

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.

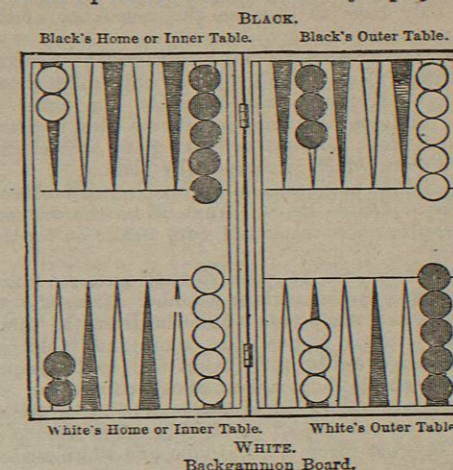
Bachelors, or unmarried persons, have in many countries been subjected to penal laws. The best-known examples of such legislation are those of Sparta and Rome. At Sparta, citizens who remained unmarried after a certain age were subjected to a species of *drypia*. They were not allowed to witness the 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

done so could not move a five, his move is completed. If, however, by moving the five first, he can afterwards move a six, he may be required to make the move in that manner. All white's moves must be in the direction indicated, viz., from black's inner table to black's outer, and from this to white's outer table, and so on to white's inner table; and all black's moves must be in the contrary direction. Of course, where men are originally placed part of the way home, they only have to traverse the remainder of the distance.

A player in moving must not skip a point which is blocked by his adversary's men. Thus, suppose white's first throw is fives, he cannot move a man from the ace point of black's inner table to the cinque point of black's outer, although that is free; because in moving the first cinque he comes to a point which is occupied by black.

When two similar numbers are thrown (called *doublets*), the player has a double move. Thus, if he throws aces he has to move four aces instead of two, and so on for the other numbers.

When a player moves his men so as to occupy a point with two men, it is called *making a point*. Thus, if ace, trois are thrown and white moves one man from the three in his outer table to the cinque point in his inner table, for trois, and then moves a man from the six point to the cinque point of his inner table, for ace, he makes a point there.

If a player leaves only a single man on a point, or places a single man on an unoccupied point, it is called *leaving a blot*. Thus, if the first throw is six, cinque, and white carries a man from black's inner table as far as he will go, white leaves a blot on the ace point of his opponent's home table.

When a blot is left the man may be taken up, or the blot may be *hit*, if, while it remains, the adversary throws a number which will enable him to place a man on that point. For example, if a blot is left on black's ace point, as in the case previously supposed, and black throws a five, or numbers that make up five, he can hit the blot from his six point; or similarly, if he throws seven, or numbers that make up seven, he can hit the blot from the three men posted in his outer table. The man hit is placed on the bar, and has to *enter* black's inner table again at white's next throw.

It will be observed that black in taking up white leaves a blot himself, which subjects him to be taken up if white enters with an ace. If this should occur, black's man is placed on the bar, and has at his next throw to enter white's inner table, whence he has to start his journey home. Suppose white to have a blot as before on black's ace point, and black to throw sixes, black could then move two men from white's outer table to his own bar point (so called because it is close to the bar), and thence again to his own ace point, when he would hit white without leaving a blot.

The point in which a man is entered must not be blocked by two or more men belonging to the adversary. Thus, to carry on the illustration, if white now throws aces, or sixes, or six, ace, he cannot enter at all. He is not allowed to move any man while he has one to enter; consequently his throw is null and void, and black throws again. It sometimes happens that one player has a man up, and that his adversary occupies all the points on his own home table with two or more men (called *having his table made up*). In this case, the player with a man up cannot enter; and as it is useless for him to throw, his adversary continues throwing until he is obliged to open a point on his innertable.

Two blots may be taken up at once if the adversary throws numbers that will hit them both. It is possible with doublets to take up four blots at once, but this could scarcely happen in a game between players of any proficiency.

