

bills drawn or payable abroad. By 19 and 20 Vict. c. 97, § 7, bills or notes drawn on one part and payable in any other part of the British Isles are inland bills. Foreign bills are usually drawn in sets or parts, each containing a condition to be payable only so long as the others continue unpaid.

When a bill is accepted by the drawee without consideration, and merely in order that the drawer may be able to raise money upon it, it is called an *accommodation bill*. Both parties are liable to the holder; but, as between themselves, the drawer is the principal and the acceptor a sort of surety. When acceptance has been refused and the bill protested, a stranger may accept it "*supra protest*, in honour of the drawer or endorser." The effect of this is to render the acceptor liable if the drawer does not pay, and the party for whose honour it was made, and parties antecedent to him, become liable to the acceptor. Payment for the honour of one of the parties may likewise be made by a mere stranger when a bill has been protested for non-payment, who thereupon acquires a claim against such person and all those to whom he could have resorted.

The negotiability of promissory notes and bank cheques is for the most part regulated by the same principles as bills of exchange. A promissory note is a "promise in writing to pay a specified sum at a time therein limited, to a person therein named or his order or to bearer." Cheques which are inland bills of exchange drawn on a banker have become subject to certain peculiar usages. See EXCHANGE.

A BILL OF LADING is a document signed by the master of a general ship and delivered to the owners of goods conveyed therein. It is usually made out in several parts or copies, of which the shipper retains one and sends one or more to the consignee, while the master keeps one for his own guidance. The following is the usual form:—Shipped in good order and well conditioned by [A. B., merchant] in and upon the good ship called [The Good Intent], whereof [C. D.] is master for this present voyage, and now riding at anchor in the [Port of Southampton], and bound to [Cadiz in Spain, twenty cases of hardware and fifty bales of cotton goods], being marked and numbered as in the margin, and are to be delivered in the like good order and well conditioned at the aforesaid port [of Cadiz], the act of God, the Queen's enemies, fire, and all and every other dangers and accidents of the seas, rivers, and navigations of whatever kind or nature whatsoever excepted, unto [E. F., merchant], or to his assigns, he or they paying freight for the said goods [] per case; and [] per bale freight, with primage and average accustomed. In witness whereof, &c.

Every bill of lading requires a sixpenny stamp. By the mercantile law a bill of lading is a negotiable instrument, and the property in the goods may be transferred by endorsement. By 18 and 19 Vict. c. 111, every consigner of goods named on a bill of lading, and every endorser to whom the property of the goods mentioned therein passes by reason of the consignment or endorsement, shall have transferred to and invested in him all rights of suit, and be subject to the same liabilities in respect of the goods as if the contract contained in the bill of lading had been made with himself.

A BILL OF SALE is an assignment of personal property. It is frequently made by way of security, the property remaining in possession of the vendor. For the protection of creditors from secret or fraudulent sale, the Bills of Sale Act, 1854, and the Amendment Act, 29 and 30 Vict. c. 96, were passed. By these Acts a bill of sale of personal chattels made at any time by a defendant in an action will be void as against a plaintiff on whose behalf a writ of execution in such action shall be sued out and delivered, so far as

regards any personal chattels in defendant's possession at or after the time of executing such writ, unless such bill of sale shall be duly registered for public inspection in the Court of Queen's Bench within twenty-one days of its date. The registration must be renewed once in every five years during the subsistence of the security.

BILL IN CHANCERY. A suit in the Court of Chancery was generally commenced by a bill, addressed to the lord chancellor, containing a statement of the plaintiff's case, and praying for relief. By the Chancery Amendment Act, 1862, it is enacted that "every bill shall contain as concisely as may be, a narrative of the material facts, matters, and circumstances on which the plaintiff relies; such narrative being divided into paragraphs numbered consecutively, and each paragraph containing as nearly as may be a separate or distinct statement or allegation; and shall pray specifically for the relief which the plaintiff may conceive himself entitled to, and also for general relief." By the Judicature Act, 1873, a new form of procedure is established for all the superior courts. See ACTION. (E. R.)

BILLETING. The law as to billeting soldiers is regulated by the provisions of the Annual Mutiny Act (38 Vict. c. 7, §§ 63-67). Constables of parishes and places, police officers, high constables, and other chief officers and magistrates may billet officers and soldiers on actual service, with their horses and baggage, in victualling house, inn, hotel, livery stable, ale-house, or the house of any seller of wine by retail to be drunk in such house, or the houses of persons selling brandy, spirits, strong waters, cider, or metheglin by retail; but no officer or soldier shall be billeted in any private houses, or in any canteen under the authority of the War Department, nor on persons keeping taverns only being vintners of the city of London, nor on distillers, nor on shopkeepers whose principal dealing is more in other goods than in brandy and strong waters, so as such distillers and shopkeepers do not permit tipping in such houses. If the victualler has not sufficient accommodation in his own house he must find it in the immediate neighbourhood. The following sums are allowed as compensation:—For hot meal, to be supplied each day to soldiers on the march, 10d., with 2½d. for a bed; for other soldiers, entitled to bed, candles, use of fire and cooking utensils, 4d. per diem for each soldier; for ten pounds of oats, twelve of hay, and eight of straw, 1s. 9d. per diem. Military officers must not act as justices in billeting.

