord Melbourne's new administration Lord John Russell became home secretary and leader of the House of Commons, but on his seeking a renewal of confidence from the electors of South Devon, he was defeated and driven to Stroud. Although the course of the Whig ministry was not attended by uniform prosperity, it succeeded in passing a Municipal Reform Bill, and in carrying a settlement of the tithe question in England and Ireland. At the close of its career the troubles in Canada threatened a severance of that dependency from the home country, whereupon Lord John Russell, with a courage which never deserted him, took charge of the department, at that time a dual department, of war and the colonies. In May 1839, on an adverse motion concerning the administration of Jamaica, the ministry was left with a majority of five only, and promptly resigned the seals of office. Sir Robert Peel's attempt to form a ministry was, however, frustrated by the refusal of the queen to dismiss the ladies of the bedchamber, and the Whigs resumed their places. Their prospects brightened when Sir John Yarde Buller's motion of "no confidence" was defeated by twenty-one, but the glimpse of sunlight soon faded, and a similar vote was some months later carried by a majority of one, whereupon the Whig leader announced a dissolution of parliament (1841). At the polling booth his friends were smitten hip and thigh; the return of Lord John Russell for the City of London was almost their solitary triumph. On Sir Robert Peel's resignation (1846) the task of forming an administration was entrusted to Lord John Russell, and he remained at the head of affairs from 1846 to 1852, but his tenure of office was not marked by any great legislative enactments. His celebrated Durham letter on the threatened assumption of ecclesiastical titles by the Roman Catholic bishops weakened the attachment of the "Peelites" and alienated his Irish supporters. The impotence of their opponents, rather than the strength of their friends, kept the Whig ministry in power, and, although beaten by a majority of nearly two to one on Mr Locke King's County Franchise Bill in February 1851, it could not divest itself of office. Lord Palmerston's unauthorized recognition of the French *coup d'état* was followed by his dismissal, but he had his revenge in the ejectment of his old colleagues a few months later. During Lord Aberdeen's administration Lord John Russell led the Lower House, at first as foreign secretary, then without portfolio, and lastly as president of the council. In 1854 he brought in a Reform Bill, but in consequence of the war with Russia the bill was allowed, much to its author's mortification, to drop. His popularity was diminished by this failure, and although he resigned in January 1855, on Mr Roebuck's Crimea motion, he did not regain his old position in the country. At the Vienna conference (1855) Lord John Russell was England's representative, and immediately on his return

he became secretary of the colonies; but the errors in his negotiations at the Austrian capital followed him and forced him to retire. For some years after this he was the "stormy petrel" of politics. He was the chief instrument in defeating Lord Palmerston in 1857. He led the attack on the Tory Reform Bill of 1859. A reconciliation was then effected between the rival Whig leaders, and Lord John Russell consented to become foreign secretary in Lord Palmerston's ministry, and to accept an earldom. During the American War Earl Russell's sympathies with the North restrained his country from embarking in the contest, but he was not equally successful in his desire to prevent the spoliation of Denmark. On Lord Palmerston's death (October 1865) Earl Russell was once more summoned to form a cabinet, but the defeat of his ministry in the following June on the Reform Bill which they had introduced was followed by his retirement from public life. His leisure hours were spent after this event in the preparation of numberless letters and speeches, and in the composition of his *Recollections and Suggestions*, but everything he wrote was marked by the belief that all philosophy, political or social, was summed up in the Whig creed of fifty years previously. Earl Russell died at Pembroke Lodge, Richmond Park, 28th May 1878.

