

GERBA or JERBA, German *Dscherba*, an island off the African coast in the Gulf of Gabes, belonging to the regency of Tunis. It is flat and well wooded with date palms, has an area of 425 square miles, and contains a population of 30,000. Most of the inhabitants are of Berber origin, though a certain proportion have adopted the Arabic language. About 5000 Jews live apart in villages of their own, and a number of European merchants are settled in the chief town of Haut-es-Suk for the purposes of trade. The island has a considerable reputation for the manufacture of the woollen tissues interwoven with silk which are known as burnous stuffs; a market for the sale of sponges from the neighbouring seas is held from November till March; and a good trade is maintained in the export of dates and other fruits. Gerba is the Lothophagitis or Lotus-eaters' Island of the Greek and Roman geographers, and it may also be identified with the Brachion of Scylax. The modern name appears as early as the 3d century in Aurelius Victor, who, mentioning the births of the emperors Gallus Trebonianus and Volusianus his son, says—"Creati in insula Meninge, quæ nunc Girba dicitur." Meninge or Meninx was the name of one of the two ancient towns in the island, the other being Thoar. A castle erected by the Spaniards in 1284 at Haut-es-Suk still remains; but the pyramid built of the skulls of the Spaniards under Garcia, who perished in 1516, was removed in 1837.

See Barth, *Wanderungen durch die Küsten des Mittelmeeres*; and Maltzan, *Reise in Tunis und Tripolis*, Leipsic, 1870.

GERBER, ERNST LUDWIG (1746–1819), author of the well-known dictionary of musicians, was born at Sondershausen 29th September 1746. His father, Henry Nicolas Gerber (1702–1775), a pupil of J. S. Bach, was an organist and composer of some distinction, and under his direction Ernst Ludwig at an early age had made great progress in his musical studies. In 1765 he went to Leipsic with the view of studying law, but the claims of music, which had gained additional strength from his acquaintanceship with J. A. Hiller, soon came to occupy almost his sole attention. On his return to Sondershausen he was appointed music teacher to the children of the prince, and in 1775 he succeeded his father as court organist. Latterly he devoted much of his time to the study of the literature and history of music, and with this view he made himself master of several of the modern languages. His *Historisch-biographisches Lexicon der Tonkünstler* appeared in 1790 and 1792 in two volumes; and the first volume of what was virtually an improved and corrected edition of this work was published in 1810 under the title *Neues historisch-biographisches Lexikon der Tonkünstler*, followed by other three volumes in 1812, 1813, and 1814. Gerber also contributed a number of papers to musical periodicals, and published several minor musical compositions. He died at Sondershausen 30th June 1819.

GERBERON, GABRIEL (1628–1711), a Jansenist monk, one of the most diligent students and prolific writers of his century, was born August 12, 1628, at St Calais, in the department of Sarthe. At the age of twenty he took the vows of the Benedictine order at St Melaine, Rennes, and after having taught rhetoric and philosophy in the monasteries of Bourgueil (Touraine) and St Denis, he became sub-prior at Compiègne, whence he was afterwards removed to St Germain-des-Près. In the year 1669 he fully and finally committed himself in the Jansenist controversy by the publication of his first work, which was an apology for the abbé Rupert of Tuits. In 1672 he was ordered to Argenteuil and in 1675 to Corbie; but having by this time aroused the most bitter hostility of the entire Jesuit order, he found it necessary to save himself by flight into the Low Countries, where he seems to have lived in various towns during the next twenty-eight years, and where

he published a great number of works, including the *Histoire Générale du Jansenisme* (1700), by which he is now best known. Arrested on the 30th of May 1703 at Brussels; at the instance of the archbishop of Malines, he was sent into France and condemned to imprisonment, from which he was not released till 1710, and even then only after he had consented to abjure the five Jansenist propositions. The first use he made of his freedom was to write a work (which, however, his friends prudently prevented him from publishing) *Le vain triomphe des Jésuites*, containing a virtual withdrawal of the compulsory recantation. He died at the abbey of St Denis on the 29th of March 1711. A full list of his works is given in the *Biographie Générale*.

GERBERT. See SILVESTER II.
GERBERT, MARTIN (1720–1793), a Catholic prelate and writer on church music, was a descendant of the Gerberts of Hornau, and was born at Horb on the Neckar, Würtemberg, 12th August 1720. He received his education at the Jewish school of Freiburg in the Breisgau, at Klingenuau in Switzerland, and at the monastery of St Blaise in the Black Forest. He joined the order of the Benedictines in the monastery of St Blaise in 1736, became priest in 1744, was soon thereafter appointed professor of theology, and was chosen abbot in 1764. From 1759 to 1762 he travelled in Germany, Italy, and France, chiefly with the view of obtaining access to the old collections of musical literature contained in the libraries of the monasteries. In 1774 he published two volumes *De cantu et musica sacra*; in 1777, *Monumenta veteris liturgie Alemannicæ*; and in 1784, in three volumes, *Scriptores ecclesiastici de musica sacra*, a collection of the principal writers on church music from the 3d century till the invention of printing. Although this work contains many textual errors, its publication has nevertheless been of very great importance for the history of music, by preserving writings which otherwise might either have perished or remained unknown. He is also the author of *Codex epistolaris Rudolphi I.*, 1772, and *Historia Nigræ Sive*, Cologne, 1783–1788. His interest in music led to his acquaintance with the composer Gluck, who became his intimate friend. He died 3d May 1793.