BILLIARDS is a well-known indoor game of skill, played on a rectangular table with ivory balls, which are driven into pockets and against each other according to certain defined rules. Of the origin of billiards comparatively little is known,—some considering that the game was invented by the French, and others that it was improved by them out of an ancient German diversion. Even the French themselves are doubtful on this point; for, while it is generally asserted that Henrique Devigne, an artist, who lived in the reign of Charles IX., gave form and rule to the pastime, the *Dictionnaire Universel* and the *Académie des Jeux* ascribe its invention to the English. Bouillet in the first work says—"Billiards appear to be derived from the game of bowls. It was anciently known in England, where, perhaps, it was invented. It was brought into France by Louis XIV., whose physician recommended this exercise." In the other work quoted we read—"It would seem that the game was invented in England." Strutt, a rather doubtful authority, notwithstanding the reputation attained by his *Sports and Pastimes of the People of England*, considers it probable that it was the ancient game of Paille-maille on a table instead of on the ground or floor,—an improvement, he says, "which answered two good purposes: it precluded the necessity of

the player to kneel or stoop exceedingly when he struck the bowl, and accommodated the game to the limits of a chamber." Whatever its origin, and whatever the manner in which it was originally played, it is certain that it was common in the time of Shakespeare, who makes Cleopatra, in the absence of Antony, invite her attendant to join in the pastime—

"Let us to billiards:
Come, Charmian."—*Ant. and Cleo.* Act. ii. sc. 5.

Billiards was originally played, it seems, in a method even now adopted in the rustic game of Rural Billiards, by driving a ball through a ring which revolved on a pin or stick fixed to the table or floor. In Cotton's *Complete Gamester*, published in 1674, we are told that this "most gentle, cleanly, and ingenious game" was first played in Italy, though in another page he mentions Spain as its birthplace. At that date billiards must have been well enough known, for we are told that "for the excellency of the recreation, it is much approved of and played by most nations of Europe, especially in England, there being few towns of note therein which hath not a public billiard table, neither are they wanting in many noble and private families in the country." Since Cotton every compiler of books on games has had more or less to say about billiards; though, curiously enough, Hoyle, who is often quoted as an authority, makes no mention whatever of the game. It is only in the later editions and continuations of Hoyle that billiards, bagatelle, cricket, &c., find place. It is not, indeed, till our own day that anything like a scientific treatise on billiards has appeared, or that the game itself has been lifted out of the tavern—whence, in spite of its historians' praises, it gradually descended—to its present more favoured position as a harmless and amusing indoor game.

The Table.—The shape of the table has varied from time to time, probably to suit the dimensions of the room in which it was placed. At first it was square, with a hole or pocket at each corner to receive the balls driven forward with a cue or mace; then it was lengthened and provided with two other pockets; and occasionally it has been made round, oval, triangular, or octagonal, with or without pockets according to the game required. The cannon game in France is played on a pocketless table 8 feet by 4; the same game of the United States is played on a table 10 feet by 6, commonly made without pockets; but in England the regular table of the clubs and public rooms is a massive structure of timber, with a bed or surface of slate or metal 12 feet long by 6 feet wide, or two equal squares of 5 feet 10½ inches across within the cushions. It is covered by a fine green cloth, and surrounded by elastic india-rubber cushions, at the junctions of which are netted pockets—one at each corner, and one midway at each of the longer sides. The table must be perfectly level and sufficiently firm to prevent vibration; and its usual height from the floor to the surface is 3 feet. The space required between table and wall is at least four feet. Smaller tables for use in private houses have lately been introduced. Whether large or small, each table is provided with a baulk line and semicircle and several marks or spots to regulate the mode of play. The baulk line is drawn straight across the table 28 inches from the bottom or lower cushion, and from it is struck a semicircle of from 21 to 23 inches in diameter. In the middle of the baulk line is the baulk spot, and in the middle of the table the centre spot. Thirteen inches from the top cushion is the red-ball spot, and half-way between the centre and the top cushion is the pyramid spot,—all these spots being on a line which, if drawn from end to end, would divide the table into two oblong halves.

Games.—The principal games are three in number,—

billiards proper, pyramids, and pool; and from these spring a variety of others. The object of the player in each game, however, is to drive one or other of the balls into one or other of the pockets, or to cause the striker's ball to come into successive contact with two other balls. The one stroke is known as a hazard, the other as a cannon; and from hazards and cannons, together with misses, forfeitures, and foul strokes, are reckoned the points of the game. When the ball is forced into a pocket the stroke is called a winning hazard; when the striker's ball falls into a pocket after contact with the object ball, the stroke is a losing hazard; and these hazards count two or three to the player's score according as they are made from the white or the red ball—two points for the white, three for the red. Two points are scored for the cannon, three for a *coup*—a term used when the player's ball runs into a pocket without striking a ball; and one point for a miss, whether given purposely or accidentally. These strokes are all made with a cue, which is a long stick of ash, or other hard wood, gradually tapering to the end, which is tipped with leather and rubbed with chalk to prevent it slipping off the surface of the ball struck. The mace or hammer-headed cue, once common, is no longer used, even by ladies. The cue is taken in the right hand, generally between the fingers and thumb, and not grasped in the palm; and with the left hand the player makes a bridge, by resting the wrist and the tips of the fingers on the table, arching the latter, and extending the thumb in such a way as to allow a passage in which the cue may slide. The player then proceeds with his game, according to the following rules:—

