

knots, round the limbs of the sick man, and this, with the further application of holy water, would, it was believed, infallibly produce a cure, while the same result might be brought about by fixing "a sentence out of a good book on the sufferer's head as he lay in bed." Similar superstitions may yet be detected in the corners of our own land, and still more on the Continent, where the break with the traditions of the past has been less strongly felt. They form an important element in the history of the human intelligence and the light thrown upon their origin and

BACCARAT, a town of France, in the department of Meurthe and arrondissement of Lunéville. It has a large export trade of timber, planks, wheelwright's work, and charcoal, and is celebrated for the products of its glassworks, which were established in 1765. Population, 4763.

BACCHIGLIONE, a river of north-eastern Italy, which, rising in the mountains eastward of Trent, passes by Vicenza and Padua, and, after a course of 90 miles, falls into the lagune of Venice, south of Chioggia. It is navigable for large boats as far as Vicenza, and is connected with the Adige by means of a canal. The river is probably the ancient *Togisonus*.

BACCHUS, the Latin name of Dionysus, the god of wine. See **DIONYSUS**.

BACCHYLIDES, ΒακχYLίδης, a famous Greek lyric poet, born at Iulis in Ceos, was the nephew of Simonides, and flourished about 470 years before Christ. He resided long at the court of Hiero of Syracuse with Simonides and Pindar, of whom he is said to have been the rival. His works consisted of odes, dithyrambs, and hymns. Two epigrams contained in the Greek *Anthology* ascribe to him peculiar softness and sweetness of style. The few remains of his writings are contained in the collections of Brunck, Bergk, Bland, and Hartung. They have been published separately by Neue, *Bacchylides Cei Frag.*, Berl., 1823.

BACCIO DELLA PORTA, called **FRA BARTOLOMMEO DI S. MARCO**, a celebrated historical and portrait painter, was born at Savignano, near Florence, in 1469, and died in 1517. He received the first elements of his artistic education from Cosimo Roselli; and after leaving him, devoted himself to the study of the great works of Leonardo da Vinci. Of his early productions, which are distinguished for their grace and beauty, the most important is the fresco of the Last Judgment, in which he was assisted by his friend, Mariotto Albertinelli. While he was engaged upon some pieces for the convent of the Dominican friars, he made the acquaintance of Savonarola, who quickly acquired great influence over him, and Baccio was so affected by his cruel death, that he soon after entered the convent, and for some years gave up his art. He had not long resumed it, in obedience to his superior, when the celebrated Raffaele came to Florence and formed a close friendship with him. Bartolommeo learned from the younger artist the rules of perspective, in which he was so skilled, while Raffaele owes to the *frate* the improvement in his colouring and handling of drapery, which was noticeable in the works he produced after their meeting. Some years afterwards he visited Rome, and was struck with admiration and a feeling of his own inferiority when he contemplated the masterpieces of Michel Angelo and Raffaele. With the latter, however, he remained on the most friendly terms, and when he departed from Rome, left in his hands two unfinished pictures which Raffaele completed. Bartolommeo's figures had generally been small and draped. These qualities were alleged against him as defects, and to prove that his style was not the result of want of power, he painted the magnificent figure of St Mark, and

early fortunes by the revelations of cuneiform discovery has opened a new chapter in the science of religion.

For Babylon and Babylonia see Rich's *Babylon and Persopolis*, and two memoirs on Babylon; Layard's *Nineveh and Babylon*; Loftus's *Chaldea and Susiana*; Rawlinson's *Five Great Monarchies*; Oppert's *Expédition Scientifique en Mésopotamie*, and *Fastes de Sargon*; Ménant's *Annales des Rois d'Assyrie*; Lenormant's *Premières Civilisations*, and *La Magie chez les Chaldéens*; Schrader's *Keilinschriften und das Alte Testament*; *Records of the Past*; and the *Transactions of the Society of Biblical Archaeology*. (A. H. S.)

the undraped figure of St Sebastian. The latter was so well designed, so naturally and beautifully coloured, and so strongly expressive of suffering and agony, that it was found necessary to remove it from the place where it had been exhibited in the chapel of a convent. The majority of Bartolommeo's compositions are altar-pieces, and few of them are to be met with out of Tuscany. They are remarkable for skill in the massing of light and shade, richness and delicacy of colouring, and for the admirable style in which the drapery of the figures is handled, Bartolommeo having been the first to introduce and use the lay-figure with joints.