GERHARD, FRIEDRICH WILHELM EDUARD (1795–1867), a distinguished German archaeologist, was born at Posen, 29th November 1795. After studying at Breslau and Berlin, he in 1816 took up his residence at the former town. The reputation he acquired by his *Lectiones Apolloniæ*, published in the same year, led soon afterwards to his being appointed professor at the gymnasium of Posen. On resigning that office in 1819, on account of weakness in the eyes, he travelled in Italy, and in 1822 he took up his residence in Rome, where, with the view of prosecuting his archaeological studies, he remained for fifteen years. He there contributed to Platner's *Beschreibung der Stadt Rom*, then under the direction of Bunsen, and he was also one of the principal originators of the *Instituto di corrispondenza archeologica*, founded at Rome in 1828, and during his stay in Italy its director. After his return to Germany in 1837, he was appointed archaeologist at the Royal Museum of Berlin, and in 1844 he was chosen a member of the Academy of Sciences, and a professor in the university. He died at Berlin 12th May 1867.

Besides a large number of archaeological papers in periodicals, in the *Annali* of the Institute of Rome, and in the Transactions of the Berlin Academy, and several illustrated catalogues of Greek, Roman, and other antiquities in the Berlin, Naples, and Vatican Museums, Gerhard is the author of the following works:—*Antike Bildwerke*, Stuttg., 1827–44; *Auserlesene griech. Vasenbilder*, 1839–58; *Eriskische Spiegel*, 1839–65; *Hyperboreisch-röm. Studien*, vol. i., 1833; vol. ii., 1852; *Prodromus mytholog. Kunsterklärung*, Stuttgart and Tübingen, 1828; and *Griech. Mythologie*, 1854–55. His *Gesammelte akademische Abhandlungen und kleine Schriften* were published posthumously in 2 vols., Berlin, 1867.

GERHARD, JOHANN (1582–1637), one of the ablest and most learned exponents of Lutheran orthodoxy, was born of a good middle-class family in Quedlinburg, 17th October 1582. In his fifteenth year, during a dangerous illness, he came under the personal influence of Johann Arndt, author of *Das Wahre Christenthum*, and resolved to study for the church. Soon after entering the university of Wittenberg, however, in 1599, he began to waver in this determination, and ultimately gave himself for two years to the study of medicine, but in 1603 resumed his theological reading at Jena, and in the following year received a new impulse from Winkelmann and Mentzer at Marburg. Having graduated and begun to give lectures at Jena in 1605, he in 1606 received and accepted the duke of Coburg's invitation to the superintendency of Heldburg and mastership of the gymnasium; soon afterwards he became general superintendent of the duchy, in which capacity he was much and usefully engaged in the practical work of ecclesiastical organization until 1616, when he found a more congenial sphere in the senior theological chair at Jena, where the remainder of his life was spent. Though still comparatively young, Gerhard had already come to be regarded as the greatest living theologian of Protestant Germany; in the numerous "disputations" which characterized that period he was always protagonist, while on all public and domestic questions touching on religion or morals his advice was eagerly sought on all hands and by every class. It is recorded that during the course of his lifetime he had received repeated calls to almost every university in Germany, as well as to Upsala in Sweden. He died on the 20th August 1637. Personally he is said to have exhibited a rare combination of all the best elements of the Christian character; the only failing imputed to him by any one decidedly leans to virtue's side—an excessive love of peace.

His writings are very numerous, alike in exegetical, polemical, dogmatic, and practical theology. To the first category belong the *Commentarius in harmoniam historia evangelica de passione Christi* (1617), the *Comment. super priorem D. Petri Epistolam* (1641), and also his commentaries on Genesis (1637) and on Deuteronomy (1658). Of a controversial character are the *Confessio Catholica* (1634–68), an extensive work which seeks to prove the evangelical and catholic character of the doctrine of the Augsburg Confession from the writings of approved Roman Catholic authors; and the *Loci theologici* (1629), his principal contribution to science, in which Lutheranism is expounded "nervose, solide, et copiose," in fact with a fulness of learning, a force of logic, and a minuteness of detail that had never before been approached. The *Meditationes sacre* (1621), a work expressly devoted to the uses of Christian edification, has been frequently reprinted in Latin and has been translated into most of the European languages, including Greek. The English translation by R. Winterton (1631) has passed through at least nineteen editions. There is also an edition by W. Papillon in English blank verse (1801). A *Vita Joh. Gerhards* was published by E. R. Fischer in 1723.

