Modern Bows and Arrows for Sport.

The increasing popularity of archery as a summer pastime has brougbt the bow and arrow once more into common use and made their manufacture an industry of considerable importance. In a long review of the development of archery clubs and the modes of shooting practiced in and about this city, the *Sun* furnishes the following information touching the construction and cost of materials used:

The best bow is one made of yew. Some yew bows that are very costly look crooked to the eye. The skillful archer, however, explains that they are quite straight. It is true that a bow may bend in and out in little irregular curves, but it is called straight all the same, because the artist who made it has allowed the grain of the yew to take its own course around knots, and has not weakened the bow by attempting to smooth it down. These strips of yew wood, from five to six feet long, and properly tipped with horn, may be worth $100 apiece, and they cannot be bought for less than $20 apiece. It is so difficult to get a piece of yew of equal quality throughout, that when a good piece of the wood, three feet long, can be obtained it is split, and two of the pieces are spliced. This gives a guarantee that each half of the bow will have equal degrees of elasticity at the corresponding parts.

You may either have a "self" bow or a "backed" bow. A self bow may be spliced in the middle, but it must be made all of the same kind of wood. A good backed bow is made in this way: A piece of dark snake wood, mottled and lined by nature like the back of a serpent, and very beautiful when polished, is trimmed into shape as if it were to be the sole material for the bow. It is elastic, but it is not strong. One side of it is trimmed into an oval or semi-circular shape, but the opposite side is trimmed flat. Upon this flat side is glued, in the most careful manner, a tough slat of hickory. This gives the bow strength, for when the bow is bent the snakewood must contract upon itself, and the hickory, being on the back, must stretch. Such a bow is worth from $9 to $12.

It is very important that the wood of a bow be properly seasoned. It should not be too dry. If the wood is too dry the first thing an archer knows he will find a chrysal in it. When he finds a chrysal in his bow, he must wind about the bow over the chrysal a fine string saturated with glue. A chrysal is a small crack in the bow, which is liable to enlarge and ultimately to cause fracture. It is a mistake to suppose a bow when at rest should bend a little backward. It rather should "follow the string" a little. Otherwise it jars the arms when the arrow is discharged, and should the string break the bow is apt to break. The wrapping of plush about the bow in the middle, where it is grasped when bent, is called the handle. The upper edge of this handle is placed about an inch above the middle of the bow. When the "weight," that is to say the power it takes to bend a bow, is to be tested, the handle is placed in the hook of a steelyard and the string loaded until it is drawn down twenty-eight inches for a gentleman's bow, and twenty-five inches for a lady's bow. Gentlemen's bows usually range from forty-five to sixty pounds, and ladies' bows from eighteen to thirty-five pounds.

Arrows in weight range from two shillings and three pence, lowest weight for ladies, to five shillings and six pence, highest weight for gentlemen. The method of weighing, or rather of recording the weight of arrows, has been handed down from early times. They were weighed against silver money, and great care was exercised then, as now, in making them of accurate weights to suit different persons and different bows.

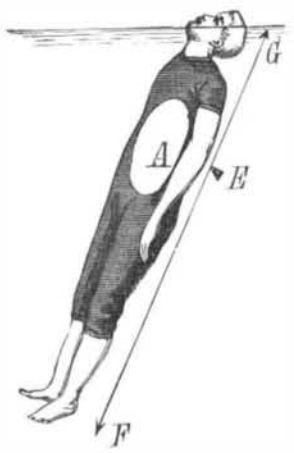
An arrow is made up of the "pile," or metal point, the "stele," or shaft, the feathers, and the "nock," or notch, of born. It may be "barreled" (largest in the center), "hobtailed" (larger at the point than at the feather), "chested" (larger at the feather than at the point), or "straight" (of even thickness throughout). Arrows may be "self," that is, made of one piece of wood, or they may be "footed" with a piece of hard wood at the pile end. The finest arrows are said to be of red deal, footed with lancewood. When the arrow is laid in position it should be at right angles with the string, although some archers think they can cause the arrow to take a higher or lower flight according as they nock it lower or higher on the string.

At the recent third grand annual meeting of the National Archery Association in Prospect Park. July 12, 13, and 14, tbe distances for ladies varied from 50 to 60 yards, and for gentlemen from 50 yards to 100 yards. The number of arrows fired by one contestant in a match varied from twenty-four to seventy-two.

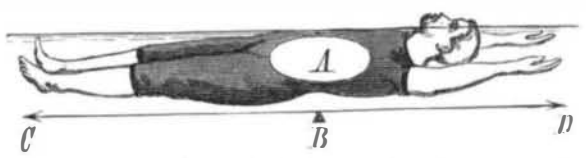
Froward, an English archer, is said to have shot an arrow from a 63-pound self-yew bow 340 yards.

THE SECRET OF EASY FLOATING.

The first lesson which the bather should learn is to float without effort on the surface of the water. The art of floating is set down as the first requisite, for several reasons. Even the most expert swimmer is liable to have his powers of endurance put to a test so severe that the art of resting on the water without effort may be of vital value to him; while to him who knows nothing of the art of swimming the ability to float securely is manifestly his only hope of



safety in case of accident on the waters. And the special merit of floating supine, as the first lesson in swimming, lies in the fact that it can be practiced in shallow water. Floating in a walking position, "treading water," is easy to learn, but it presupposes tolerably deep water; and the beginner is apt to bave little confidence in the buoyancy of the unfamiliar element. Having learned to rest at ease on shallow water, the bather is able to float into deeper water without losing confidence, and can thus pass by rapid and easy stages to swimming on the back, or through the practice of treading water to the art of swimming in the customary way, face forward.



