

**The art of swimming, made safe, easy, pleasant, and healthful. To which are added, cautions to learners, and advice to bathers, by the late celebrated Dr. Benjamin Franklin.**

**Contributors**

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THE  
**ART OF SWIMMING,**

MADE

**SAFE, EASY, PLEASANT,**

AND

**HEALTHFUL,**

BY

ATTENTION TO THE INSTRUCTIONS

HEREIN SET FORTH,

AMONG WHICH ARE,

How to go into the water	Suspension by the chin
How to begin learning to swim	To tread water
How to return back swimming	How to change hand and foot
To float with your face upwards	To swim with your legs tied
How to turn in the water	To creep
The turn called ringing the bells	To sit in the water
Turning or rolling round	To cut your toe nails
To swim backwards	To show four parts of your body
To turn laying along	To swim holding up one leg
To make a circle	To swim holding up both hands
To turn in an upright posture	To boot yourself
To advance with your hands joined	The leap of the goat
To swim on your side	How to dive
To swim with both hands still	The perpendicular descent
To swim with one leg in the opposite hand	To swim under water
To swim like a dog	How to rise after diving
To beat water	To make a circle under water
To keep one foot above the water	The agility of the dolphin
To show both feet	How to fly a kite in the water.

TO WHICH ARE ADDED,

CAUTIONS TO LEARNERS,

AND

ADVICE TO BATHERS,

BY THE LATE CELEBRATED

**DR. BENJAMIN FRANKLIN.**

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LONDON:

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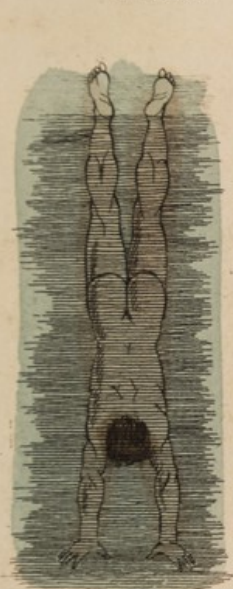
FRONTISPIECE.



*To Swim backwards, Page 9.*



*To carry the Left Leg in the right Hand, Page 12.*



*How to Dive, Page 17.*



*How to go into the Water, Page 5.*



*To tread Water, Page 14.*



*To float with the Face towards the Sky, Page 6.*



*To cut the Nails of your Toes in the Water, Page 15.*

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# THE ART OF SWIMMING,

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*Price Sixpence.*

THE  
ART OF SPINNING  
BY  
SAMUEL JOHNSON  
IN TWO VOLUMES  
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## PREFACE.

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**WHEN** we reflect on the frequent accidents which daily happen, through a want of knowledge of this Art, every one is ready to complain of the inequality of man in this respect, in comparison with other animals, to whom nature has given that faculty, which he ought to enjoy in a more excellent degree, since it is so necessary to his preservation. But if we thoroughly consider this point, we shall find nothing more unreasonable than that complaint, since, without doubt, man can swim naturally like other creatures, both for pleasure and advantage: otherwise so many would not acquit themselves with such admirable dexterity as we daily see, which sufficiently demonstrates, that man has naturally all those powers which are necessary for it.

But, it may be objected, if man has naturally all these requisite powers for swimming, how comes it to pass that all men do not swim alike? To this it is easy to answer, which is beyond doubt true, that they would all swim alike, without any distinction, and equally share that pleasure, which is as natural to them as to other creatures, were they not rendered incapable by fear, impatience, precipitation, &c. which render them unable to make use of those powers they possess. For testimony of this truth, we find that those in all ages whom courage has exempted from these defects, have swam from their very first attempt, and performed surprising actions, which is not uncommon now-a-days among those who imitate them. Swimming has at length become an art, reducible to certain rules, as will be found in the following pages, whereby any one, with frequent practice, may attain to the greatest perfection.

To mention some few advantages of swimming.—In case of shipwreck, if not very far from the shore, the art of swimming may bring you safe there, and save you from being drowned. In case of being pursued by an enemy, and meeting a river in your way, you may have the advantage of escaping two ways, by gaining the shore on the other side, and escaping from your enemy; and from being drowned in the attempt. And a good swimmer may not only preserve his own life, but others also.