GERHARDT, CHARLES-FREDERIC, was born at Strasburg, August 21, 1816, and died there August 19, 1856. After his school years spent at home and in Karlsruhe, where his taste for chemistry was awakened, he was sent to Leipsic to learn business, but he attended Erdmann's lectures on chemistry as well. Returning home he very soon found that a commercial life was not to his taste, so, after a sharp dispute with a disappointed father, he enlisted in a cavalry regiment. In a few months a military career also became intolerable, and, being bought off by a friend, he went to Giessen to study under Liebig. There he remained eighteen months, displaying such entire devotion to chemistry that he found himself unable to obtain the customary degree. He again thought of entering trade, but Liebig persuaded him to go to Paris, where he arrived in 1838. His good appearance and address recommended him to Dumas and other chemists, and in a short time along with Cahours, who became his intimate friend, he published an important memoir on essential oils, distinguished especially by the new views it contained. He

soon after left Paris and went to Montpellier, where he was professor in the faculty of science till 1848. He then returned to Paris and opened a school for chemistry, which, however, was not commercially a success. From 1848 to 1855 he resided at Paris, and it was during this time that he published the memoirs and carried on the controversies which have been of such importance in the development of scientific chemistry. In 1855 he was appointed professor at Strasburg, his native place; but he had held the office for but a short time when he died, after two days' illness. Gerhardt's contributions to chemistry are less discoveries of new facts, than of new ideas which organized and vitalized an inert accumulation of facts. He developed the notion of types of structure and reaction; he discovered the order of organic compounds, which led him to the doctrine of homologous and other series; and on theoretical grounds he remodelled the whole character of the combining weights upon the two-volume molecular basis. The bare statement, however, of his results gives no idea of the lucidity, the wealth of thought, the grasp of the entire subject which his memoirs and his longer works display. It was by his writings especially that Gerhardt's influence was felt. Although a thorough enthusiast in his subject, clear in his exposition, earnest in his work, weighty in his delivery, he seems to have wanted the qualities of a successful teacher. Nothing is heard of his lectures, or of his influence as a professor,—such influence as drew students round Liebig and other great masters. None the less, however, did he stir the thoughts of other chemists to the very depths; and although the unitary system has had its day, yet, in substance at least, if no longer in name, chemistry is still Gerhardt's, and it is not impossible that chemists may return to some of his views which at present are not acceptable.

GERHARDT, PAUL (c. 1606–1676), the greatest hymn-writer of Germany, if not indeed of Europe, was born of a good middle-class family at Gräfenhainichen, a small town on the railway between Halle and Wittenberg, in 1606 or 1607,—some authorities, indeed, give the date March 12, 1607, but neither the year nor the day is accurately known. His education appears to have been retarded by the troubles of the period, the Thirty Years' War having begun about the time he reached his twelfth year. After completing his studies for the church he is known to have lived for some years at Berlin as tutor in the family of an advocate named Berthold, whose daughter he subsequently married, on receiving his first ecclesiastical appointment at Mittelwald (a small town in the neighbourhood of Berlin) in 1651. In 1657 he accepted an invitation as "diaconus" to the Nicolaikirche of Berlin; but, in consequence of his uncompromising Lutheranism in refusing to accept the elector Frederick William's "syncretistic" edict of 1664, he was deprived in 1666. Though absolved from submission and restored to office early in the following year, on the petition of the citizens, his conscience did not allow him to retain a post which, as it appeared to him, could only be held on condition of at least a tacit repudiation of the Formula Concordiæ, and for upwards of a year he lived in Berlin without fixed employment. In 1668 he was appointed archdeacon of Lübben in the duchy of Saxe-Merseburg, where, after a somewhat sombre ministry of eight years, he died on the 7th of June 1676. Many of his best known hymns were originally published in various church hymn-books, as for example in that for Brandenburg, which appeared in 1658; others first saw the light in Johann Crüger's *Geistliche Kirchenmelodien* (1649) and *Praxis Pietatis Melica* (1656). The first complete set of them is the *Geistliche Andachten*, published in 1666–67 by Ebeling, music director in Berlin. No hymn by Gerhardt of a later date than 1667 is known to exist.

The life of Gerhardt has been written by Roth (1829), by Langbecker (1841), by Schultz (1842), by Wildenhahn (1845), and by Bachmann (1863); also by Kraft in Ersch u. Gruber's *Allg. Encycl.* (1855). The best modern edition of the hymns, published by Wackernagel in 1843, has often been reprinted. There is an English translation by Kelly (*Paul Gerhardt's Spiritual Songs*, 1867).