Billiards proper, or the English game, consists of winning and losing hazards, cannons, and forfeitures. It is usually played 50 or 100 points, reckoned as already explained, three for each red hazard, two for each white hazard, and two for each cannon. Public matches between adepts are played 100, 500, or 1000 up, but the rules which govern them are the same. The remarks within brackets are explanatory.—1. The game of billiards proper commences by stringing for the lead and choice of balls. [The players standing behind the baulk line, strike each a ball from the semicircle up to the top cushion, and he whose ball on its return stops nearest the bottom cushion has the choice of lead and balls.] 2. The red ball is placed on the spot at the commencement of the game, and replaced when it is pocketed or forced over the table. ["Breaking the balls" is the replacing them as at the beginning of a game. The balls are said to be "broken" when the first player has struck the red or given a miss; and the player's ball when off the table is said to be "in hand."] 3. The player who makes one stroke in a game must finish that game or consent to lose it. [Intended to meet cases of dispute.] 4. In the case of foul strokes, the adversary has the option of either allowing the striker to proceed, or having the ball replaced, or of breaking the balls. No score can be reckoned for a foul stroke. [The following are foul strokes:—If the player move a ball in the act of striking; if he play with the wrong ball; if he touch a ball twice in making a stroke; if he play at a ball while it is running; if he touch a ball with his hand, cue, or person, otherwise than is necessary for the stroke; if he in any way touch his opponent's ball.] 5. If the adversary neglect to observe or to claim a foul stroke, the player proceeds with his game, and all the points he makes are marked. 6. If a ball spring from the table and hit a bystander, so as to prevent it falling to the floor, it is considered off the table. [The penalty in such a case is that the other player goes on, or if the ball has not struck another ball before flying off the table, the loss of three points, as for a *coup*.] 7. Balls lying within the baulk line cannot be played at with a ball in hand, except the player whose ball is in hand first play at a cushion beyond or outside the baulk line. 8. A line-ball cannot be played at by the striker whose ball is in hand, other than by playing his ball out of baulk against a cushion. [A line-ball is when the centre of the ball's surface lies exactly on the line across the table. The marker or umpire must decide as to whether such ball is within or without the line.] 9. A ball in hand striking a ball in baulk without having been first played out of baulk, must be replaced and played over again. 10. All misses must be given with the point of the cue. [This rule is sometimes neglected, and the player allowed to give his miss with the butt end of his cue.] 11. Should the spot be occupied so that the red ball cannot be placed on it after being pocketed, it must be placed on the centre spot, or, if that also be occupied, on the pyramid spot. [In some clubs the custom is to place the red ball on the centre spot, or on the baulk line spot, ac-

according to agreement.] 12. No points are reckoned for a ball or balls forced off the table after contact with the object-ball, and the adversary goes on without breaking the balls. 13. If the balls be changed in the course of play, no cannon or hazard made with such changed ball can be scored; the balls must be broken, and all points made with the wrong ball deducted from the striker's score. [In such case, however, the adversary has the privilege of playing with the changed ball, of re-changing the balls and playing on from their respective positions, or of having the balls broken.] 14. The player whose ball is in hand cannot score, unless he play his ball out of baulk before striking the object-ball. [In such case the stroke must be re-made.] 15. If in drawing back his cue from a ball on the brink of a pocket the striker hole his ball, he loses three points, as for a coup. 16. A ball accidentally moved by the marker or a looker-on must be replaced. 17. A ball wfully removed or obstructed in its course causes the loss of the offender's game. 18. If the striker's ball lie touching his opponent's ball, or the red ball, no score on that side can follow. [After the stroke the next player proceeds with his game, either by breaking the balls, or playing from the spot where his ball stopped. When balls touch, the player may either run into a pocket, or play on to a third ball; then the red is spotted and the adversary plays on from baulk; or if the first player fail to do either, the balls remain as they fall, and the other goes on.]

These, with the exception of some remarks about the conduct of strangers, the payment of wagers, and so on, are the rules by which the English game of billiards is universally governed. The principal modifications of this game are the four-handed game, which is ordinary billiards by four players in sides of two, each player being allowed to instruct his partner; à la royale, or the game of three; the white winning game, consisting entirely of winning hazards; the white losing game; the red winning game; the red losing game; the cannon game; and the American game. This last is played with four balls, two white and two coloured, and consists entirely of winning hazards and cannons. There is also a Russian game, called carline or caroline, not unlike American billiards; a German game, *Wurst-partie*, in which a certain number of balls are placed in a row across the table; the Spanish, or skittle game, which the Germans call *Kugel-partie*; and French billiards or the cannon game formerly universal on the Continent, and now very popular in the United States, where the best players are Frenchmen or men of French extraction. Of these games, however, it is unnecessary to speak, as they are all much inferior to billiards, and can be easily played by any one familiar with the established English game. The lesser varieties of billiards—choice of balls, in which each player selects the ball he plays with; bricole, in which the player strikes his ball against a cushion and endeavours to reach his opponent's ball from the rebound; bar-hole, so called from a pocket or pockets being barred or stopped for one of the players; one pocket to five; winning against losing; the nomination game, which is ordinary billiards, in which the player is obliged to name his stroke before attempting it, and failing to make it gains nothing, or gives unnamed cannons and hazards to his opponent; the commanding game; the go-back game, which is played by an adept against a tyro, the latter scoring all he makes and the former going back to nothing every time his adversary makes a winning or losing hazard;—all these are so barren of interest and so seldom played as barely to deserve mention.