BACH, JOHANN-SEBASTIAN, was born at Eisenach in Thuringia, on March 21, 1685, the same year which gave birth to his great contemporary Handel. His father held a musical appointment from the town council, being himself descended from a musician. The family of the Bachs, like those of some of the great Italian painters, may be cited as one of the most striking instances of hereditary artistic genius. Through four consecutive generations they followed the same calling, counting among their number no less than fifty musicians of more or less remarkable gifts. Even of the first ancestor of the family known to us, a miller and baker, who, owing to religious persecutions, had to leave Pressburg in Austria for the Protestant north of Germany, we are told that in his leisure hours he was fond of playing the lute, the sounds of which, as the old family chronicle naively adds, must have mixed sweetly with the clattering of the wheels of his mill. The accumulated artistic gifts and traditions of his forefathers were at last brought to their highest development by the genius of our master, who again transmitted them to his numerous sons. Johann-Sebastian's parents died before he had reached his tenth year, and he was left to the care of his elder brother, an organist at Ohrdruf, from whom he received his rudimentary musical education. According to a tradition the elder Bach was by no means pleased with the rapid progress of his more gifted brother, and even refused him access to the sources of knowledge available at that primitive period; he was particularly anxious to withhold from him a certain collection of compositions for the pianoforte, by contemporary masters, which, however, the younger Bach contrived to obtain surreptitiously, and which he copied at night in the course of six months. By practising the music thus become his own on the pianoforte, he made himself master of the *technique* of an instrument, the capabilities of which he was destined to enlarge and develop by the works of his own genius. In 1698 his brother died, and Bach, at the age of fourteen, saw himself thrown on his own resources for his further means of support. He went to Lüneburg, where his beautiful soprano voice obtained him an appointment as chorister at the school of St Michael. In this manner he became practically acquainted with the principal works of vocal music, continuing at the same time his practice on the organ and pianoforte. A special teacher of any of these instruments, or, indeed, of the theory of music, Bach seems never to have had, at least

not to our knowledge, and his style shows little affinity to the modes of expression in use before him. In some measure, indeed, it may be said that he new-created his own style, and, at the same time, that of modern music in general, a proof both of the originality of his power and of the autodidactic kind of his training. Nevertheless, Bach was anxious to profit by the examples of contemporary masters of his art. We hear of frequent trips to the neighbouring cities of Hamburg, Lübeck, and Celle, at that time important centres of artistic life. In the first-mentioned city Keiser created sensation by the unrivalled splendour of his operatic productions, while at Lübeck the celebrated organist, Buxtehude, excited the enthusiastic admiration of the young art-aspirant. In Celle, on the other hand, a celebrated band, composed chiefly of French artists, offered an opportunity for the practical study of orchestral music. Such were the elements of his self-education, to which must be added his thorough knowledge of Palestrina and other masters of the grand old Italian school, of most of whose works Bach possessed copies written with his own hand.

At the age of eighteen Bach returned to Thuringia, where his executive skill on the organ and pianoforte attracted universal attention, and even obtained him various musical appointments, of which we mention as the most important that of court organist to the duke of Weimar. One, and not the least welcome, of his official duties was the composition of sacred music. One of his most beautiful sacred cantatas, *Ich hatte viel Bekümmerniss*, was composed during his stay at Weimar. An amusing incident of his otherwise quiet and eventless career also belongs to this time. We are speaking of his musical combat with the celebrated French organist, J. Louis Marchand, who had reached Dresden on his travels, and lorded it over his artistic colleagues at the Saxon court in the most sublime manner. The injured musicians, in their endeavours to humble the pride of the Frenchman, at last hit upon the idea of proposing a competition on the organ between him and Bach, whose fame at that time had begun to spread far beyond his place of residence. He was summoned to Dresden, and the day of the tournament fixed, at which the court and all the musical celebrities of the town were to be present. At first Marchand treated his young and comparatively unknown rival with scorn, but on hearing him perform at a preparatory meeting, he was so struck with Bach's power that he ignominiously quitted the field, and vanished from Dresden before the day of the contest arrived. This triumph led to Bach's appointment as musical conductor (*Kapellmeister*) to the duke of Köthen, which he held from 1717-1723, after a previous stay at Weimar for nearly nine years. In 1723 he removed to Leipzig, where the position of cantor at the celebrated "Thomasschule," combined with that of organist at the two principal churches of Leipzig, was offered to him. It was here that the greater part of his works were composed, mostly for the immediate requirements of the moment. Several of them he engraved himself, with the assistance of his favourite son, Friedemann. The further course of his life ran smoothly, only occasionally ruffled by his altercations with his employers, the town-councillors of Leipzig, who, it is said, were shocked by the "unclerical" style of Bach's compositions, and by his independent bearing generally. He was married twice, and had by his two wives a family of eleven sons and nine daughters. In 1747 Bach made a journey to Potsdam by the invitation of Frederick the Great, who, himself a musical amateur, received the master with distinguished marks of regard. He had to play on the numerous pianofortes of the king, and also to try the organs of the churches of Potsdam. Two years