Any one who has sufficiout resolution to assume the posture represented in the large engraving can float securely, even in tolerably rough water, absolutely without muscular movement, and with very little fatigue. A still more restful, though slightly less buoyant posture, is with the arms bent and the hands clasped under the back of the head.

The philosophy of the buoyancy of this posture is illustrated in the smaller cuts. The blank space, A, includes the lungs and other buoyant portions of the viscera. The quantity of air in this part of the body but little more than suffices to float the body. With tbe arms extended the body is, so to speak, balanced as upon a fulcrum at B; the natural tendency of the feet to sink is counteracted, and the body floats with the mouth and nose well out of water. With the arms at tbe sides, as in the other small cut, the preponderance of weight is below the center of buoyancy, the feet drop, and considerable effort is required to keep the nose and mouth from being submerged, either by throwing the head back, as shown in the cut, or by paddling with the hands. It is true that a very slight movement of the hands by a practiced floater suffices to keep the feet from dropping and the body horizontal; but that little effort, if long continued, is fatiguing, and is pretty sure to be unskillfully made by a novice.

Unless one is exceptionally lean or deficient in lung capacity the art of floating with the hands under the bead or extended above the head can be quickly learned; and in case of sudden emergency the non-swimmer will find it a certain and easy way of sustaining himself on water until help arrives.

PROPER POSITION FOR FLOATING.

Paste Diamonds.

The Providence *Journal*, which comes from the vicinity of immense cheap jewelry factories, has the following on "paste diamonds," which are simply glass of great purity:

"When imitation diamonds were introduced, it was found that to cut glass precisely like a diamond did not produce the sparkle characteristic of the diamond; therefore to secure this the flat surface on the top of the diamond was made pyramidal on the imitation, and, of course, ended in a point. By certain laws of light this pyramidal surmounting of the glass provided for the required distribution of ray surface to produce the diamond sparkle, or something akin to it. A real diamond is never cut with the pointed apex, and hence it was possible always to distinguish the real from the spurious. But after a time the buying public learned this little circumstance about the cutting process, and other means were resorted to. The glass was cut precisely like the diamond, and the sparkle was given to or provided for it by a coating of white foil applied to the lower side of the glass. The setting of many diamonds is arranged in such a way that the buyer may see the under side of the gem. This was overcome by arranging the setting so as to prevent inspection of this kind, which could not be done unless the stone was dismounted, if we may use tbat term.

"With these facts known to the buyer of diamonds, he need not be deceived except in the latter case, where the setting hides the under surface, and if he has any doubt about that he can let it alone. But the object of imitation diamonds is not to deceive buyers; if it was they would not be offered for two dollars. No one, however deficient in diamond criticism, need be deceived in buying diamonds. No dealer of any repute ever attempts to sell imitation for real diamonds. No reputable man ever thought of it. His reputation and occupation would soon be gone. Tbere are very few persons who buy trinkets who do not test their wares at other than the buying place, particularly if the gem is a costly one, and it is certain that no one was ever presented with jewelry of presumable worth who did not set out at once to learn its purity and value, and very disappointing it has doubtless been to find in some cases that the gold or diamond was only brass or glass."

A Large Collection of Tobacco Pipes.

A collection of tobacco pipes, now on view in London, is pronounced by the *Times* one of the most interesting of minor art exhibitions. The collection includes specimens of all countries, and belonging to many periods, of the graven images and idols of clay which bave been dedicated to the worship of tobacco. From France come pipes of Sèvres made in the national porcelain factory; from Germany old Dresden pipes and the pipe formerly smoked by the giant in the procession of the guilds at Cologne; from Holland several hundreds of the æsthetic clay called "Early Dutch," collected by Heer Van der Want, Master of the Pipemakers' Guild at Gouda. The Dutch contribution includes also specimens of the bridegrooms' pipes, clay ornamented with ribbons, which the farmer of the polders smokes on the day of his wedding and then lays by on the shelf, to be taken down once a year when the anniversary comes round of the momentous occasion. This pipe is regarded with great interest by smokers as an example of the various uses which tobacco serves in calming feelings of ecstatic joy and mitigating the pangs of regret. There are 700 early English pipes; Scandinavian pipes, with modern Runes inscribed upon them; Siberian bowls, the consolation of the exile, made of hard wood and mammoth ivory; Basque pipes, and the costly meerschaum and amber toys smoked by pachas in their seraglios. Ninety-six of the Japanese pipes are in ivory, twenty-four in wood, horn, rock crystal, agate, etc. The carvings illustrate the social life of Japan in its most amusing relations. One pipe which formerly belonged to Enomoto, foster brother of the Emperor, bears the imperial symbols, and the central portion is entirely inlaid with gold. The bowls are extremely small. A pipe contains merely a whiff. A piece of tobacco is rolled up to tbe size of a pea, and one long, soothing exhalation exhausts it. The smoke is retained for some time in the lungs, as usual in the East. It is no matter of surprise that, according to the narrative of the Earl of Elgin's mission, a Japanese will smoke fifty such pipes in a morning.

From China come the opium pipes, which balance the finances of India—tubes of jade or tortoise-shell, bowls of silver and enamel. Hookahs from India, the calumets of peace and war from North America, the pipes of the Aztecs and the Caribs, the latter called "tabaco," whence the European name of the weed originally consumed in them is said to be derived; pipes smoked at the great "customs" in Central Africa, the sperm whale's teeth carved into bowls, pipes from Caledonia and New Guinea, are also to be seen.