As to the science of the game, there is really little to be taught in books; practice and instruction from an adept will better enlighten a tyro as to the mysteries of the side-stroke, the drag, the screw, the following ball, the spot-stroke, &c., than any amount of verbal explanation. It may, however, be as well to refer briefly to these several points, in order to render this notice as complete as the space at command will admit.

The *side-stroke* is made by striking the object-ball on the side with the point of the cue. The effect of such a mode of striking the ball is to make it travel to the right or to the left, according as it is struck with a winding or slightly circular motion; and its pur-

pose is to cause the ball to proceed in a direction more or less slanting than is usual, or ordinary, when the ball is struck in or about the centre of its circumference. Many hazards and cannons, quite impossible to be made with the central stroke, are accomplished with ease and certainty by the side-stroke. In the hands of a dexterous player this stroke is both elegant and effective. The *screw*, or twist, is made by striking the ball low down, with a sharp, sudden blow. According as the ball is struck nearer and nearer to the cushion, it stops dead at the point of concussion with the object-ball, or recoils by a series of reverse revolutions, in the manner familiar to the schoolboy in throwing forward a hoop, and causing it to return to his hand by the twist given to its first impetus. The *following-ball* is made by striking the ball high, with a flowing or following motion of the cue. Just as the low-stroke impedes the motion of the ball, the follow expedites it. In the *drag* the ball is struck low without the sudden jerk of the screw, and with less than the onward push of the follow. The *spot-stroke* is a winning hazard made by pocketing the red ball in one of the corners from the spot. The great art is, first, to make sure of the hazard, and next, to leave the striking ball in such a position as to enable the player to make a similar stroke in one or other of the corner pockets. To such perfection has the spot-stroke been brought, that the winning hazard has been repeated more than two hundred and fifty times consecutively. W. Cook, the finest of English players, on November 29, 1873, in a game with the ex-champion, Joseph Bennett, made a break of 936, the longest on record. In this great performance Cook made, in all, no fewer than 292 spot-hazards, 260 of which were made consecutively. John Roberts, jun., of Manchester, has also made an extraordinary break, 800, the majority by the spot-stroke. Without the spot-hazard, the longest break hitherto made is probably less than 200.

The perfection of billiards is to be found in the nice combination of the various strokes, in such fashion as to leave the balls in a favourable position after each individual hazard and cannon; and this perfection can only be attained by the most constant and unremitting practice.

Pyramids is played by two or four persons—in the latter case in sides, two and two. It is played with fifteen balls, placed close together in the form of a triangle or pyramid, with the apex towards the player, and a white striking ball. The centre of the apex ball covers the second or pyramid spot, and the balls forming the pyramid should lie in a compact mass, the base in a straight line with the cushion.

Pyramids is a game entirely of winning hazards, and he who succeeds in pocketing the greatest number of balls wins. Usually the pyramid is made of fifteen red or coloured balls, with the striking ball white. This white ball is common to both players. Having decided on the lead, the first player, placing his ball in the baulk-semicircle, strikes it up to the pyramid, with a view either to lodge a ball in a pocket or to get the white safely back into baulk. Should he fail to pocket a red ball, the other player goes on and strikes the white ball from the place at which it stopped. When either succeeds in making a winning hazard, he plays at any other ball he chooses, and continues his break till he ceases to score; and so the game is continued by alternate breaks until the last red ball is pocketed. The game is commonly played for a stake upon the whole, and a proportionate sum upon each ball or life,—as, for instance, 3s. game and 1s. balls. The player wins a life by pocketing a red ball or forcing it over the table; and loses a life by running his own, the white, ball into a pocket, missing the red ball, or intentionally giving a miss. In this game the baulk is no protection; that is to say, the player can pocket any ball wherever it lies, either within or without the baulk line, and whether the white be in hand or not. This liberty is a great and certain advantage under many circumstances, especially in the hands of a good player. It is not a very uncommon occurrence for an adept to pocket six or eight balls in a single break. Both Cook and Roberts have been known, indeed, to pocket the whole fifteen. If four persons play at pyramids, the rotation is decided by chance, and each plays alternately,—partners, as in billiards, being allowed to advise each other, each going on and continuing to play as long as he can, and ceasing when he misses a hazard. Foul strokes are reckoned as in billiards, except as regards balls touching each other. If two balls touch, the player proceeds with his game and scores a point for every winning hazard. When all the red balls but one are pocketed, he who made the last hazard plays with the white and his opponent with the red; and so on alternately, till the game terminates by the holeing of one or other ball. The pyramid balls are usually a little smaller than the billiard balls; the former are about 2 inches in diameter, the latter 2½ inches.