after this event his sight began to fail, and before long he became perfectly blind, a circumstance which again coincides with the fate of his great contemporary, Handel. Bach died of apoplexy on the 28th July 1750. His loss was deplored as that of one of the greatest organists and pianoforte players of his time. Particularly his powers of improvisation are described as unrivalled by any of his contemporaries. Of his compositions comparatively little was known. His MS. works were at his death divided amongst his sons, and many of them have been lost in the course of time; only about one-half of his greater works were recovered, when, after the lapse of nearly a century, the verdict of his neglectful contemporaries was reversed by an admiring posterity.

The history of this Bach revival is closely connected with the name of Mendelssohn, who was amongst the first to proclaim by word and deed the powers of a genius almost too gigantic to be grasped by the receptivity of one generation. By the enthusiastic endeavours of Mendelssohn, Schumann, and others, the circle of Bach's worshippers has increased rapidly. In 1850, a century after his death, a society was started for the correct publication of all of Bach's remaining works, to which music owes the rescue from oblivion of some of its sublimest emanations. Amongst those who have vastly contributed to establish the rapport between our master's genius and modern lovers of art, we also mention Dr Robert Eranz, himself one of Germany's greatest lyrical composers, who has edited and adapted to the resources of the modern orchestra several of Bach's most beautiful works. Of these works, comprising almost all the different forms of music, vocal and instrumental, barring the opera, we can enumerate only the most important ones, referring the reader for further information to the biographical and critical works by Bach's son, Philipp Emmanuel, by Forkel, and more recently by Bitter and Spitta. The last-mentioned book has appeared quite lately, and exceeds its predecessors both by comprehensiveness of research and critical appreciation. Of his numerous and sacred oratorios, cantatas, and similar choral works, we name the so-called Christmas oratorio (1734), the Passion music to the words of St John, and that infinitely grander to the gospel of St Matthew (1734), also his Mass in B minor, one of the greatest masterpieces of all times, and the Magnificat in D. Another cantata is constructed on Luther's grand chorale, *Ein feste Burg*. The most celebrated amongst his pianoforte compositions is the so-called *Woltemperirte Clavier*, a collection of preludes and fugues in the different keys of the scale. For the orchestra we name the *Grande Suite in D*, and for his favourite instrument, the organ, the so-called *Chromatic Fantasia*. It remains to add a few words about Bach's position in the history of musical development. By Marx, a well-known critical writer, he has been called the "Founder and Father of German Music;" and it cannot be denied that no other German composer before him had attained a specifically national type of musical utterance as distinguished from that of other nations. This applies both to matter and manner. Bach has frequently founded his grandest conceptions on the simplest tune of old chorales, that is, of purely popular effusions of pious fervour, such as had survived in the living memory of the nation from the time of Luther and his great revival of religious feeling. Sometimes these tunes were adapted for religious purposes from still older songs of a secular character, being thus thoroughly interwoven with the inmost feeling of the German people. In raising these simple creations of popular growth to the higher sphere of art, Bach has established his claim to the name of the creator of the *Germanic* as opposed to the *Romance* phase of musical art. This spirit of German, or to speak more