GÉRICAUT, JEAN LOUIS ANDRÉ THÉODORE (1791–1824), French painter, led the inevitable reaction which set in under the empire against the fixed and strictly limited aims of the school of David. He was born at Rouen in 1791. In 1808 he entered the studio of Charles Vernet, from which, in 1810, he passed to that of Guérin, whom he drove to despair by his passion for Rubens, and by the unorthodox manner in which he persisted in interpreting nature. At the Salon of 1812 Géricault attracted attention by his "Officier de Chasseurs à Cheval" (Louvre), a work in which he personified the cavalry in its hour of triumph, and turned to account the solid training received from Guérin in rendering a picturesque point of view which was in itself a protest against the cherished convictions of the pseudo-classical school. Two years later (1814) he exhibited this work accompanied with the reverse picture "Cuirassier blessé" (Louvre), and in both subjects called attention to the interest of contemporary aspects of life, treated neglected types of living form, and exhibited that mastery of and delight in the horse which was a feature of his character. Disconcerted by the tempest of contradictory opinion which arose over these two pictures, Géricault gave way to his enthusiasm for horses and soldiers, and enrolled himself in the *mousquetaires*. During the Hundred Days he followed the king to Bethune, but, on his regiment being disbanded, eagerly returned to his profession, left France for Italy in 1816, and at Rome nobly illustrated his favourite animal by his great painting "Course des Chevaux Libres." Returning to Paris, Géricault exhibited at the Salon of 1819 the "Radeau de la Méduse" (Louvre), a subject which not only enabled him to prove his zealous and scientific study of the human form, but contained those elements of the heroic and pathetic, as existing in situations of modern life, to which he had appealed in his earliest productions. Easily depressed or elated, Géricault took to heart the hostility which this work excited, and passed nearly two years in London, where the "Radeau" was exhibited with success, and where he executed many series of admirable lithographs now rare. At the close of 1822 he was again in Paris, and produced a great quantity of projects for vast compositions, models in wax, and a horse *écorché*, as preliminary to the production of an equestrian statue. His health was now completely undermined by various kinds of excess, and on 26th January 1824 he died at the age of thirty-three. That which he left us is effective only as a protest; his work, like his life, lacked the fixity of conscious purpose necessary to the task of reconstruction. Had he steadied himself and survived the abuse of his powers, he might have played an important part in determining the course of the modern school, for, though no colourist, he was in other respects richly endowed, and was possessed by a rare energy which redeemed even that tendency to undue emphasis which gives a theatrical character to much of the best French work. Géricault's biography, accompanied by a *catalogue raisonné* of his works, was published by M. C. Clément in 1868.

GERIZIM (גֵּרִיזִים), "the desert hill," or, according to others, "the hill of the Gerizzites"¹, the third highest mountain of Samaria,² is situated at the western extremity

¹ See 1 Sam. xxvii. 8 (Keri.)

² Josephus (*Ant.*, xi. 8, 2) calls it the highest, but his assertion has been disproved by recent accurate measurement. According to Farrer, Tell Azur, Ebal, and Gerizim are 3566, 3375, and 3179 feet respectively above the level of the Mediterranean.

of the fertile plain of Mochna, and with Mount Ebal, which lies immediately to the north, forms a narrow valley in which lies the ancient town of Sichem or Shechem. As seen from this point Gerizim is distinguished from its tamer neighbour by the boldness of its crags, the richness of its verdure, and the number of its springs. Its southern slope however is much gentler than its northern, and both are almost bare of trees. On the summit stands at present a small Mahometan chapel, and there are besides numerous traces of a fortress and church possibly dating from the time of Justinian. But the spot regarded by the Samaritans as the holiest upon earth is a small level plateau situated somewhat to the south of this. Here it is believed stood the temple built by Manasseh, the son of the Jewish high priest in the days of Nehemiah,³ and destroyed by John Hyrcanus 300 years afterwards (*Jos.*, *Ant.*, xiii. 9. 1). According to the Samaritans and some modern writers, Gerizim was the scene of the incidents recorded in Genesis xxii. 9–13. Probably as being the hill on the right hand of the spectator who, standing in the valley of Shechem, looks to the sun rising, it was also the hill on which, according to Josh. viii. 33, 34 (comp. Deut. xi. 29, 30, and xxvii. 12–26), after the conquest of Ai, the tribes of Simeon, Levi, Judah, Issachar, Joseph, and Benjamin stood to pronounce the blessings connected with a faithful observance of the law, while the remaining tribes from mount Ebal confirmed the curses attached to specified violations of the divine commands. According to Eusebius and Jerome indeed, the Ebal and Gerizim described in Deut. xi. 30 were not the mountains now known by that name, but two smaller hills in the neighbourhood of Jericho. This view, however, may now be regarded as universally abandoned (see Stanley, *Sinai and Palestine*, p. 236, note).