It is from these considerations that the art of swimming ought to be esteemed, rather as a requisite than a pleasure,

which it is commonly reckoned! Insomuch, that besides the interest which particular persons may gain by learning and perfecting themselves in it, it seems worth while to erect public Academies, and establish experienced Masters in them, to teach it, since the advantages are so considerable. It will be found more easy to learn than it has ever been heretofore, by observing the precepts now laid down, by which those difficulties may be avoided which deter young beginners.

There is no season wherein a man may not have occasion to practice the art of swimming; but any season is not proper to learn it in. The best time of the year is from the month of May till October. It is not healthful at all times in those months, as when the weather is colder than ordinary for the season, and consequently the water. He that learns to swim, ought to have his animal spirits at perfect liberty and command, which cannot be when the more than ordinary coldness of the water forces him even to shake and tremble. The night is also improper for this exercise; and weeds that may also entangle the feet are also obstacles among the rest, and ought to deter any prudent person from venturing among them, especially considering that although you have company with you, yet you may be lost beyond all possibility of help.

You ought likewise to take care that the shore, or bank of the river, where you strip, be not muddy, that you may not dirt your feet in coming out; you ought also to take heed where the grass or weeds are high, for fear of adders, toads, or other venomous animals, and that it is plain easy turf, neat and clean, that you may keep your feet so in running to your clothes.

Something yet remains to be observed before you enter the water with regard to stripping yourself. If you perspire when you come to the place you have chosen, or some time before you came, and are not quite cooled, you ought to strip by degrees, and walk to and fro on the shore, so that you may recover a good temperature; and by thus gradually stripping, the pores have leisure to close, and the body comes in good condition to be exposed to the air without any detriment to the health; after which you may enter the water, and swim according to the following precepts.

# THE ART OF SWIMMING.



## *Of the manner of going into the Water.*

THOSE who do not know how to swim, ought to enter by degrees, and gently, into the water, but those who are expert, may leap in at once, with their head or feet perpendicular to the bottom. Others holding their right hand, or both hands behind their neck, from the bank cast themselves in head foremost, striking the water with the calves of their legs one after the other.

There are some who, after a short race, fling themselves into the water on their right or left side; others, taking several leaps towards the bank of the river, at last leap in with their feet foremost, body upright, meeting the water first with the calves of their legs and buttocks. This way is very safe and the best of all.

All these ways seem very well and pleasant, nor can I find any thing inconvenient in them, except it be, that those who make use of them run the hazard of taking in water at the nose and ears, but that may be avoided by holding in the breath. It sometimes happens, that those who are less expert, go down to the bottom, which is unpleasant, by reason of sometimes striking against it, and that in a great depth you are obliged to hold your breath a great while; but you may remedy that by turning on your back as soon as you begin to approach to the bottom, for you will cease descending as soon as you begin to turn yourself. The coldness of the water is somewhat troublesome at first, but a little time will take that off.

## *To begin to learn to swim.*

After he who is to teach you shall have fathomed the depth, or yourself have found it by means of a staff or plummet, to put yourself in a right posture for swimming, lay down gently on your belly, keep your head and neck upright, your breast advancing forward, your back bending, withdraw your legs

from the bottom, and immediately stretch them out in imitation of a frog, strike out your arms forward, and spread them open, then draw them in again toward your breast; strike forward, make use first of your feet, then of your hands, as many strokes as you can, and you will find this way easy and pleasant. I have been used to persuade those whom I have taught to swim, not at all to fear laying along the water when they know the bottom. It will sometimes happen that you will drink down some water, but that ought not to discourage you; nor need you fancy to yourself that you are not as capable of learning and swimming as well as others, for the same thing happens almost to all beginners; for it is common, at first learning, in lying along the water to sink down, and be almost stifled in holding one's breath. It is usual, at first, for these reasons, to administer sundry helps; as to hold up their chins, or give them a bundle of corks, or bladders, which are the best helps for young beginners.

Take special care that the water is not higher than your breast, nor shallower than up to your belly.