Losing Pyramids, seldom played, is the reverse of the last-named game, and consists of losing hazards, each player using the same striking ball, and taking a ball from the pyramid for every losing

hazard. As in the other game, the baulk is no protection. Another variety of pyramids is known as *Shell-out*, a game at which any number of persons may play. The pyramid is formed as before, and the company play in rotation. For each winning hazard the striker receives from each player a small stake, and for each losing hazard he pays a like sum, till the game is concluded by pocketing the white or the last coloured ball.

Pool, a game which may be played by two or more persons, consists entirely of winning hazards. Each player subscribes a certain stake to form the pool, and at starting has three chances or lives. He is then provided with a coloured or numbered ball, and the game commences thus:—The white ball is placed on the spot and the red is played at it from the baulk semicircle. If the player pocket the white he receives the price of a life from the owner of the white; but if he fail, the next player, the yellow, plays on the red; and so on alternately till all have played, or till a ball be pocketed. When a ball is pocketed the striker plays on the ball nearest his own, and goes on playing as long as he can score.

The order of play is usually as follows:—The white ball is spotted; red plays upon white; yellow upon red; then blue, brown, green, black, and spot-white follow in the order of succession named, white playing on spot-white. The order is similar for a larger number, but it is not common for more than seven or eight to join in a pool. The player *wins* a life for every ball pocketed, and receives the sum agreed on for each life from the owner of that ball. He *loses* a life to the owner of the ball he plays on and misses; or by making a losing hazard after striking such ball; by playing at the wrong ball; by running a coup; or by forcing his ball over the table. Rules governing the game provide for many other incidents. A ball in baulk may be played at by the striker whose ball is in his hand. If the striker's ball be angled—that is, so placed in the jaws of the pocket as not to allow him to strike the previously-played ball—he may have all the balls except his own and the object ball removed from the table to allow him to try bricole from the cushion. In some clubs and public rooms an angled ball is allowed to be moved an inch or two from the corner; but with a ball so removed the player must not take a life. When the striker loses a life, the next in rotation plays at the ball nearest his own; but if the player's ball happen to be in hand, he plays at the ball nearest to the centre spot on the baulk line, whether it be in or out of baulk. In such a case the striker can play from any part of the semicircle. Any ball lying in the way of the striker's ball, and preventing him from taking fair aim and reaching the object-ball, must be removed, and replaced after the stroke. If there be any doubt as to the nearest ball, the distance must be measured by the marker or umpire; and if the distance be equal, the ball to be played upon must be decided by chance. If the striker first pocket the ball he plays on and then runs his own into a pocket, he loses a life to the player whose ball he pocketed, which ball is then to be considered in hand. The first player who loses all his three lives can "star;" that is, by paying into the pool a sum equal to his original stake, he is entitled to as many lives as the lowest number on the marking board. Thus if the lowest number be two, he stars two; if one, he stars one. Only one star is allowed in a pool; and when there are only two players left in, no star can be purchased. The price of each life must be paid by the player losing it, immediately after the stroke is made; and the stake or pool is finally won by the player who remains longest in the game. In the event, however, of the two players last left in the pool having an equal number of lives, they may either play for the whole or divide the stake. The latter, the usual course, is followed except when the combatants agree to play out the game. When three players are left, each with one life, and the striker makes a miss, the two remaining divide the pool without a stroke—this rule being intended to meet the possible case of two players combining to take advantage of a third. When the striker has to play, he may ask which ball he has to play at, and if being wrongly informed he play at the wrong ball, he does not lose a life. In clubs and public rooms it is usual for the marker to call the order and rotation of play: "Red upon white, and yellow's your player;" and when a ball has been pocketed, the fact is notified—"Brown upon blue, and green's your player, in hand;" and so on till there are only two or three players left in the pool.

There are some varieties of the game which need brief mention. *Single Pool* is the white winning hazard game, played for a stake and so much for each of three or more lives. Each person has a ball, usually white and spot-white. The white is spotted, and the other plays on it from the baulk semicircle; and then each plays alternately, spotting his ball after making a hazard. For each winning hazard the striker receives a life; for each losing hazard he pays a life; and the taker of the three lives wins the game. No star is allowed in single pool. The rules regulating pool are observed.

Nearest Ball Pool is played by any number of persons with the ordinary coloured balls, and in the same order of succession. All the rules of pool are followed, except that the baulk is a protection. The white is spotted, and the red plays on it; after that each striker plays upon the ball nearest the upper or outer side of the baulk line; but if all the balls lie within the baulk line, and the striker's ball be in hand, he must play up to the top cushion, or place his ball on the spot. If his ball be not in hand, he plays at the nearest ball, wherever it may lie.

Black or Everlasting Pool is played by any number of persons in the ordinary way, except that the game is for lives only, without a subscribed stake. After the coloured balls are distributed a black ball is placed on the centre spot. At this the first striker plays. Any player, having pocketed a coloured ball, may play at the black; and if he succeed in holing it, he receives not only the life he took from the coloured ball, but the value of a life from each player. On the contrary, if he make a losing hazard off the black ball, miss it, or force his own ball off the table, he pays a life to each player. No ball can be removed to allow the striker to play on the black, but the latter may be removed to allow the striker to play at the proper object-ball. Any person may join the pool at any time, but cannot play in that round; and he may, on giving notice of his intention, retire at the end of a clear round, until which time his ball remains on the table, and stands its chance with the rest. The price per life is determined, as in the other pool games, previously to commencing; and it is usual for the marker or leader of the game to notify the conclusion of each clear round.