accurately, North German nationality, thoughtful yet naïve, earnest yet tender, has also reacted on the form of Bach's creations. Bach's counterpoint, compared with the polyphonic splendour of Palestrina or Orlando di Lasso, is, as it were, of a more intense, more immediately personal kind. In his sacred cantatas, the alternate exclamations of the voices sometimes rise to an almost passionate fervour of devotion, such as is known only to the more individualised conception of human relations to the Deity peculiar to Protestant worship,—applying that term in a purely emotional, that is, entirely unsectarian sense. It is thus that Bach has vivified the rigid forms of the fugue with the fire of individual passion. About the peculiarities of his style, from a technical point of view, we can speak no further. How his style and his genius, neglected by his contemporaries, and obscured by other masters, like Haydn and Mozart, starting from a different basis and imbued with a different spirit, have ultimately been destined to exercise a potent spell on modern art, we have indicated already.

(F. H.)
BACH, KARL PHILIPP EMMANUEL, second son of the above, was born at Weimar on the 14th March 1714, and died at Hamburg on the 14th September 1788. He was perhaps the most highly gifted musician of the eleven brothers, and his influence on the development of certain musical forms gives him a prominent place in the history of the art. He studied at the Thomasschule and afterwards at the university of Leipsic, devoting himself, like several of his brothers, to jurisprudence. In 1738 he took up his residence in Berlin, where he was soon afterwards appointed chamber musician to Frederick the Great. In 1767 he was allowed, after considerable negotiation, to relinquish his situation at court in order to accept the post of kapellmeister at Hamburg, where he passed the last twenty-one years of his life. He was a very prolific composer, his most ambitious work being the oratorio of *The Israelites in the Wilderness*. The majority of his compositions, however, were naturally written for his instrument, the clavier. His *Versuch über die wahre Art das Klavier zu spielen* (Essay on the true method of harpsichord playing) was long a standard work, and Clementi professed to have derived from Bach his distinctive style of pianoforte playing. Haydn is said to have acknowledged in his old age his deep obligation to the works of Philipp Emmanuel Bach. From them he certainly learned the form of the sonata and symphony, of which Bach may fairly claim to have been the originator, though Haydn enriched it and gave it permanence. This fact gives Bach's name a distinction to which the intrinsic merits of his compositions might not entitle him, it being now generally agreed by the best critics that he was a somewhat feeble imitator of his father's style.

BACHE, ALEXANDER DALLAS, a distinguished American physicist, who has gained a wide reputation as superintendent of the great American Coast Survey, was a great-grandson of Benjamin Franklin, and was born at Philadelphia, 19th July 1806. In 1821 he entered the military academy at West Point, and graduated there with the highest honours in 1825. For some time he acted as assistant professor in the academy, holding at the same time a commission as lieutenant of engineers, in which capacity he was engaged for a year or two in the erection of coast fortifications. He occupied the post of professor of mathematics in the university of Pennsylvania from 1827 to 1836, and was then made president of the newly-instituted Girard College. In this capacity he undertook a journey through some of the principal countries of Europe, in order to examine their systems of education, and on his return published a very valuable report. In 1843, on the death of Professor Hassler, he was appointed by

Government to the office of superintendent of the coast survey. He succeeded in impressing Congress with a sense of the great value of this work, and by means of the liberal aid it granted, he carried out a singularly comprehensive plan with great ability and most satisfactory results. By a skilful division of labour, and by the erection of numerous observing stations, the mapping out of the whole coast proceeded simultaneously under the eye of the general director. Nor were the observations confined to mere description of the coast-line; the several stations were well supplied with instruments, and a vast mass of magnetic and meteorological observations was collected, such as must infallibly prove of infinite service in the future progress of physical science. The annual reports issued by the superintendent were admirable specimens of such summaries, and secured for him a high reputation among European savants. Professor Bache contributed numerous papers to scientific journals and transactions, and laboured earnestly to raise the position of physical science in America. For some months before his death, which took place at Newport, 17th February 1867, he was afflicted with softening of the brain, caused, perhaps, by intense and long-continued mental exertion.