The game proceeds by moving the men round towards home, or by hitting blots and sending them back, until one of the players gets all his men into his inner table or home. As soon as this stage is reached, the player who has accomplished it begins to take his men off the board or to *bear* them. Thus, suppose he has several men on every point of his table, and throws six, quatre; he bears one man from his six point, and one from his quatre point. If his six point is unoccupied, he can bear a six from his cinque point, or from the highest point which is occupied, and so on with smaller numbers, provided the numbers thrown are higher than the points occupied; if lower, the throw must be moved. A player has the option of moving a man when he can, instead of bearing it. Thus, in the case originally given the six must be borne, because a six cannot be moved; but the quatre may be moved if preferred, by moving a man from the six point to the deuce point, or from cinque point to the ace point. Doublets entitle to bear or move four men in accordance with the previous rules. The adversary similarly bears his men as soon as he gets them all home. If, after a player has commenced bearing his men, he should be hit on a blot, he must enter on his adversary's inner table, and must bring the man taken up into his own inner table before he can bear any more.

Whoever first bears all his men wins the game:—a single game or *hit* if his adversary has borne any of his men; a double game or *gammon* if the adversary has not borne a man; and a triple game or *backgammon*, if, at the time the winner bears his last man, his adversary, not having borne a man, has one in the winner's inner table.

When a series of games is played, the winner of a hit has the first throw in the succeeding game; but if a gammon is won, the players each throw a single die to determine the first move of the next game.

In order to play backgammon well, it is necessary to know all the chances on two dice, and to apply them in various ways. The number of different throws that can be made is thirty-six. (See HAZARD.) By taking all the combinations of these throws which include given numbers, it is easily discovered where blots may be left with the least probability of being hit. For example, to find the chance of being hit where a blot can only be taken up by an ace; the adversary may throw two aces, or ace in combination with any other number up to six, and he may throw each of these in two different ways, so that there are in all eleven ways in which an ace may be thrown. This deducted from thirty-six (the total number of throws), leaves twenty-five; so that it is 25 to 11 against being hit on an ace. It is very important to bear in mind the chance of being hit on any number. The following table gives the odds against being hit on any number within the reach of one or two dice:—

It is 25 to 11, or about 9 to 4, against being hit on 1	2
" 24 " 12, or 2 " 1, "	3
" 22 " 14, or about 8 " 2, "	4
" 21 " 15, or 7 " 5, "	5
" 19 " 17, " 9½ " 8½, "	6
" 30 " 6, " 5 " 1, "	7
" 30 " 6, " 5 " 1, "	8
" 31 " 5, " 6 " 1, "	9
" 33 " 3, " 11 " 1, "	10
" 34 " 2, " 17 " 1, "	11
" 35 " 1, " 35 " 1, "	12

The table shows that if a blot must be left within the reach of one die (*i.e.*, on any number from 1 to 6), the nearer it is left to the adversary's man, the less probability there is of its being hit. Also, that it is long odds against being hit on a blot which is only to be reached with double dice, and that, in that case (*i.e.*, on any number from 7 to 12), the further off the blot is, the less chance there is of its being hit.

The table assumes that the board is open for every possible throw. If part of the throw is blocked by an intervening point being held by adverse men, the chance of being hit may be less. Thus, a blot may be hit on an eight with deuces; fours; cinque, trois (twice); or six, deuce (twice). If the fourth point is blocked, the blot cannot be hit with deuces or fours, and consequently the chance of its being hit is reduced from 30 to 6 to 32 to 4, or from 5 to 1 to 8 to 1.

Two principles, then, have to be considered in moving the men:—(1.) To make points where there is the best chance of obstructing the opponent; (2.) When obliged to leave blots, to choose the position in which they are least likely to be hit, *i.e.*, either as near as possible to an adverse man, or as far as possible from any adverse men; or where the intervening points are blocked by the player's own men.

At the beginning of the game it is advisable, if possible, to secure the cinque point in your own inner table, or the cinque point in your adversary's inner table, or both. If you succeed in this, you should then play a bold game in hopes of winning a gammon. The next best point to gain is your own bar point; and the next to that the quatre point in your own inner table.