GERMAN CATHOLICS (DEUTSCHKATHOLIKEN), the name assumed in Germany towards the close of the year 1844 by certain dissentients from the church of Rome. The most prominent leader of the German Catholic movement was Johann Ronge, a Roman Catholic priest, who in October 1844 made a vigorous attack upon Arnoldi, bishop of Treves, for having made a relic, which he alleged to be the holy seamless coat of Christ, an object of pilgrimage and adoration. On Ronge's excommunication on this account, by the chapter of Breslau in December 1844, he received a large amount of public sympathy, and a dissenting congregation was almost immediately formed at Breslau with a very simple creed, in which the chief articles were belief in God the Father, creator and ruler of the universe; in Jesus Christ the Saviour, who delivers from the bondage of sin by his life, doctrine, and death; in the operation of the Holy Ghost; in a holy, universal, Christian church; in forgiveness of sins and the life everlasting. Within a very few weeks similar communities had been formed at Leipsic, Dresden, Berlin, Offenbach, Worms, Wiesbaden, and elsewhere; and at a "council" convened at Leipsic in March 1845, twenty-seven congregations were represented by delegates, of whom however only two or at most three were in clerical orders. Almost contemporaneously with the commencement of the agitation led by Ronge, another movement fundamentally distinct, though in some respects similar, had been originated at Schneidemühl, Posen, under the guidance of Johann Czerski, also a priest, who had come into collision with the church authorities on the then much discussed question of mixed marriages, and also on that of the celibacy of the clergy. The result had been his suspension from office in March 1844; his public withdrawal, along with twenty-four adherents, from the Roman communion in August; his excommunication im-

³ In the days of Alexander the Great, according to Josephus (*Ant.*, xi. 8, 2); but there are good reasons for believing this to be inexact. See Neh. xiii. 28, and compare Bertheau on the passage

mediately thereafter; and the formation, in October, of a "Catholic Apostolic Christian" congregation which, while rejecting various practices of the Roman Church, retained the Nicene theology and the doctrine of the seven sacraments. Czerski had been at some of the sittings of the "German Catholic" council of Leipsic; but when a formula somewhat similar to that of Breslau had been adopted, he refused to adhibit his signature because the divinity of Christ had been ignored, and he and his congregation continued to retain by preference the name of "Catholic Apostolic Christians" which they had originally assumed. Of the German Catholic congregations which had been represented at Leipsic some manifested a preference for the fuller and more positive creed of Schneidemühl, but a great majority continued to accept the comparatively negative theology of the Breslau school. The number of these increased with considerable rapidity, until in June 1846 in Silesia alone the members of the German Catholic communion were reckoned by thousands, while the congregations scattered over Germany amounted in all to 173. In Austria, however, and ultimately also in Bavaria, the use of the name German Catholics was officially prohibited, that of "Dissenters" being substituted, while in Prussia the adherents of the new creed were laid under various disabilities; these and other circumstances, among which the frequent occurrence of internal dissensions was perhaps the gravest, conspired to check at an early stage the prosperous career of a movement which in its beginnings had been looked upon by many intelligent observers with considerable hopefulness. In 1859 some of the German Catholics entered into a union with the "Free Congregations," when the united body took the title of "The Religious Society of Free Congregations." Before that time many of the congregations which were formed in 1844 and the years immediately following had been dissolved, including that of Schneidemühl itself, which ceased to exist in 1857. No very recent statistics of a trustworthy kind as to the numerical strength of the German Catholics are accessible. Their total in Prussia was 6395 in 1861, and 10,920 in 1867, while in Saxony they numbered 1772 in 1849, and 3015 in 1871. At an early stage the movement attracted the attention of Gervinus, the eminent historian and critic, who in 1846 published a pamphlet entitled *Die Mission des Deutschkatholicismus*, to which, as well as to Kampe's treatise *Das Wesen des Deutschkatholicismus*, reference may be made. See also the article by Schmid in Herzog's *Realencyclopädie* (1878).

GERMANICUS, CÆSAR, a distinguished Roman general and provincial governor in the reign of Tiberius, was born 15 B.C., and died 19 A.D. His name Germanicus, the only one by which he is known in history, he inherited from his father Claudius Drusus Nero, the stepson of Augustus, and the most famous of his generals. His mother was the younger Antonia, the daughter of Marcus Antonius and niece of Augustus, and he married Agrippina the grand-daughter of the same emperor. It was natural that a prince so intimately allied both by birth and connexion with the reigning family should be regarded as a candidate for the purple. Augustus, it would seem, long hesitated whether he should name him as his successor, and as a compromise required Tiberius to adopt him, though Tiberius had a son of his own. When his uncle succeeded to the throne, Germanicus was the only rival that he feared; and the emperor's jealousy and suspicion of him not only cut short his career of conquest but embittered the last years of his life, and precipitated, if it did not indirectly cause, his unhappy and premature end.

For the facts of his life our chief and, except a brief notice in Suetonius, almost our sole authority is Tacitus. Germanicus forms the central figure of the first two books

of the *Annals*, and in the minute and graphic record of his campaigns, the unravelling of the court intrigues to which he was subject, and the pathetic description of his last hours and of the outburst of grief and indignation which followed the news of his death, the historian has put forth all his powers. But a modern biographer, though compelled to trust to Tacitus for his materials, may yet be allowed to put upon them his own construction, to make allowance for the glamour which surrounded an amiable and ill-starred prince, and to discount the exaggerations of a master of rhetoric who has set his favourite hero in a blaze of light in order to deepen the shadows of his masterpiece Tiberius, the darkest and saddest portrait in all history. The following article will consist of a brief abstract of the life as related by Tacitus, and an estimate of the character as it presents itself to us in the foregoing records.