BACHELOR, a word of various meaning, and of exceedingly obscure origin. In modern times the most common significations of it are—(1), an unmarried person; (2), one who has taken the lowest degree in any of the faculties at a university. At various times, however, it has signified either a young man in general, from which the first of the modern meanings was easily developed; or a knight who was unable to lead a body of retainers into the field, *i.e.*, to use the technical phrase, was not able *lever bannière*; or, finally, an ecclesiastic at the lowest stage of his course of training. It has also been pointed out that *bachelor*, which meant the body of aspirants to knighthood, came to be used as synonymous with *gentry*.

Etymology gives little help in arranging these meanings so as to discover the unity underlying them. In mediæval Latin the word *baccalaria* (connected by Ducange with *vasseleria*, by Stubbs with *bacca*, *i.e.*, *vacca*, a cow), which, according to Diez, is peculiar to the south of France and the north of Spain, signified a certain portion of land, the size and tenure of which imposed on the possessor certain feudal duties. The possessor was called *baccalarius*, and the name readily acquired the signification of one who, from poverty or other cause, as youth, was not able to take rank as a knight. As a third stage in the use of the word, Diez marks out the application of it to denote the lowest degree in a university. But though these transitions from the primitive meaning may perhaps appear natural, there is no historic evidence of their having taken place. The same applies to the five meanings given in Ducange.

We look with more prospect of success to the old French words *bacelle*, *bacelote*, *bachelette*, *bachelorie*, *bachelage*, which have all the meaning of youth, apprenticeship. They may possibly be connected with the Celtic or Welsh words, *bach*, little, *bachgen*, a boy. (See Wedgwood, *s.v.*, who is of opinion that the *baccalarius* of the north of Spain is not in any way connected with our word *bachelor*.) It is very probable that this is truly the root of the word. It has, however, been frequently connected with *baculus*, a stick, from which is supposed to have come *bacularius*, as the word used often to be spelled. (See *Promptorium Parvulorum*, *s.v.*) Whether the relation in this case is that of *shooting forth* or *budding* (*cf.* the Portuguese *bacharel*, a twig of vine, and Barbazan's derivation from *baccalia*), or the more obvious one suggested by the functions of the *bacularius*, who appears to have acted as the monitor or præceptor at schools (see H. T. Riley, *Chronica Monasterii St Albani*), is very doubtful.

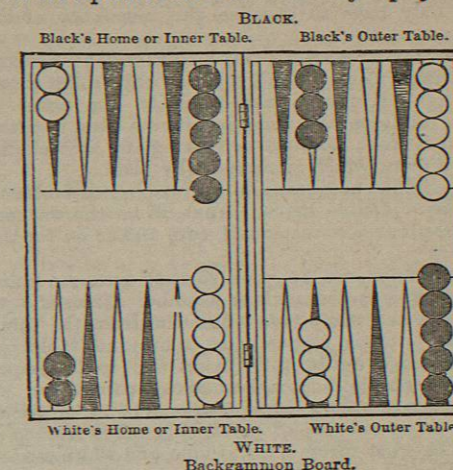
Bachelors, or unmarried persons, have in many countries been subjected to penal laws. The best-known examples of such legislation are those of Sparta and Rome. At Sparta, citizens who remained unmarried after a certain age were subjected to a species of *drypia*. They were not allowed to witness the gymnastic exercises of the maidens; and during winter they were compelled to march naked round the market-place, singing a song composed against themselves, and expressing the justice of their punishment. The usual respect of the young to the old was not paid to bachelors (Plut., *Lyc.*, 15). At Athens there was no definite legislation on this matter; but certain minor laws are evidently dictated by a spirit akin to the Spartan doctrine (see Schömann, *Gr. Alterth.*, i. 548). At Rome, though there appear traces of some earlier legislation in the matter, the first clearly known law is that called the Lex Julia, passed about 18 B.C. It does not appear to have ever come into full operation; and in 9 A.D. it was incorporated with the Lex Papia et Poppæa, the two laws being frequently cited as one, Lex Julia et Papia Poppæa. This law, while restricting marriages between the several classes of the people, laid heavy penalties on unmarried persons, gave certain privileges to those citizens who had several children, and finally imposed lighter penalties on married persons who were childless. In Britain there has been no direct legislation bearing on bachelors; but, occasionally, taxes have been made to bear more heavily on them than on others. Instances of this are the Act (6 and 7 Will. III.) passed in 1695; the tax on servants, 1785; and the income tax, 1798.