*How to Return back again in Swimming.*

To turn back, you must turn the palm of your right hand outwards from you, and strike out the arm the same way, and do exactly the contrary with your left hand and arm, striking that inwards the contrary way, embracing as it were the water on that side. Thus you may turn yourself also on the left side, after having inclined your head, neck, and the length of your body to that side.

*To Float or Swim with the face toward the sky.*

This way seems difficult, though it imitates the posture natural to man, to look upward; and if we know how to make use of it, there would not be so many drowned as there daily are; for that happens because, instead of looking upwards, they look downwards with their head toward the bottom, and embrace the water, as it were, with their arms, insomuch that one might say they did all they could to drown themselves.— If they could place themselves on their backs, and keep their body extended, they might easily escape, nay, could not sink in that posture if they would! this we find attested by experience; and I never yet met with any diver that could possibly descend in that posture, that is, with the face toward the sky; and if they had a mind to it, they found themselves

first obliged to elevate their arms upright, to contract their thorax or breast; and when this is done, find it very difficult to sink, though they slowly and always come to the bottom with their feet first.

But to learn to float or swim on your back, observe what follows. When you are upright in the water, lay down on your back very gently, elevate your breast above the surface of the water, and in the mean while keep your body always extended in the same right line, your hands lying on your belly, striking out and drawing in your legs successively, and govern yourself accordingly. It is true there will always be a great part of the head under water, which makes most tender pates not care for this way. Notwithstanding which, it is the most easy and safe of any way of swimming, and that wherein we may continue longest, for it tires least; and he is not forced to drink so much water this way, as when swimming on the belly; beside, we more easily cut through the waves, and run not so great a risk of being entangled among the weeds, as on the belly. At the beginning it will appear difficult, and we can scarce forbear using our hands. The best way to begin will be by the assistance of some one's hand, or a bundle of corks, or bladders; you have nothing to do but to lay down gently, and take especial care that you do not, through fear, put down one of your legs to feel for the bottom, for you need not fear sinking, but such a motion of the foot is the way to make you do so. You must also take care not to lift your knees too high, nor sink your hips and sides too low, but keep your body extended in the same straight line as I have already shown. If you have a mind to turn any ways, and you are not very expert, you must turn in taking a round or circle; or, also, while the one leg lies still, embrace the water next beside you with the other; thus, you will find yourself turn on that side on which your leg, by its motion, embraces the water, and you may turn either to the right or left, according as you make use of the right or left leg for that purpose. Swimmers ought to be acquainted with several ways of turning themselves backwards, or to one side, as occasion may require, to avoid meeting boats, weeds, rocks, or shores, and a thousand other accidents. There being several ways of doing it, I design here to show them all; and first that way which is called the easy turn.

Although there is not much occasion for any great motion



of the hands for those that swim on their backs; yet if you design to make any great advances forwards, you must use both your feet and hands too. This way is chiefly useful for swimming against waves.

*How to Turn in the Water.*

To turn easily you must incline your head and body to the side you would turn to, and at the same time move and turn your legs after the same manner, as you would do to turn the same way on land; this hinders and stops the motion of your body forwards all at once.

If you will turn to the left, you must turn the thumb of your right hand towards the bottom, and with the palm open, but somewhat bent, drive off the water foreright from that side, and at the same time, with the left hand open and fingers close, drive the water on that side backwards, and at once turn your body and face to the left. If you would turn to the right you must do just the same thing contrariwise.— If any one ask of what advantage this turn may be? its use is very great in retiring from dangers that may happen, as suppose you meet floating timber, or any thing else that you are obliged to avoid. It is also useful for helping others that are in danger. But you must take especial care that, in turning often this way, your legs are not open, and that you have water enough, for fear of hurting your back parts against the ground.

*The Turn called Ringing the Bells.*

This way of turning is at least of as great use as the preceding; you have no need of much room for it, and may do it either swimming on the back or belly, and you go contrary in one to what you do in the other. If you swim on your belly, you must at once draw in your feet, and strike them forwards, as you did before backwards, at the same time striking out your hands backwards, and putting your body in an upright posture.