For more than half a century Earl Russell lived in the excitement of political life. He participated in the troubles of Whiggism before 1832, and shared in its triumph after that event. He expounded the principles of the first Reform Bill and lived to see a second carried into law by the Conservative ministry of Lord Derby. Unlimited confidence in his own resources exposed him to many jests from both friend and foe, but he rightly estimated his powers, and they carried him to the highest places in the state. His tragedies and his essays are forgotten, but his works on Fox are among the chief authorities on Whig politics. Earl Russell was twice married, —first, in 1835, to Adelaide, daughter of Mr Thomas Lister, and widow of Thomas, second Lord Ribblesdale, and secondly, in 1841, to Lady Frances Ann Maria, daughter of the second earl of Minto. By the former he had two daughters, by the latter three sons and one daughter. His eldest son, Lord Amberley, predeceased him 9th January 1876. (W. P. C.)

RUSSELL, WILLIAM RUSSELL, LORD (1639–1683), the third son of Lord Russell, afterwards fifth earl and still later first duke of Bedford, and Lady Anne Carr, daughter of the infamous countess of Somerset, was born September 29, 1639. Nothing is known of his early youth, except that about 1654 he was sent to Cambridge with his elder brother Francis. On leaving the university, the two brothers travelled abroad, visiting Lyons and Geneva, and residing for some while at Augsburg. His account of his impressions is spirited and interesting. He was at Paris in 1658, but had returned to Woburn in December 1659. At the Restoration he was elected for the family borough of Tavistock. For a long while he appears to have taken no part in public affairs, but rather to have indulged in the follies of court life and intrigue; for both in 1663 and 1664 he was engaged in duels, in the latter of which he was wounded. In 1669 he married the second daughter of the earl of Southampton, the widow of Lord Vaughan, thus becoming connected with Shaftesbury, who had married Southampton's niece. With his wife Russell always lived on terms of the greatest affection and confidence.

It was not until the formation of the "country party," in opposition to the policy of the Cabal and Charles's French-Catholic plots, that Russell began to take an active part in affairs. He then joined Cavendish, Birch, Hampden, Powell, Lyttleton, and others in vehement antagonism to the court. With a passionate hatred and distrust of the Catholics, and an intense love of political liberty, he united the desire for ease to Protestant Dissenters. His first speech appears to have been on January 22, 1673, in which he inveighed against the stop of the exchequer, the attack on the Smyrna fleet, the corruption of courtiers with French money, and "the ill ministers about the king." He also supported the proceedings against the duke of Buckingham. In 1675 he moved an address to the king for the removal of Danby from the royal councils, and for his impeachment. On February 15, 1677, in the debate on the fifteen months' prorogation, he moved the dissolution of parliament; and in March 1678 he seconded the address praying the king to declare war against France. The enmity of the country party against Danby and James, and their desire for a dissolution and the disbanding of the army, were greater than their enmity to Louis. The French king therefore found it easy to form a temporary alliance with Russell, Hollis, and the opposition leaders, by which they engaged to cripple the king's power of hurting France, and to compel him to seek Louis's friendship,—that friendship, however, to be given only on the condition that they in their turn should have Louis's support for their cherished objects. Russell in particular entered into close communication with Rouvigny, who came over with money for distribution among members of parliament. By the testimony of Barillon, however, it is clear that Russell himself utterly refused to take any part in the intended corruption.

By the wild alarms which culminated in the Popish Terror Russell appears to have been affected more completely than his otherwise sober character would have led people to expect. He threw himself into the party which looked to Monmouth as the representative of Protestant interests, a grave political blunder, though he afterwards was in confidential communication with Orange. On November 4, 1678, he moved an address to the king to remove the duke of York from his person and councils. At the dissolution of the pensionary parliament, he was, in the new elections, returned for Bedfordshire. Danby was at once overthrown, and in April 1679 Russell was one of the new privy council formed by Charles on the advice of Temple. Only six days after this we find him moving for a committee to draw up a bill to secure religion and property in case of a Popish successor. He does not, however, appear to have taken part in the exclusion debates at this time. In June, on the occasion of the Covenanters' rising in Scotland, he attacked Lauderdale personally in full council.