BACHIAN, one of the East Indian islands belonging to the group of the northern Moluccas, situated immediately south of the equator, and lying with its subordinate islands, Mandioli and Kasiruta, between 127° and 127° and 50 E. long. It is of an irregular form, consisting of two distinct mountainous parts, united by a low isthmus, which a slight subsidence would submerge. The area is estimated at about 600 geographical square miles. Sandstone, coralline limestone, and pebbly conglomerate are the prevailing rocks. Of volcanic formations no traces were discovered by Mr Wallace, but other travellers speak of hot springs that seem to point to volcanic activity. The sulphur spring at Taubenkit has a temperature of 125° Fahr.; and a more remarkable example of the same phenomenon exists at Sayawang on the east coast. The highest mountain in the southern half of the island is Gunong Sabella, which is regarded by the natives as the seat of evil spirits. It was partially ascended by Bernstein in 1861. A large portion of the surface is richly wooded, and sago, cocoa-nuts, and cloves are abundantly produced, while, in spite of the extermination of nutmeg-trees by the Dutch, at least one extensive grove remains. Bachian is remarkable as the most eastern point on the globe inhabited by any of the Quadrumana. The interior of the island is uninhabited, and none of the dwellers on the coast are indigenous. They consist of the Sirani or Christian descendants of the Portuguese, of Malays, with a Papuan element, Galela men from the north of Jilolo, and a colony from Tomore, in the eastern peninsula of Celebes. The Sirani preserve various marks of their Portuguese origin, wear a semi-European dress, and celebrate Sunday with dancing and music. The government of the island is vested in a sultan, under the protection of the Dutch, to whom it is becoming of considerable importance from the discovery of coal and other minerals. The chief town or village, called Amassing by the natives, but often spoken of as Bachian, is situated on the isthmus.

BACKGAMMON, a game played with dice, said to have been invented about the 10th century (Strutt). The etymology of the word backgammon is disputed; it is probably Saxon,—Bæc, back; gamen, game, *i.e.*, a game in which

the players are liable to be sent back. Other derivations are, Dan. *bakke*, tray, *gammen*, game (Wedgwood); and Welsh, *bach*, little, *cammaun*, battie (Henry).

Backgammon is played by two persons, having between them a *backgammon board*. (See diagram.) The board is divided into *tables*, each table being marked with six *points*, coloured alternately white and black. The inner and outer tables are separated from each other by a projecting *bar*.



The board is furnished with fifteen white and fifteen black men, disposed at the commencement of a game in the manner shown above. The arrangement of the men may be reversed, as it would be if the diagram were turned upside down, and the white men put where the black now stand, and *vice versa*, there being no rule as to whether the play shall be from right to left, or from left to right. It is usual to make the inner table (see diagram) the one nearest to the light (*Académie des jeux; règles du jeu de toute-table*).

Two dice boxes are required, one for each player, and a pair of dice, which are used by both players. The dice are marked with numbers on each face from one to six, number one being called *ace*; two, *deuce*; three, *trois* (pronounced *trei*); four, *quatre* (*katre*); five, *cinque*; and six, *six* (*size*). The board being arranged, each player throws one die; the one who throws the higher number has the right of playing first; and he may either adopt the throw originally made by the two players, each throwing one die; or he may throw again, using both dice.

Each player moves his own men from point to point, the moves being determined by throws of the dice made by the players alternately. A player may move any of his men a number of points corresponding to the numbers thrown by him, provided the board is not *blocked* by two or more of his adversary's men occupying the point to which he wishes to move. Thus, suppose white throws *cinque*, six, he may move one of his men from the left-hand corner of the black's inner table to the left-hand corner of black's outer table for six; he may, again, move the same man five points further on, *viz.*, to the right-hand point of the same table for five, when his move is completed; or he may leave the man first moved six, and move any other man five points, where the board is open. But white cannot move a man for five from the ace point in black's inner table, because the six point in that table (*i.e.*, the fifth point from where white moves) is blocked by the black men. Any part of the throw which cannot be moved is of no effect; but it is compulsory for a player to move the whole throw if he can. Thus, if the men were differently placed, and white could move a six, and having