Of the early years and education of Germanicus little is known. That he possessed considerable literary abilities, and that these were carefully trained, we gather, not only from the speeches which Tacitus puts into his mouth, but from the reputation he left as an orator, as attested by Suetonius and Ovid, and from the fragments of his works which have survived. At the age of twenty he served his apprenticeship in the art of war under his uncle Tiberius, and was rewarded with the triumphal insignia for his services in crushing the revolt in Dalmatia and Pannonia. In 12 A.D. he was made consul, though he had neither attained the legal age nor passed through the grades of prætor and ædile. Soon afterwards he was appointed by Augustus to the important command of the eight legions on the Rhine. The news of the emperor's death found Germanicus at Lugdunum, where he was superintending the census of Gaul. Close upon this came the report that a mutiny had broken out among his legions on the lower Rhine. Germanicus hurried back to the camp, which was now in open insurrection. The tumult was with difficulty quelled, partly by well-timed concessions for which the authority of the emperor was forged, but mostly by the help of his personal popularity with the troops. Some of the insurgents actually proposed that he should put himself at their head and secure for himself the empire, but their offer was rejected with righteous horror. In order to calm the excitement and prevent further disaffection, Germanicus determined at once on an active campaign. Crossing the Rhine at the head of 12,000 legionaries and an equal number of allied troops, he attacked and routed the Marsi, and laid waste the valley of the Ems. In the following year he marched against Arminius, the conqueror of Varus, and reached the fatal battlefield in the Teutoburg Forest. The bones of the Roman soldiers still lay bleaching on the ground near the altars where their tribunes had been immolated, and the gibbets where the prisoners had been hanged. Having performed the last rites and erected a barrow to mark the spot, he led his army on, breathing vengeance against the foe. Arminius, however, favoured by the marshy ground, was able to hold his own, and it required another campaign before he was finally defeated. A masterly combined movement by land and water enabled Germanicus to concentrate his forces against the main body of the Germans encamped on the Weser, and to crush them in two obstinately contested battles. A monument erected on the field proclaimed that the army of Tiberius had conquered every tribe between the Rhine and the Elbe. Great as the success of the Roman arms had been, it was not such as to justify this boastful inscription. We read of renewed attacks from the barbarians, and plans of a fourth campaign for the next summer.

But no more victories were in store for Germanicus. His success had already stirred the jealousy and fears of Tiberius, and he was reluctantly compelled to obey the imperial sum-

mons and repair to Rome. The magnificence of a triumph and the idle honours of a consulship had little attraction for a general in mid-career of conquest, and a man of singularly simple habits and no political ambition. The enthusiasm with which he was welcomed, not only by the populace, which went in crowds to meet him as far as the twentieth milestone, but by the emperor's own prætorians, warned Tiberius that it might be equally dangerous to keep so popular a favourite at Rome, and the earliest pretext was seized to remove him from the capital. The recent death of Archelaus, king of Cappadocia, and a disputed succession in Parthia and Armenia, afforded a sufficient plea for Roman interference; and, a few months after his return, Germanicus was despatched to the East with extraordinary powers, and started on his mission without waiting to enter on his consulship. At the same time Tiberius took the further precaution of superseding Silanus, a connexion of Germanicus, in the government of Syria, and appointing in his stead one of the most violent and ambitious of the old nobility, Cneius Calpurnius Piso, in order to watch his nephew's movements, and if necessary to check his ambition. Germanicus proceeded by easy stages to his province, halting on his way in Dalmatia, where he conferred with Drusus, his brother by adoption, and visiting the battlefield of Actium, Athens, Ilium, and other places of historic interest. At Rhodes he met for the first time his coadjutor Piso, who had followed in his wake, and was seeking everywhere to thwart his policy and asperse his character. When at last he reached his destination, he found little difficulty in effecting the settlement of the disturbed provinces, notwithstanding the violent and persistent opposition of Piso. At Artaxata Zeno, the popular candidate for the throne, was crowned king of Armenia; to the provinces of Cappadocia and Commagena Roman governors were assigned; and Parthia was conciliated by the banishment of the dethroned king Vonones. After wintering in Syria Germanicus started next year for a tour in Egypt. The chief motive for his journey was love of travel and antiquarian study, and it seems never to have occurred to him, till he was warned by Tiberius, that he was thereby transgressing an unwritten law of the empire forbidding any Roman of rank to set foot in Egypt without express permission. On his return to Syria he found that all his arrangements had been upset by Piso. Violent recriminations followed, the result of which, it would seem, was a promise on the part of Piso to quit the province. But at this juncture Germanicus fell ill. Piso deferred his departure, and, when at length compelled to start, lingered in the neighbourhood of Syria, receiving with open exultation the bulletins which told of the prince's rapid decline. Germanicus on his side was fully convinced that he had fallen a victim to the arts of his unscrupulous enemy. He knew that he was dying, and believed that he was dying of poison. Even his gentle nature was stung to madness at the thought, and with his dying words he called on his friends and family to denounce his murderer and avenge his death. Whether these suspicions were true must remain an open question, yet the arguments in favour of a death from natural causes seem to preponderate. It is true that Piso desired his death, and, from what we know of their characters, neither he nor his wife Plancina were likely to stick at any means for procuring it. But a poisoner does not generally let his wishes be publicly known, nor show his exultation when they are attained. The evidence from the appearance of the corpse is still more uncertain. Suetonius indeed avouches that there were livid marks all over the body and foam at the mouth; but he adds as a further proof of poison that on the funeral pyre the heart remained unconsumed, which clearly shows that he was only retailing the vulgar gossip. Tacitus, though inclined to believe the worst of Piso, allows that the

report of the symptoms varied with the prepossession of the observers.