In January 1680 Russell, along with Cavendish, Capell, Powell, Essex, and Lyttleton, tendered his resignation to the king, which was received by Charles "with all my heart." On June 16 he accompanied Shaftesbury, when the latter indicted James at Westminster as a Popish recusant; and on October 26 he took the extreme step of moving "how to suppress Popery, and prevent a Popish successor"; while on November 2, now at the height of his influence, he went still further by seconding the motion for exclusion in its most emphatic shape, and on the 19th carried the bill to the House of Lords for their concurrence. The limitation scheme he opposed, on the ground that monarchy under the conditions expressed in it would be an absurdity. The statement, made by Echard alone, that he joined in opposing the indulgence shown to Lord Strafford by Charles in dispensing with the more horrible parts of the sentence of death—an indulgence afterwards shown to Russell himself—is entirely unworthy of credence. On December 18 he moved to refuse supplies until the king passed the Exclusion Bill. The Prince of Orange having come over at this time, there was a tendency on the part of the opposition leaders to accept his endeavours to secure a compromise on the exclusion question. Russell, however, refused to give way a hair's breadth.

On March 26, 1681, in the parliament held at Oxford, Russell again seconded the Exclusion Bill. Upon the dissolution he retired into privacy at his country seat of Stratton in Hampshire. It was, however, no doubt at his wish that his chaplain wrote the *Life of Julian the Apos-*

tate, in reply to Dr Hickes's sermons, in which the lawfulness of resistance in extreme cases was defended. In the wild schemes of Shaftesbury after the election of Tory sheriffs for London in 1682 he had no share; upon the violation of the charters, however, in 1683, he began seriously to consider as to the best means of resisting the Government, and on one occasion attended a meeting at which treason, or what might be construed as treason, was talked. Monmouth, Essex, Hampden, Sidney, and Howard of Escrick were the principal of those who met to consult. On the breaking out of the Rye Plot, of which neither he, Essex, nor Sidney had the slightest knowledge, he was accused by informers of promising his assistance to raise an insurrection and compass the death of the king. Refusing to attempt to escape, he was brought before the council, when his attendance at the meeting referred to was charged against him. He was sent on June 26, 1683, to the Tower, and, looking upon himself as a dying man, betook himself wholly to preparation for death. Monmouth offered to appear to take his trial, if thereby he could help Russell, and Essex refused to abscond for fear of injuring his friend's chance of escape. Before a committee of the council Russell, on June 28, acknowledged his presence at the meeting, but denied all knowledge of the proposed insurrection. He reserved his defence, however, until his trial. He would probably have saved his life but for the perjury of Lord Howard. The suicide of Essex, the news of which was brought into court during the trial, was quoted as additional evidence against him, as pointing to the certainty of Essex's guilt. On July 19 he was tried at the Old Bailey, his wife assisting him in his defence. Evidence was given by an informer that, while at Shaftesbury's hiding-place in Wapping, Russell had joined in the proposal to seize the king's guard, a charge indignantly denied by him in his farewell paper, and that he was one of a committee of six appointed to prepare the scheme for an insurrection. Howard, too, expressly declared that Russell had urged the entering into communications with Argyll in Scotland. Howard's perjury is clear from other witnesses, but the evidence was accepted. Russell spoke with spirit and dignity in his own defence, and, in especial, vehemently denied that he had ever been party to a design so wicked and so foolish as those of the murder of the king and of rebellion. It will be observed that the legality of the trial, in so far as the jurors were not properly qualified and the law of treason was shamefully strained, was denied in the Act of 1 William and Mary which annulled the attainder. Hallam maintains that the only overt act of treason proved against Russell was his concurrence in the project of a rising at Taunton, which he denied, and which, Ramsay being the only witness, was not sufficient to warrant a conviction.