Skittle Pool is played by any number of persons with three balls, a red and two white, and twelve skittles—ten of which are white, and two black. The skittles and balls are arranged, according to a set design, on the table, and the game is played for small stakes determined by the number of skittles knocked over, after striking at a ball. It is an amusing, but unscientific game, encumbered with rules which cannot be understood without a diagram.

Penny Pot is the last of the pool games needing notice. It is played as ordinary pool, with the same order of rotation, by any number of players. Instead, however, of subscribing for a pool, and confining each player to three lives, there is no subscribed stake, and the players play on as long as they like, a penny being paid by the owner to the taker of each life; winning hazards receiving, and losing hazards, misses, and coups paying; each player proceeding in turn as in regular pool.

Much might be written on the scientific principles of the side-stroke, the angles of incidence and reflection, &c.; but the theories advanced on these topics would lead us farther into the region of mathematics than is necessary for a description of the several games played on the billiard table. The scientific features of billiards are discussed at more or less length in several of the following works:—*Practical Treatise on the Game of Billiards*, by E. White, 1807 (this was partly a translation of a French treatise, published in 1805, and partly a compilation from the article in the *Académie Universelle des Jeux*, issued in the same year, and since frequently re-edited and reprinted); *Le Musée des Jeux*, Paris, 1820; *The Noble Game of Billiards*, by Monsieur Mingaud, Paris, 1834; a translation of the same, by John Thurston, London, 1835; *Kentfield on Billiards*, London, 1839, founded principally on the foregoing works; *Billiards, Game 500 up*, by Edward Russell Mardon, London, 1849; *Turner on Billiards*, a series of diagrams with instructions, Nottingham, 1849; *The Billiard Book*, by Captain Crawley, London, 1866-75; *Roberts on Billiards*, 1868; *Practical Billiards*, by Fred. Harly, edited by W. Dufton, 1867; *Billiards*, by Joseph Bennett, ex-champion, 1873. There are besides numerous handbooks of more or less value. (G. F. P.)

BILLITON, or **BLITONG**, an island of the East Indies, belonging to the Dutch, situated between Sumatra and Borneo, in lat. 3° S. and long. 108° E. It is of a circular form, about 50 miles in length by 45 in breadth; and has an area, according to Melvill van Carnabé, of 2500 square miles. The weather is subject to rapid changes; but the usual temperature varies from 80° to 87° Fahr. The nights are very cool. The surface in the north is hilly,—Tadjem, the highest peak, being 3280 feet in height. The sea-coast is inaccessible and surrounded with rocks, and the best harbour is still that at the chief town of Tandjong Padan. The navigation between the island and Borneo is very dangerous. Horses, buffaloes, cattle, sheep and goats, ducks, geese, fowls, and pigeons are the domestic animals of Billiton; and among its wild animals are deer, goats, jackals, monkeys, civet-cats, tiger-cats, and porcupines. The seas furnish a superabundance of fish. On the rocks along the coast are found tortoises, trepang, and edible birds'-nests, which are articles of export. The forests supply wood of

different kinds for shipbuilding, in which the inhabitants are very expert. There are important mines both of iron and tin the former being used in the island and the latter exported to the Netherlands. The quantity of tin obtained in 1871 was 49,850 picols, or 60,532 cwts. The chief imports are rice, cotton goods, pottery, and cocoa-nuts. The population in 1871 amounted to 19,837, of whom only 59 were Europeans. The natives are of middle height and strongly built, and have expressive features. The island was formerly under the sultan of Palembang, by whom it was ceded to the English in 1812. As no mention was made of it in the treaty between the English and Dutch in 1814, the former at first refused to renounce their possession, and only recognized the Dutch claim in 1824. Till 1852 it was dependent on Banka, but at that date was raised to a sub-residency.

See *Tijdschrift v. Nederl. Indië*, vols. xii. and xv.; *Court's Relations of Brit. Gov. with the State of Palembang*, 1821; Crookewit, *Banka, Malakka, en Billiton*, 1852; Veth, *Woordenboek van Nederl. Indië*, 1869.

BILMA, or **KAWAR**, a town in the heart of the African desert, and the capital of the wandering tribe called the Tibboos. The place is mean and poor, surrounded with a mud wall. In its vicinity are a number of lakes, the waters of which, on évaporation by the heat of the sun, yield a quantity of very pure and fine salt, which is the object of an extensive and important trade with the countries in Central Africa. The largest of these lakes is at Agram, situated about four miles to the westward. Near Bilma is a small circular spot, kept green by a fine spring, but immediately to the south begins the most dreary part of the African desert, over which the caravans travel for fifteen days without discovering the slightest trace of vegetable life. During Nachtigal's visit in 1870 the temperature during the day rarely sank below 113° Fahr.

BILSA, a town of Hindustán, in the territory of Gwálor or the possessions of Sindhiá, situated on the Betwá River in lat. 23° 30' N. and long. 77° 50' E. It is enclosed with a stone wall, and defended by square towers and a ditch. The suburbs without the walls are not very extensive, but the streets are spacious, and contain some good houses. The town and the surrounding country are celebrated all over India for the excellent quality of the tobacco, which is bought up with great eagerness and exported. Population about 3000. Distance south from Gwálor, 190 miles.