If you swim on your back you must at once draw in your legs toward your buttocks, and striking them down towards the bottom, cast your body forward till you are turned on the belly; but you must take heed that you have water sufficient, and that there are no weeds at bottom, which have sometimes proved fatal to the best swimmers.

*Another way of Turning or Rolling round.*

There is another way of turning from the right to the left, and contrariwise, as a globe does about its axis. If you swim on your belly, and would turn to the left, you must extend your right hand and arm as far out before you as you can, and turn your face, breast, and whole body, to the left, lifting up your right hand towards the top of the water, and you will find yourself on your back, and from your back you may turn again on your belly, and so as often as you please. And to the end that these changes of posture may be performed with speed and agility, you must take care to keep your legs close together, and your arms stretched out before your breast, but not separated from one another.

*To Swim backwards.*

When lying on the back we push ourselves onward with our feet and legs; but to do the contrary, and advance forward, we must, lying always on the back, keep the body extended at full length in a straight line, the breast inflated, so that that part of the back which is between the shoulders, must be concave (or hollow), and sunk down in the water, the hands on the belly. Being, I say, in this posture, you must lift up your legs one after another, and draw them back with all the force you can towards your hams, letting them fall into the water, for thus you will return to the place whence you came. This way is not only very pleasant, but also when you find yourself weary sometimes with swimming, and far distant from the shore, it may be useful to rest yourself, and give you time to recruit your spirits.

*To turn one's self laying along.*

It seems at first sight as if to turn one's self, and turn one's self laying along, were the same thing; but to turn laying along, you must keep yourself in a posture extended and laying on the back, the top of your arms close to your sides, turning the lowest joint of your right hand outwards; the legs at a distance from one another, at least a foot, or thereabouts. The soles of your feet turned towards the bottom of the water. In this posture you may turn, as you please, towards the right or left side. This may be serviceable in several rencounters; for it often happens, that a person swimming on his back, may be forced against a bank, or

among weeds; wherefore a ready way of turning is very proper to avoid those sort of dangers. But, notwithstanding these methods of escape, it is not safe to venture among such sort of dangers, especially weeds; for some time or other one may be caught. There is another way of disengaging one's self from weeds, which I will show under the following head.

*To make a Circle.*

The circle is made, when one foot remaining immoveable, the other turns round, and describes a circle, ending where it began: in the same manner the head may remain immoveable, while the legs strike the water, and make the body turn round. To perform this, the body laying on the back, if you would begin to turn from the right to the left, you must first sink your left side somewhat more toward the bottom than the other, and lift out of the water your legs successively, first the left, then the right, and at each of these motions advance your legs onwards about a foot each, towards the left side, your head remaining still in the same place; the froth on the surface of the water will note the parts of the circle you have described. This way may serve to remove any thing from one's head, or feet, which too often happens in the water. In the practice of it you must take care not to elevate your feet too high in the air, for that would sink down the head in the water; nor to strike the water too hard with the feet, as it causes a disagreeable noise.

*To turn one's self in the Water, being in an upright Posture.*

Being in the water in an upright posture, you may turn and view every thing successively round about you. You may see that I am indeed upright, but to make you understand those motions of my feet which you cannot see; suppose I have a mind to turn to the right, in the first place I embrace the water with the sole of my right foot, and afterwards with that of my left; and in the mean while I incline my body towards the left; I also draw as much as I can the water towards me with my hands, and afterwards drive it off again; I draw it first with my left hand, and then with my right, and having so drawn it towards me, drive it off again. This manner of swimming may be very useful; it is very serviceable to know what happens on every side. Suppose you are in the sea, you may this way find a place to land on, or

where to attack an enemy that might happen to follow you, or avoid his attacks; or if you have a mind to fight him in the water, it shows how to do it to the most advantage, and to turn yourself on all sides. There are several other different manners of turning one's-self in the water, and among them some that are very curious and pleasant, but they are only for those to practice that are very expert in this art.