If you are fortunate enough to secure all these points, and your adversary's inner table is less favourably made up, it is then to your interest to open your bar point (in expectation of compelling your adversary to run out of your inner table with a six), and also to keep any men you may have in the outer tables spread (*i.e.*, not to crowd a number of men on one point). In this case you have a good chance of hitting the man your adversary brings out, and also of hitting the man he has left on your ace point.

If you succeed in taking both these men, and your adversary has a blot in his inner table, it will be to your interest not to make up your own table, but to leave a blot there on purpose, in hopes of his entering on it. You will then have a probability of hitting a third man, which, if accomplished, will give you considerable odds (according to Hoyle, 4 to 1) in favour of winning a gammon; whereas if you have only two of his men up, the odds are against your gammoning him.

The best move for every possible throw at the commencement of a game is as follows:—If you throw aces (the best of all throws), move two on your bar point and two on your cinque point. This throw is often given to inferior players by way of odds.

Ace deuce: move the ace from your adversary's ace point (if playing for a hit only), and the deuce from the five men placed in your adversary's outer table. If playing for a gammon, move the ace from the six to the cinque point in your inner table.

Ace trois: make the cinque point in your inner table.

Ace quatre and ace cinque: move the ace from your adversary's ace point, and the quatre or cinque from the five men in your adversary's outer table. If playing for a gammon, play the ace on the cinque point in your inner table.

Ace six: make your bar point.

Deuces: move two on the quatre point in your inner table, and two on the trois point in your opponent's inner table. If playing for a gammon, move two on the quatre point in your inner table, and two from the five men in your adversary's outer table.

Deuce trois and deuce cinque: move two men from the five placed in your adversary's outer table.

Deuce quatre: make the quatre point in your own table.

Deuce six: move a man from the five in your adversary's outer table, and place him on the cinque point in your own table.

Threes: play two on the cinque point in your inner table, and three on the quatre point of your adversary's inner table. For a gammon, play two on your cinque point and two on your trois point in your inner table.

Trois quatre: move two men from the five in your opponent's outer table.

Trois cinque: make the trois point in your own table.

Trois six: bring a man from your adversary's ace point as far as he will go.

Fours: move two on the cinque point in your adversary's inner table, and two from the five in his outer table. For a gammon, move two men from the five in your opponent's outer table to the cinque point in your own table.

Quatre cinque and quatre six: carry a man from your adversary's ace point as far as he will go.

Fives: move two men from the five in your adversary's outer table to the trois point in your inner table.

Cinque six: move a man from your adversary's ace point as far as he will go.

Sixes (the second best throw): move two on your adversary's bar point, and two on your own bar point.

Subsequent moves depend on the intervening throws; consequently the problem becomes too complicated for analysis. Some general rules, however, may be given.

In carrying the men home carry the most distant man to your adversary's bar point, next to the six point in your outer table, and then to the six point in your inner table. By following this rule as nearly as the throws admit, you will carry the men to your inner table in the fewest number of throws. When all are home but two, it is often advisable to lose a point, if by so doing you put it in the power of a high throw to save a gammon.

If, in endeavouring to gain your own or your adversary's cinque point, you have to leave a blot and are hit, and your adversary is forwarder in the game than you, you must put another man on your cinque or bar point, or into your adversary's table. If this man is not hit, you may then make a point, and so get as good a game as your opponent. If it is hit, you must play a *back game* (*i.e.*, allow him to take up as many men as he likes); and then in entering the men taken up, endeavour to secure your adversary's ace and trois points, or ace and deuce points, and keep three men upon his ace point, so that if you hit him from there you still keep the ace point protected.

To find which is the forwarder, reckon how many points you have to bring all your men home to the six point in your inner table. Add to this six for every man on the six point in your tables, five for every man on your cinque point, and so on; and then make the same calculation for your adversary's men.

Avoid carrying many men upon the trois or deuce point in your own tables, as these men are out of play, and the board is left open for your adversary.

Whenever you have taken up two of your adversary's men, and have two or more points made in your inner table, spread your other men to take the best chance of making another point in your tables, and of hitting the man your adversary enters. As soon as he enters, compare his game with yours, and, if equal or better, take up his man, except when playing for a hit only, and your playing the throw gives you a better chance for the hit.