Russell was sentenced to die. Many attempts were made to save his life. The old earl of Bedford offered £50,000 or £100,000, and Monmouth, Legge, Lady Ranelagh, and Rochester added their intercessions. Russell himself, in petitions to Charles and James, offered to live abroad if his life were spared, and never again to meddle in the affairs of England. He refused, however, to yield to the influence of Burnet and Tillotson, who endeavoured to make him grant the unlawfulness of resistance, although it is more than probable that compliance in this would have saved his life. He drew up, with Burnet's assistance, a paper containing his apology, and he wrote to the king a letter, to be delivered after his death, in which he asked Charles's pardon for any wrong he had done him. A suggestion of escape from Lord Cavendish he refused. He behaved with his usual quiet cheerfulness during his stay in the Tower, spending his last day on earth as he had intended to spend the following Sunday if he had reached it. He received the sacrament from Tillotson, and Burnet twice preached to him. Having supped with his wife, the parting from whom was his only great trial, he slept peacefully, and spent the last morning in devotion with Burnet. He went to the place of execution in Lincoln's Inn Fields with perfect calmness, which was preserved to the last. He died on July 21, 1683, in the forty-fourth year of his age.

A true and moderate summing up of his character will be found in his *Life*, by Lord John Russell. (O. A.)

RUSSELL, JOHN SCOTT (1808–1882), was born in 1808 near Glasgow, a "son of the manse," and was at first destined for the ministry. But this intention on his father's part was changed in consequence of the boy's early leanings towards practical science. He attended in succession the universities of St Andrews, Edinburgh, and Glasgow,—taking his degree in the last-named at the age of sixteen. After spending a couple of years in workshops, he settled in Edinburgh as a lecturer on science, and soon collected large classes. In 1832–33 he was engaged to give the natural philosophy course at the university, the chair having become vacant by the death of Leslie. In the following year he began that remarkable series of observations on waves whose results, besides being of very great scientific importance, were the chief determining factor of his subsequent practical career. Having been consulted as to the possibility of applying steam-navigation to the Edinburgh and Glasgow Canal, he replied that the question could not be answered without experiments, and that he was willing to undertake such if a portion of the canal were placed at his disposal. The results of this inquiry are to be found in the *Transactions of the Royal Society of Edinburgh* (vol. xiv.), and in the *British Association Reports* (seventh meeting). We need not say more than that the existence of the *long wave*, or *wave of translation*, as well as many of its most important features, were here first recognized, and (to give one very simple idea of the value of the investigation) that it was clearly pointed out *why* there is a special rate, depending on the depth of the water, at which a canal-boat can be towed at the least expenditure of effort by the horse. The elementary mathematical theory of the long wave is very simple, and was soon supplied by commentators on Scott Russell's work; a more complete investigation has been since given by Stokes; and the subject may be considered as certainly devoid of any special mystery. Russell held an opposite opinion, and it led him to many extraordinary and groundless speculations, some of which have been published in a posthumous volume, *The Wave of Translation* (1885). His observations led him to propose and experiment on a new system of shaping vessels, which is known as the *wave system*. This culminated in the building of the enormous and unique "Great Eastern," of which it has been recently remarked by a competent authority that "it is probable that, if a new 'Great Eastern' were now to be built, the system of construction employed by Mr Scott Russell would be followed exactly."

Though his fame will rest chiefly on the two great steps we have just mentioned, Scott Russell's activity and ingenuity displayed themselves in many other fields,—steam-coaches for roads, improvements in boilers and in marine engines, the immense iron dome of the Vienna exhibition, cellular double bottoms for iron ships, &c. Along with Mr Stafford Northcote (now Lord Iddesleigh), he was joint secretary of the Great Exhibition of 1851; and he was one of the chief founders of the Institution of Naval Architects, from the twenty-third volume of whose *Transactions* we have extracted much of what is stated above. Russell contributed the articles STEAM, STEAM-ENGINE, STEAM NAVIGATION, &c., to the 7th edition of the *Encyclopædia Britannica*. He died at Ventnor, June 8, 1882.

RUSSIA