The sad tidings of his death cast a gloom over the whole Roman empire. To the provincials he had endeared himself by his simple manners, his affability, his generosity, his justice. The legions mourned their comrade who had always stood their friend at need, their general who had never known a defeat. At Rome there was a universal outburst of sorrow and indignation. The natural grief at the loss of a favourite prince was aggravated by the suspicion of foul play, and by hatred of the emperor who was at least guilty of recklessly exposing him to danger, and who now sullenly refused to join the general mourning. Men recalled the forboding words which had been whispered at his departure, "Whom the plebs love, die young." Nor was he unworthy of this passionate devotion. He had wiped out a great national disgrace; he had quelled their most formidable foe; he had pacified distant provinces; and in his high estate he had so borne himself that all save one man had loved and honoured him. His private life had been stainless, and he possessed in a singular degree the gift of personal attractiveness. And yet an impartial biographer must add that for his fair fame his death was opportune. There were elements of weakness in his character which his short life only half revealed: an almost feminine impetuosity which made him twice threaten to take his own life; a superstitious vein which impelled him to consult oracles and shrink from bad omens; an amiable dilétantism which led him to travel in Egypt while his enemy was plotting his ruin; a want of nerve and resolution which prevented him from coming to an open rupture with Piso till it was too late. His very virtues, his elegant taste, his chivalrous sense of honour, his unsuspecting openness and candour, unfitted him for the stern times in which he lived. He was as little fitted to play the part of Augustus as that of Alexander, to whom Tacitus fondly compares him; and had he lived to succeed to the purple the historian might have been compelled to pronounce on him the epitaph of Galba, that all would have thought him fit to reign if he had not reigned. (F. S.)

GERMAN SILVER, or NICKEL SILVER, known also under the names of White Copper and Packfong, is an alloy of copper, nickel, and zinc, prepared either by melting the copper and nickel together in a crucible, and adding piece by piece the previously heated zinc, or by heating the finely divided metals under a layer of charcoal, by means of an air furnace of strong draught, and promoting the thorough solution of the nickel by stirring. To destroy its crystalline structure, and so render it fit for working, it is heated to dull redness, and then allowed to cool. German silver is harder than silver; it resembles that metal in colour, but is of a greyer tinge. Exposed to the air it tarnishes slightly yellow, and with vinegar affords a crust of verdigris. At a bright red heat it melts, and with access of the atmosphere loses its zinc by oxidation. At a heat above dull redness it becomes exceedingly brittle. German silver is much used in the arts. For the manufacture of imitation silver for knives and forks its composition is—nickel and zinc of each 2 parts, and copper 4 parts; for handles of spoons and forks the proportion of copper in this formula is increased by 1. For rolling, the most suitable alloy is copper 3 parts, zinc 1, nickel 1. Candlesticks, bells, spurs, and other cast articles are made of a German silver containing 2 or 3 per cent. of lead. The addition of 2 to 2½ per cent. of iron, which must first be melted with part of the copper, makes an alloy which is whiter, but also more brittle and harder than ordinary German silver.

See COPPER, vol. vi. p. 351, and Watts, *Dict. of Chem.* ii. p. 51. On the electrical conductive capacity of German silver, see ELECTRICITY, vol. viii. p. 63.

GERMANY

PART I.—GEOGRAPHY AND STATISTICS.

GERMANY occupies the greater portion of central Europe, and has but few lines of natural boundary. If by the designation Germany is meant the territory inhabited by Germans, this is considerably larger than the German empire constituted in 1871, the former having an area of about 340,000, and the latter of 208,000 English square miles. The present German empire extends from 47° 16' to 55° 53' N. lat., and from 5° 52' to 22° 52' E. long. The eastern provinces project so far that the extent of the German territory is much greater from S.W. to N.E. than in any other direction. Tilsit is 815 miles from Metz, whereas Hadersleben, in Schleswig, is only 540 miles from the Lake of Constance. The difference in time between the eastern and western points is 1 hour and 8 minutes. The empire is bounded on the S.W. and S. by Austria and Switzerland (for 1170 miles), on the S.W. by France (275 miles), on the W. by Luxembourg, Belgium, and Holland (together 512 miles). The length of German coast on the North Sea or German Ocean is 300 miles, and on the Baltic 830 miles, the intervening land boundary on the north of Schleswig being only 53 miles. The eastern boundary is Russia (725 miles).