*To Advance forward in Swimming with the hands joined together.*

This is one of the first and most simple ways of swimming, and is also very graceful. In the practice of it you hold your hands joined together, drawing them in towards the breast, and successively striking them out again. The two hands remain all the while joined, insomuch that the thumbs and fingers being turned towards the surface of the water, seem to be out of it. Besides the gracefulness of this way of swimming, it is moreover serviceable for traversing or swimming across a heap of weeds, &c. for the hands being thus joined as it were in a point, open a passage for you through weeds or reeds, if they chance to oppose you, especially if you take care not to strike your hands out too far.

*To Swim on your Side.*

Suppose you swim on your back or belly, lower or sink your left side, and at the same time elevate your right one.— In swimming, when you are thus laid, move your left hand as often as you see convenient, without either separating it far from your body, or sinking it, perpetually striking it out, and retracting it, as in a right line on the surface of the water. Besides the pleasure of swimming thus, you may also find an advantage by viewing as you please either side of the river, and also one side may rest while the other is employed.

*To Swim on the Belly, holding both Hands still.*

This is easily performed in the following manner. You must keep your breast advancing forward, your neck upright on the water, both your hands fast behind your head, or on your back, while in the mean time your legs and thighs push you forwards by the same motions you make when you swim on your belly. This way of swimming may be useful in case any accident, as the cramp, &c. should happen to your arms, or if you were forced to swim with your hands tied behind you, and your life depended on it. The same thing may be

performed by placing yourself on the back, but the other way is most advantageous, because you may see your way before you; and those that swim on the back are obliged to turn themselves often for that purpose. Besides the hands are here at rest, but must be employed if you turn yourself on your back.

*To carry the Left Leg in the Right Hand.*

This is performed when in swimming on the belly; you lift up your leg, and moving it towards the buttocks, take hold of it with the hand of the opposite side, continuing in the mean while to swim with the leg and other hand which are at liberty. This method may be serviceable in cases of cramp or gout, or if one leg should be entangled among weeds; for by this manner you may easily break through them; but if you should chance to find yourself engaged wholly among weeds on every side, the following method will be most proper.

*To Swim like a Dog.*

You are not to imagine that this way is difficult, for it is so far from it, that several who never knew how to swim before, by practising it by chance, have kept themselves above water. To swim like a dog, you must lift up and depress one hand successively after another, and do the same also with your feet, only with this difference, that with your hands you must draw the water towards you, and with your feet drive it from you; you must begin with the right hand, and right foot, and afterwards with the left hand and foot, and so successively.— This way of swimming is very useful for disengaging one's self from weeds under water. But here follow other more easy methods to avoid the same danger by swimming on the back, whereof the first is very pleasant.

*To beat the Water.*

You strike the water with your right and left legs; the manner of it is very pleasant; when swimming on the back, at each extension of the legs, lifting them up out of the water one after another, you strike the water so that it rebounds up into the air. Those who are most expert at this, bring their chins towards their breast at each extension. There are some who, not satisfied with going so far only, to perform the business more gracefully, lift up their legs much higher than others, strike the water at each extension, sometimes with

the right leg, sometimes with the left, and at the same time turn the whole body. This is the most agreeable manner of all the rest. To perform this, you must keep your body extended on your back, expand or inflate your breast, and keep it almost out of the water, the palms of both your hands extended and turned towards the bottom, for it is the office of the hands to keep up the body while you strike and open your legs; but if at the same time you have a mind to beat water, and turn yourself, in that case supposing your right leg is up out of the water, you must strike the water with that, and at the same time lift up the left leg and by the same action turn your whole body. This agility makes swimming very easy, and does not require so much force as the following.

*To keep One Foot at Liberty.*

These easy ways of swimming, or rather refinement, seem more for diversion than advantage; yet, notwithstanding, there is not one of them but what may be serviceable in some of those numerous rencounters which happen to swimmers. As, for example, this may serve to disengage one's feet from weeds, and that after a fearless manner, which shows the swimmer to be master of his art. He turns himself sometimes to the right sometimes to the left, having always one leg up out of the water, looking about him, bringing in his chin always towards his breast. It is more difficult than it seems to be at first sight: for if the breast is not inflated, the palms of the hands extended, and turned downwards towards the bottom, and if the other leg is not employed in the water; in short, if you miss of any of these things, your head immediately sinks down. Thus the address or management of it, is difficult: but the recompence, when learned, satisfactory and very useful, as I have before shown in disengaging one's self from weeds. Here follows another method more easy.