BILSTON, formerly **BILSRETON**, a market-town of England, in the county of Stafford, 2½ miles S.E. of Wolverhampton, indebted for its importance to the iron trade, which it carries on in various departments. In the vicinity are very productive mines of coal and ironstone, as well as sand of the finest quality for casting, and grinding-stones for cutlers. Bilston contains numerous furnaces, forges, rolling and slitting mills for the preparation of iron, and a great variety of factories for japanned and painted goods, brass-work, bells, and similar articles. The town itself is very irregularly built; but it has some handsome buildings, as St Leonard's and St Mary's chapels, and the Roman Catholic chapel. The population of township, which is under an improvements commission, and forms part of the parliamentary borough of Wolverhampton, was, in 1871, 24,188.

BINGEN, the ancient *Bingium*, a town of the grand-duchy of Hesse-Darmstadt, in the province of Rhenish Hesse, 15 miles W. of Mentz. It is situated almost opposite Rüdeseheim, on the left bank of the Rhine, at the confluence of the Nahe (or *Nava*), which is crossed near its mouth by an iron railway bridge resting on old Roman foundations. A considerable trade is carried on in wine, grain, and cattle; and tobacco, starch, and leather are manufactured. A short way down the Rhine is the

Bingerloch, a famous whirlpool, the dangers of which were almost removed by blastings undertaken by the Prussian Government in 1834; while about half-way between it and the town rises on a rock, in the middle of the stream, the tower of Bishop Hatto. On a height immediately to the south-east is the ruined castle of Klopp, originally founded by Drusus, and higher still on the Rochsberg the celebrated chapel of St Roch. Population in 1871, 5938.

BINGHAM, **JOSEPH**, a learned scholar and divine, was born at Wakefield in Yorkshire, in September 1668. He was educated at University College, Oxford, of which he was made fellow in 1689, and college tutor in 1691. A sermon preached by him from the university pulpit, St Mary's, on the meaning of the word "Person" in the Fathers, brought upon him a most unjust accusation of heresy. He was compelled to give up his fellowship and leave the university; but he was immediately presented by Dr John Radcliffe to the rectory of Headbournworthy, near Winchester. In this country retirement he began his laborious and valuable work entitled *Origines Ecclesiasticæ*, or *Antiquities of the Christian Church*, the first volume of which appeared in 1708 and the tenth in 1722. Notwithstanding his learning and merit, Bingham received no higher preferment than that of Headbournworthy till the year 1712, when he was collated to the rectory of Havant, near Portsmouth, by Sir Jonathan Trelawney, bishop of Winchester. Nearly all his little property was lost in the great South Sea bubble of 1720. He died August 17, 1723.

BINGLEY, a thriving market-town in the West Riding of Yorkshire, on the River Aire, 5½ miles from Bradford, on the Midland Railway. The inhabitants are principally engaged in manufactures of worsted, cotton, paper, and iron. The town is well built, and has a neat church, a grammar school, and several charities. The population of the Local Board District, which includes a part of Micklethwaite, was 9062 in 1871.

BINNEY, **THOMAS**, an English Nonconformist divine, was born at Newcastle-on-Tyne in 1798, and died February 24, 1874. After spending seven years in the employment of a bookseller he entered the theological college of Wymondley, Herts, with the view of studying for the ministry. His first pastoral charge was that of the Congregational church at Newport, Isle of Wight, to which he was inducted in 1824. Five years later—in 1829—he accepted a call to the historic Weigh House chapel, London. Here he at once established what proved to be a lasting popularity, and it was found necessary to build a much larger place of worship on Fish Street Hill, to which the congregation removed in 1834. An address delivered on the occasion of the laying of the foundation stone of the new building was afterwards published, with an appendix containing a strongly worded opinion as to the baneful influence of the Church of England, which naturally gave rise to much angry comment and a prolonged and bitter controversy. Throughout his whole career Binney was a vigorous and intelligent opponent of the state church principle, but those who inferred from one, perhaps unguarded, statement that he was a narrow-minded political dissenter did him injustice. His liberality of view and breadth of ecclesiastical sympathy entitle him to rank on questions of Nonconformity among the most distinguished of the school of Richard Baxter. Accordingly, in his later years he was not only recognized by general consent as the foremost name among all sections of English Nonconformists, but maintained friendly relations with many of the leading dignitaries of the Established Church. He continued in the active discharge of the duties of the ministry, though latterly with the help of a colleague, until 1871, when he resigned. In 1845 he paid a visit to Canada and the United States, and in 1857 he set out on a tour to the Australian

colonies, which extended over a period of two years. Though he not infrequently fell markedly below his own standard of excellence, Binney exercised an influence as a preacher, especially with young men, such as few have wielded for so long a period. A manly, vigorous intellect, fearless independence of judgment, a lively imagination, showing itself chiefly in frequent flashes of happy illustration, a keen, sarcastic humour chastened but of deliberate purpose not altogether repressed, a direct forcible style, a commanding presence, and a pleasant musical voice sufficiently account for his popularity. He was the pioneer in a much needed improvement of the forms of service in Nonconformist churches, and gave a special impulse to congregational psalmody by the publication of a book entitled *The Service of Song in the House of the Lord*. Of numerous other works the best known is his *Is it Possible to Make the Best of Both Worlds?* an expansion of a lecture delivered to young men in Exeter Hall, which attained a circulation of 30,000 copies within a year of its publication. A very happy specimen of his peculiar powers as an author is his *Money, a Popular Exposition in Rough Notes* (1864), which also had a large circulation.