Always take up a man if the blot you leave in making the move can only be hit with double dice, except when playing for a hit only, and you already have two of your opponent's men in your tables, and your game is forwarder; because your having three of his men in your tables gives him a better chance of hitting you without leaving a blot than if he has only two.

In entering a man which it is to your adversary's advantage to hit, leave the blot upon the lowest point you can, *e.g.*, ace point in preference to deuce point, and so on; because this crowds his game by taking out of it the men played on the low point.

When your adversary is bearing his men, and you have two men in his table, say on his ace point, and several men in the outer table, it is to your advantage to leave one man on the ace point, because it prevents his bearing his men to the greatest advantage, and gives you the chance of his leaving a blot. But if, on calculation, you find that you can probably save the gammon by bringing both your men out of his table, do not wait for a blot. To make this calculation, you must ascertain in how many throws you can bring all your men home (a throw averaging eight points), and in how many throws he can bear all his men, on the assumption that he will bear on the average two men at each throw.

The laws of backgammon (as given by Hoyle) are as follows:—

1. When a man is taken from any point, it must be played; when two men are taken from it, they also must be played.
2. A man is not supposed to be played till it is placed upon a point and quitted.
3. If a player have only fourteen men in play, there is no penalty inflicted, because by his playing with a lesser number than he is entitled to, he plays to a disadvantage for want of the deficient man to make up his tables.
4. If he bear any number of men before he has entered a man taken up, and which of course he was obliged to enter, such men so borne must be entered again in the adversary's tables as well as the man taken up.
5. If he have mistaken his throw and played it, and his adversary have thrown, it is not in the choice of either of the players to alter it, unless they both agree so to do.

*Russian Backgammon* or *Tric-Trac* is played with the same implements as backgammon. The men are not placed on the board, but both black and white are entered in the same table by throws of the dice, and both players move

in the same direction round to the opposite table. A player is not obliged to enter all his men before he moves any; and he can take up blots on entering, although he has some of his men, which have never been entered, off the board. But, while a player has a man up, he must enter it before entering any more, or moving any of those already entered. If he cannot enter the man that is up, he loses the benefit of the throw.

A player who throws doublets must move not only the number thrown, but also doublets of the number corresponding to the opposite side of the dice; thus, if he throws sixes, he must first enter or move the sixes, as the case may be, and then aces, and he also has another throw. If he throws doublets a second time, he moves according to the rule already given, and throws again, and so on. The privilege is sometimes restricted by not allowing this advantage to the first doublets thrown by each player. It is sometimes extended by allowing the thrower of deuce, ace, to choose any doublets he likes on the opposite sides of the dice, and to throw again. The restriction with regard to the first doublets thrown does not apply to deuce, ace, nor does throwing it remove the restriction with regard to first doublets.

A player must first be able to complete the doublets

## BACON, FRANCIS

**BACON, FRANCIS, BARON VERULAM, VISCOUNT ST ALBAN,** was born at York House in the Strand, London, on the 22d January 1561. He was the youngest son of Sir Nicholas Bacon, the celebrated lawyer and statesman, who for twenty years of Elizabeth's reign held the seals as lord keeper. His mother, the second wife of Sir Nicholas, was a daughter of Sir Anthony Cooke, formerly tutor to Edward VI. She was a woman of considerable culture, well skilled in the classical studies of the period, and a warm adherent of the Reformed or Puritan Church. One of her sisters was married to the famous Lord Treasurer Burghley. Very little is known of Bacon's early life and education. His health being then, as always, extremely delicate, he probably received much of his instruction at home. Yet, Rawley tells us, "his first and childish years were not without some mark of eminency; at which time he was endued with that pregnancy and towardness of wit, as they were presages of that deep and universal apprehension which was manifest in him afterwards, and caused him to be taken notice of by several persons of worth and place, and especially by the queen, who, as I have been informed, delighted much to confer with him and to prove him with questions; unto whom he delivered himself with that gravity and maturity above his years that her majesty would often term him, *The young lord keeper*." In April 1573 he was entered at Trinity College, Cambridge, where for three years he resided with his brother Anthony. Our information with regard to these important years is singularly scanty. We know only that Bacon at Cambridge, like Descartes at La Flèche, applied himself diligently to the several sciences as then taught, and came to the conclusion that the methods employed and the results attained were alike worthless and erroneous. Although he preserved a reverence for Aristotle (of whom, however, he seems to have known but little), he learned to despise the Aristotelian philosophy. It yielded no fruit, was serviceable only for disputation, and the end it proposed to itself was a mistaken one. Philosophy must be taught its true business, and to attain its new aim a new method must be devised. With the first germs of this great conception in his mind, Bacon left the university in 1576.

