known by the way in which he enters the water. The height of the end of the board from the surface of the water may be from 3 to 20 feet. If the water is taken properly a clean dive or header is made, but some swimmers are careless and will flop into the water with the body contracted like a ball, instead of straightened out like an arrow. The descent of good divers into the water varies from 3 to 4 feet, of clumsy performers from 7 to 8 feet. The dive may be a standing or running one. The feet and legs are kept together, with the chest inflated, the arms slightly swung to and fro twice or so, and the body and legs bent towards the water. The lungs are charged, and the dive is made immediately before the arms and hands are raised forward into the air above the bent head. The feet are used with all the power possible in springing off. When in mid air the diver straightens himself out from finger tips to toes. The shoot downwards is made by declining the arms so as to enclose the head, the chest is momentarily contracted, and the water is gracefully and noiselessly entered fingers first. The instant the body is covered, throw up the head and arms so as to reach the surface. The eyes instinctively close as they enter the water ; if it were otherwise, the force with which the surface is struck might cause injury, especially in the case of high diving. As soon as the water is entered the eyes should be opened, as swimming under water with them closed may be attended with danger. The best method for novices is to begin from a board 3 feet high ; and, as confidence and a good style are acquired, the height may be raised 1 or 11/2 feet at a time. Running headers are accomplished by running 10 or 12 paces before springing off, and the diver endeavours to clear as long a distance as possible before entering the water. Muscles and weight have nothing whatever to do with perfection in diving. Slim youths and heavy middle- aged men and women have alike excelled in this branch of aquatics. The important requisites are courage and strength of nerve, com­bined with experimental knowledge of the behaviour of the body while in air and water. Do not enter the water feet first. This is only done by those who have not the courage to dive in the proper manner, and it sometimes causes harm to the respiratory organs, while one may lose balance and so come on to the water quite flat and be seriously injured in the stomach, ribs, or spine.

*Object Diving.—*Some divers move over the bottom in straight lines, and others search on no plan at all. The best way is to strike to the right or left on the circumference of the circle surrounding the objects and work spirally inwards to the centre of the circle. If the face be kept close to the bottom and the eyes brought well into use success will reward one’s efforts, and no object ought to be missed. For object diving the drawers should have a pocket easily accessible to one hand, in order to receive the objects raised. These are collected by swimming on the breast as quickly as pos­sible. All movements under water ought to be gone about with the utmost alacrity, but at the same time without undue haste or flurry, otherwise the heart’s action will be increased, the breath will suffer, and the stay under water will be shortened.

*Plate Swimming.—*This is a most interesting and enjoyable branch of the art. From a very early period we find references to mechanical appliances as aids to progression and support in the water, these helps generally taking the form of large flat surfaces made of wood, tin, leather, waterproof fabrics, or other similar materials. Sometimes they were flat, in other instances slightly concave. Some were made banded like the covers of a book, or hinged, others opened and closed with umbrella-like action, while quite a large number were made web-like, to resemble a duck’s foot ; nearly all were more or less collapsible. From what can be gleaned of the style of these articles it is evident that the inventors cannot have been familiar with the principles of swimming, or aquatic propulsive action, and so, while a number of the contrivances were undoubtedly the outcome of much thought and ingenuity, they could not be regarded as in any way improving on the ordinary or primitive swimming movements ; and, while greater surface than is offered by hands and feet was always given, with the evident intention of reducing “slip,” much resistance took place at the neutral or negative part of the stroke. The one good effect in most of these inventions was thus more than nullified by this “drag,” which, besides being objectionable in itself, had the additional dis­advantage of bringing into requisition muscles of legs and arms the development of which was antagonistic to perfection of swim­ming. In 1876 Mr R. H. Wallace-Dunlop, C.B., announced that he had invented swimming plates which afforded increased speed without causing undue straining of the muscles ; and these claims have been justified by subsequent experience. The arrangements for a lateral movement of the heels in the footboards or plates, with freedom of the ankles, showed at once that Mr Dunlop had fully studied the details of the art of swimming, with the effect of greatly reducing “slip” in the positive and altogether doing away with “ drag ” in tho negative parts of the leg stroke. Slow swimmers, by the use of the new appliances, move quickly and easily through the water, whilst moderately fast swimmers have their speed increased to an almost wonderful extent. To swim 100 yards in 70 seconds without artificial aid is regarded as a good per­