The total area of the empire, including rivers and lakes but not the "haffs" or lagoons on the Baltic, is 208,427 English square miles,¹ which is about the 18th part of Europe, the 250th part of the whole dry land, and the 853d part of the whole surface of the globe.

PHYSICAL FEATURES.

Coast and Islands.—The length of the coast-line is scarcely the third part of the whole frontier, so that the Germans must be regarded as less a maritime than an inland people. Unlike the eastern states of Europe, the German empire has not only an inland sea-shore, but is also in direct communication with the great oceans by means of the North Sea. The coasts of Germany are shallow, and deficient in natural ports, except on the east of Schleswig-Holstein, where wide bays encroach upon the land, giving access to the largest vessels, so that a great harbour for men-of-war has been constructed at Kiel. With the exception of those on the east coast of Schleswig-Holstein, all the important trading ports of Germany are river ports, such as Emden, Bremen, Hamburg, Lübeck, Stettin, Dantzig, Königsberg, Memel. A great difference, however, is to be remarked between the coasts of the North Sea and those of the Baltic. On the former, where the sea has broken up the ranges of dunes formed in bygone times, and divided them into separate islands, the mainland has to be protected by massive dikes, while the Frisian Islands are being gradually washed away by the waters. On the coast of East Friesland there are now only seven of these islands; of which Norderney, a bathing-place, is best known, while of the North Frisian Islands, on the western coast of Schleswig, Sylt is the most considerable. Besides the ordinary waste of the shores, there have been extensive inundations by the sea within the historic period, the gulf of the Dollart having been so caused in the year 1276. Sands surround the whole coast of the North Sea to such an extent that the entrance to the ports is not practicable without the aid of pilots. Heligoland, which has belonged to England since 1814, is a rocky island, but it also has been

¹ 1 English square mile = 2·5898945 square kilometres, or 0·470352 German square mile; 1 German square mile = 21·26087 English square miles; 1 sq. kilometre = 0·3861161 English square mile.

considerably reduced by the sea. The tides rise to the height of 12 or 13 feet in the Jahde Bay and at Bremerhafen, and 6 or 7 feet at Hamburg. The coast of the Baltic on the other hand possesses few islands, the chief being Alsen and Fehmern off the coast of Schleswig-Holstein, and Rügen off Pomerania. It has no extensive sands, though on the whole very flat. The Baltic has no perceptible tides; and a great part of its coast-line is in winter covered with ice, which also so blocks up the harbours that navigation is interrupted for several months every year. Its three haffs fronting the mouths of the large rivers must be regarded as lagoons or extensions of the river beds, not as bays. The Oder Haff is separated from the sea by two islands, so that the river flows out by three mouths, the middle one (Swine) being the most considerable. The Frische Haff is formed by the Nogat, a branch of the Vistula, and by the Pregel, and communicates with the sea by means of the Pillau Tief. The Kurische Haff receives the Memel, called Niemen in Russia, and has its outlet in the extreme north at Memel. Long narrow alluvial strips called *Nehrungen*, lie between the last two haffs and the Baltic. The Baltic coast is further marked by large indentations, the Gulf of Lübeck, that of Pomerania, east of Rügen, and the semicircular Bay of Dantzig between the promontories of Rixhöft and Brüsterort. The German coasts are now well provided with lighthouses.

Surface and Geology.—In respect of physical structure Germany is divided into two entirely distinct portions, which bear to one another a ratio of about 3 to 4. The northern and larger part may be described as a uniform plain, covered generally by very recent deposits, but with small areas of Tertiary and Secondary formations protruding here and there. South and Central Germany, on the other hand, is very much diversified in scenery and in geological structure. It possesses large plateaus, such as that of Bavaria, which stretches away from the foot of the Alps, fertile low plains like that intersected by the Rhine, mountain chains, and isolated groups of mountains, comparatively low in height, and so situated as not seriously to interfere with communication either by road or by railway. Its geological structure corresponds to this diversity of surface. The most ancient rocks of Germany are the gneisses, schists, and granites which form the Bohemian and Bavarian plateau, and extend into Saxony. Another isolated mass of similar rocks rising into the heights of the Vosges and Black Forest has been cut through by the valley of the Rhine. Silurian rocks are but scantily developed in Germany. The Devonian system, however, occupies an extensive area, since it forms the high tableland of the Taunus, Hunsrück, and Eifel, which ranges westward into Belgium. Carboniferous rocks with productive coal-fields cover isolated areas, chiefly in north-western Germany, particularly in Westphalia, at Saarbrück, in Saxony, and in Upper and Lower Silesia (see COAL). Between the Devonian uplands of the Taunus and the crystalline rocks of Bavaria a vast area of western Germany is occupied by the Triassic system, which ranges from Hanover to Basel and from near Metz to Baireuth. The southern half of this vast Triassic basin is bordered by a belt of overlying Jurassic rocks which skirt the Danubian plain in Würtemberg and Bavaria. Cretaceous rocks occur chiefly in north Germany in scattered patches flanking older formations. They evidently underlie the great plain, since they are found rising up here and there to the surface between Westphalia and