In the same year he and his brother Anthony were

thrown. If he cannot move the whole throw, he cannot take the corresponding doublets, and he is not allowed another throw if he cannot move all the points to which he is entitled. In other respects the game is similar to ordinary backgammon. The chief object in the game is for the player who has his men in advance to secure as many successive points as possible, so that his adversary may be unable to pass or hit the forward men. (H. J.)

**BACKHUYSEN, LUDOLF,** an eminent painter of the Dutch school, was born at Embden, in Hanover, in 1631, and died in 1709. He was brought up as a merchant at Amsterdam, but early discovered so strong a genius for painting that he relinquished business and devoted himself to art. He studied first under Everdingen and then under Dubbels, two eminent masters of the time, and soon became celebrated for his sea pieces. He was an ardent student of nature, and frequently exposed himself on the sea in an open boat in order to study the effects of tempests. His compositions, which are very numerous, are nearly all variations of one subject, and in a style peculiarly his own, marked by intense realism or faithful imitation of nature. In his later years Backhuysen employed his time in etching and calligraphy. Several of his best pieces are in the gallery of the Louvre.

entered *ae societate magistrorum* at Gray's Inn, and a few months later he was sent abroad with Sir Amyas Paulet, the English ambassador at Paris. He spent some time in that city, and travelled through several of the French provinces. The disturbed state of government and society in France at that time must have afforded him much valuable political instruction; and it has been commonly supposed that certain *Notes on the State of Christendom*, usually printed in his works, contain the results of his observations. But Mr Spedding has shown that there is no reason for ascribing these "Notes" to him, and that they may be attributed with more probability to one of his brother Anthony's correspondents.

The sudden death of his father in February 1579 necessitated Bacon's return to England, and exercised a very serious influence on his fortunes. A considerable sum of money had been laid up by Sir Nicholas in order to purchase an estate for his youngest son, the only one otherwise unprovided for. Owing to his sudden death, this intention was not carried out, and but a fifth part of the money descended to Francis, who thus began his career in comparative poverty. It was one of the gravest misfortunes of his life: he started with insufficient means, acquired a habit of borrowing, and was never afterwards out of debt. As it had become absolutely necessary that he should adopt some profession by which an adequate income would be yielded, he selected that of law, and took up his residence at Gray's Inn in 1579.

Nothing throws so clear a light on the career of any great man as a knowledge of his character and aims when he made the first step into the world. We learn from this how he himself desired to shape his course, and at every point can see how far his actions correspond to the end he had placed before him. We have, fortunately, information from Bacon himself on these points. In the fragment *De Interpretatione Naturæ Proœmium* (written probably about 1603) he analyses his own mental character, and lays before us the objects he had in view when he entered on public life. If his opening sentence, *Ego cum me ad utilitates humanas natum existimarem*, seems at first sight a little arrogant, it must be remembered that it is the arrogance of the *μεγαλόψυχος*, who thinks himself worthy

of great things, and is worthy; it is a great self-esteem, based upon a consciousness of great powers. This grand and comprehensive aim, the production of good to the human race through the discovery of truth, was combined in him with the more practical desire to be of service to his country, service for which he felt himself by birth and education eminently fitted. He purposed, therefore, to obtain, if possible, some honourable post in the state which would give him the means of realising, so far as in him lay, these two great projects, and would at the same time enable him to do somewhat for the church, the third of the objects whose good he had at heart. The constant striving after these three ends is the key to Bacon's life. His qualifications for accomplishing the task he thus set before him were not small. His intellect was far-seeing and acute, quick and yet cautious, meditative, methodical, and free from prejudice. If we add to this account what Bacon himself does not tell us—that he seems to have been of an unusually sweet temper and amiable disposition—we shall have a fairly complete picture of his mental character at the critical period of his entry into the world.