formance : there are not half a dozen living swimmers who can reduce this time by so much as five seconds. Yet about ten years ago a London swimmer, not by any means the fastest, with the assist­ance of the plates covered the distance of 100 yards in 60 seconds. It will thus be apparent that the invention marks an important advance in the art of swimming. These plates are made of wood —mahogany or American bass,—and are in shape somewhat like an artist’s palette, with this difference, that the bay or indenta­tion of the edge runs in to where the thumb-hole would be. The straps are made of leather, and all buckles and metal should be of bronzed or lacquered brass ; the woodwork ought to be kept well polished or varnished. The hand plates are at the thickest part 3/8 of an inch thick, but those for the feet must be much stronger, as the whole weight of the body is upon them while one is standing at or walking to the water’s edge. In learning to use them, let the swimmer begin by lying flat on the water, straightening the arms out about 24 inches apart. Spread the feet and legs well outward ; then so place the feet that the plates shall be vertical, and thus offer the soles as resisting surfaces to the water ; close the legs in such a way that the flat parts will meet when the legs come together. The return of the feet to the body is the same as in natural or unaided swimming, *i.e.,* by bringing them heels first so that the plates are carried up edge ways. Next, turn the ankles so as to allow of the soles facing outward, this being in plate swimming the point from which the positive or propelling part of the stroke actually starts. Now press outward and round until the plates meet as before, and repeat. Practise slowly and steadily until sure that in the recovery there is no drag, and that when spreading apart and closing the resisting surfaces are squared so as to reduce slip to its minimum. The hands are moved as in. ordinary swimming, with this difference, that they are all the time lying flat ; on their return to the body after the propelling move­ment no motion of wrist is to be made, great care being taken to keep the hand plates perfectly parallel with the surface of the water, as the slightest deviation from this rule, at any one part of the arm stroke, will sink or raise the head and chest, and so alter the natural and correct plane of the whole body. As the plates are lighter than the water the feet will tend to come close to the surface, if not indeed sometimes above it, causing splashing unless care be taken to avoid this. Floating in any position is easy and comfortable with plates on, and diving, sculling, and back swimming are all facilitated. The length of stroke in plate­swimming is nearly double that of ordinary water movements. The recommendations of the invention, especially in sea and long­distance swims, may be summed up in four words—safety, power, endurance, speed.

*Long Immersions.—*It is on record that on October 6, 1835, Samuel Brock, a Yarmouth fisherman, after being capsized, remained in the water for 71/2 hours before he was picked up. As a long­distance swimmer in ocean and tidal waters no one has ever approached Matthew Webb (1848-83), of the British mercantile marine service. His first great feat was plunging (April 23, 1873) off the Cunard S. S. “ Russia ” into a heavy sea in the unsuccessful endeavour to save a young sailor who had fallen overboard, when he passed 37 minutes in the sea before the lifeboat relieved him. He received the silver medal from the Royal Humane Society of London, the Stanhope gold medal, and a £100 purse subscribed by the passengers of the “Russia.” In June 1874 he swam from Dover to the north-east Varne buoy (91/2 sea miles). On July 3, 1875, he went from Blackwall Pier to Gravesend Town Pier on an ebb tide (181/2 miles) in 4 h. 52 m. 44 s., and on July 19, 1875, from Dover to Ramsgate (15 sea miles) in 83/4 h. An unsuccessful attempt to swim from Dover to Calais (171/2 sea miles) in the narrowest part of Dover Straits took place on August 12, 1875. He afterwards successfully accomplished the feat on August 24-25, 1875, after 21 h. 44 m. 55 s. immersion, the distance swum having been as nearly as possible 391/2 statute miles. A foolhardy attempt to swim the whirlpool rapids of Niagara cost Webb his life on July 24, 1883. On September 15, 1875, F. Cavil swam on the ebb of a strong spring tide from Putney to Blackwall (13 miles 3 furlongs) in 3 hr. 50 m. Miss Agnes Beckwith, of London, on the 17th July 1878, swam 20 miles in the Thames, without any assistance whatever, in 6 hours 25 minutes. Horace Davenport, of London, for years amateur champion of Great Britain, on 2d September 1884, swam from Southsea, Portsmouth, to Ryde, Isle of Wight, and back again in 5 h. 25 m.

*Remarkable and Best Swimming Records.—*The great majority of these have been achieved in England, but accurate statistics cannot be said to be plentiful. The following are some of the authenti­cally recorded results.

*Best Records in open and Still Water* :—100 yards, 1 m. 53/4 s. ; 220 yards, 2 rn. 541/4 s.; 300 yards, 4 m. 57 s ; 500 vards, 7 m. 58 s.; half-rnile, 14 m. 171/2 s.; 1000 yards, 15 m. 511/2 s.; 1 mile, 28 m. 193/4 s.; 3 miles, 1 h. 53 m. 30s.

*Bath Swimming.—*Of the innumerable enclosed swimming baths in Great Britain not many are exactly similar in measurement as regards length and breadth. The shorter the bath the faster becomes the time test of speed by tho aid of each turn. The Lambeth bath, where the greatest number of champion­ship and other celebrated bath races in the kingdom have been decided, is 40 yards long. The following are the best Lambeth records:—40 yards, 231/4 s.; 80