BINTANG, one of the islands which mark the south side of the Strait of Singapore. The latter is the exit towards China and Siam of the great channel which we call the Straits of Malacca. Bintang lies between 104° 13'

and 104° 40' E. long., with a central latitude of 0° 52' N. It has an area of about 440 square miles, and is surrounded by many rocks and small islands, making navigation dangerous. The soil is not fertile, and much of it is swampy. The chief product is *gambir*, of which upwards of 4000 tons are annually exported, with pepper and some other spices and fruits. The island is a good deal visited by Malay and Chinese traders. The highest hill in it is 1385 feet high, and there are five rivers, but these navigable only by small boats.

Bintang is mentioned by Marco Polo under the name of *Pentam*, which is not far from the genuine Malay name *Bentán*, said to mean a half-moon, and to apply properly to the mountain just mentioned. The name appears on a mediæval Javanese inscription, as that of one of the numerous kingdoms conquered by the sovereigns reigning at Majapahit, in Java.

After the Portuguese conquest of Malacca (1511), the expelled Mahometan dynasty took up its residence on Bintang, where it long cherished pirates. The island still belongs nominally to the representative of these kings of Malacca, whom we usually style the sultan of Johór, the Dutch sultan of Linggen. Supremacy is, however, claimed and exercised by the Dutch, whose port of *Rhoio* or *Riouu*, founded as a rival to Singapore, stands on a small island off the western coast of Bintang.

Bintang, regarded as the residence of the expelled sultans of Malacca, is the Bintão whereof Camoens speaks as the persistent foe of Portuguese Malacca—

"No reino de Bintão, que tantos danos
Terá a Malaca muito tempo feitos."

B I O L O G Y

THE Biological sciences are those which deal with the phenomena manifested by living matter; and though it is customary and convenient to group apart such of these phenomena as are termed mental, and such of them as are exhibited by men in society, under the heads of Psychology and Sociology, yet it must be allowed that no natural boundary separates the subject matter of the latter sciences from that of Biology. Psychology is inseparably linked with Physiology; and the phases of social life exhibited by animals other than man, which sometimes curiously foreshadow human policy, fall strictly within the province of the biologist.

On the other hand, the biological sciences are sharply marked off from the abiological, or those which treat of the phenomena manifested by not-living matter, in so far as the properties of living matter distinguish it absolutely from all other kinds of things, and as the present state of knowledge furnishes us with no link between the living and the not-living.

These distinctive properties of living matter are—

1. Its *chemical composition*—containing, as it invariably does, one or more forms of a complex compound of carbon, hydrogen, oxygen, and nitrogen, the so-called protein (which has never yet been obtained except as a product of living bodies) united with a large proportion of water, and forming the chief constituent of a substance which, in its primary unmodified state, is known as *protoplasm*.

2. Its *universal disintegration and waste by oxidation*; and its concomitant *reintegration by the intus-susception of new matter*.

A process of waste resulting from the decomposition of the molecules of the protoplasm, in virtue of which they break up into more highly oxidated products, which cease to form any part of the living body, is a constant concomitant of life. There is reason to believe that carbonic acid is always one of these waste products, while the others contain the remainder of the carbon, the nitrogen, the hydrogen, and the other elements which may enter into the composition of the protoplasm.

The new matter taken in to make good this constant

loss is either a ready-formed protoplasmic material, supplied by some other living being, or it consists of the elements of protoplasm, united together in simpler combinations, which consequently have to be built up into protoplasm by the agency of the living matter itself. In either case, the addition of molecules to those which already existed takes place, not at the surface of the living mass, but by interposition between the existing molecules of the latter. If the processes of disintegration and of reconstruction which characterize life balance one another, the size of the mass of living matter remains stationary, while, if the reconstructive process is the more rapid, the living body grows. But the increase of size which constitutes growth is the result of a process of molecular intus-susception, and therefore differs altogether from the process of growth by accretion, which may be observed in crystals and is effected purely by the external addition of new matter—so that, in the well-known aphorism of Linnæus, the word "grow," as applied to stones, signifies a totally different process from what is called "growth" in plants and animals.

3. Its *tendency to undergo cyclical changes*.

In the ordinary course of nature, all living matter proceeds from pre-existing living matter, a portion of the latter being detached and acquiring an independent existence. The new form takes on the characters of that from which it arose; exhibits the same power of propagating itself by means of an offshoot; and, sooner or later, like its predecessor, ceases to live, and is resolved into more highly oxidated compounds of its elements.

Thus an individual living body is not only constantly changing its substance, but its size and form are undergoing continual modifications, the end of which is the death and decay of that individual; the continuation of the kind being secured by the detachment of portions which tend to run through the same cycle of forms as the parent. No forms of matter which are either not living, or have not been derived from living matter, exhibit these three properties, nor any approach to the remarkable phenomena defined under the second and third heads. But in addition to these distinctive characters, living matter has some