In 1580 he appears to have taken the first step in his projected career by applying, through his uncle, Burghley, for some post at court. His suit, though well received by the queen and the lord treasurer, was unsuccessful; the particulars of it are totally unknown. For two years after this disappointment he worked quietly at Gray's Inn, and in 1582 was admitted an outer barrister. In 1584 he took his seat in Parliament for Melcombe in Dorsetshire, but the notes for the session do not disclose what part he took or what reputation he gained. About the same time he made another application to Burghley, apparently with a view to expediting his progress at the bar. His uncle, who appears to have "taken his zeal for ambition," wrote him a severe letter, taking him to task for arrogance and pride, qualities which Bacon vehemently disclaimed. It is uncertain what success attended this suit; but as his advancement at the bar was unusually rapid, his uncle's influence may not improbably have been exerted in his behalf. Some years later, in 1589, he received the first substantial piece of patronage from his powerful kinsman, the reversion of the clerkship of the Star Chamber being granted to him. The office was valuable, worth about £1600 a year; but it did not become vacant for nearly twenty years, and was thus, as Bacon used to say, "like another man's ground buttailling upon his house, which might mend his prospect, but did not fill his barn." A considerable period of his life had thus slipped away, and his affairs had not prospered. He had written on the condition of parties in the church; he had set down his thoughts on philosophical reform in the lost tract, *Temporis Partus Maximus*; but he had failed in obtaining the position which he looked upon as an indispensable condition of success. A long and eloquent letter to Burghley,<sup>1</sup> written

<sup>1</sup> "I wax now somewhat ancient; one-and-thirty years is a great deal of sand in the hour-glass. . . . I ever bare a mind (in some middle place that I could discharge) to serve her majesty; not as a man born under Sol, that loveth honour; nor under Jupiter, that loveth business (for the contemplative planet carrieth me away wholly); but as a man born under an excellent sovereign, that deserveth the dedication of all men's abilities. . . . Again, the meanness of my estate doth somewhat move me; for though I cannot accuse myself that I am either prodigal or slothful, yet my health is not to spend, nor my course to get. Lastly, I confess that I have as vast contemplative ends as I have moderate civil ends: for I have taken all knowledge to be my province; and if I could purge it of two sorts of rovers, whereof the one with frivolous disputations, confutations, and verbiages, the other with blind experiments and auricular traditions and impostures, hath committed so many spoils, I hope I should bring in industrious observations, grounded conclusions, and profitable inventions and discoveries—the best state of that province. This, whether it be curiosity, or vain-glory, or nature, or (if one take it favourably) *philanthropia*, is so fixed in my mind as it cannot be

removed. And I do easily see, that place of any reasonable commandment doth bring commandment of more wits than of a man's own. . . . And if your lordship shall find now, or at any time, that I do seek or affect any place whereunto any that is nearer to your lordship shall be convenient, say then that I am a most dishonest man. And if your lordship will not carry me on, . . . this I will do, I will sell the inheritance that I have, and purchase some lease of quick revenue, or some office of gain that shall be executed by deputy, and so give over all care of service, and become some sorry bookmaker, or a true pioneer in that mine of truth."—(Spedding, *Letters and Life*, i. 108-9.)

<sup>2</sup> Spedding, *Letters and Life*, i. 234-35, cf. i. 362. This letter, with those to Puckering or Essex and the queen, i. 240-41, should be compared with what is said of them by Macaulay in his *Essay on Bacon*, and by Campbell, *Lives*, ii. 257.

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