*To shew both Feet out of the water.*

One may swim holding both feet out of the water, and this is very easy; you may also not only remain so in one place, but also make advances forward. You must place yourself on your back, and bend the small of it contrariwise to what is practised in other ways of swimming: your hands must be on your belly, the palms of them open, moving them to and fro, like oars, which must sustain your body

while your feet are down. This way of swimming will serve to show you whether your feet are clean or not, after having taken them from the bottom.

*Suspension by the Chin.*

You cannot easily imagine how this manner of swimming is performed, as it is indeed very surprising. By this means you may stand upright in the water, though ever so deep, without fear of sinking. To make you comprehend it, you are to remember, that when you swim on your back, you lie still, your legs being extended; when you find yourself in that posture, you must let your legs go down or sink; and when they come to be perpendicular to the bottom, you must take them up again, bending your knees, and inflating your breast: and as to the arms and hands, whereof the back parts lie flat on the water by the shoulders, you must sometimes extend them on one side, sometimes on the other, sometimes shut them, turning the palms towards the bottom, the fingers close to one another, holding your chin as upright as possible. This way, which seems so surprising, is sometimes very useful; suppose, at any time, the ice should happen to break under your feet, this way will be of vast advantage to secure yourself from the danger. It may also be very advantageous in case a man is obliged to save himself from some enemy pursuing him, by leaping into the water in a dark night; for in that case a man may wait without making any noise, till he has passed by, and then go again on shore.

*To Tread Water.*

By this way you remain upright in the water without making any motion with your hands, only you move the water round with your legs from you, the soles of your feet being perpendicular to the bottom; you may make use of this if you are cast into the water bound hand and foot. This way of swimming is very advantageous, for it gives us the free use of the hands. One may make use of it in defending one's self; but it ought not to be practised where the bottom is full of rushes or weeds, for they may entangle one of the legs; and in such case you may use the following method.

*Changing Hand and Foot.*

With the right hand you hold the left foot, and contrariwise: but you must change these holds by a speedy letting or strik-

ing down the foot held up. This may be useful for taking off weeds from the legs, and freeing them when they are both engaged amongst them.

*To Swim having the Legs tied together.*

The legs being bound either by weeds, or otherwise, you must turn on your back, and lay your hands across on your breast, for in that posture you may gain the shore, by striking your legs one against another, and holding them up as much as you can.

*To Creep.*

The action of swimming in man, is very like the motion of creeping in reptiles; as suppose a snake, for example, who resting or stopping first, with his fore parts, draws the rest of the body forwards; and it is a way very serviceable to get clear of weeds. To practise it, being on the belly, you cast your hands forwards, and your feet softly backwards, but close together, and thus you advance, extending your arms and hands as far from your breast as possible, your fingers close, and the palms of your hands a little bent, turned towards the bottom; for being in this posture, if you draw toward your breast with your hands and arms the water that is before you, by that you give time to the rest of your body to advance further, and to disengage yourself from the weeds, if you are entangled in them, which must not be done with too much haste or force; for if you strike out your hands and arms too vigorously, you will entangle yourself more among them, and when they have once caught you fast, you are in danger of perishing, if timely help does not come to relieve you.

*To Sit in the Water.*

Expert swimmers can do whatever they please in the water; they can walk there, stand still upright, lay still, or sit down. To sit you must take both your legs in your hands, draw in your breath, and so keep your breast inflated; your head upright, and lifting up successively your arms and legs, by that motion sustain yourself. This way may be serviceable to pluck off weeds, which may happen to entangle and hang about your legs, as also to sustain or keep one's self above water in places where there is not room enough to swim, or the ground muddy, or otherwise disagreeable to the feet, so that you care not to set them down.



*To cut the Nails of your Toes in the Water.*

It is possible to perform actions in the water, which one cannot do on land; I myself have often brought my great toe to my lips in the water, which I never could do on land nor on my bed. You must hold your knife in your right hand, take up your left leg, and lay the foot on the right knee; there you may take it from the left hand, and with your right cut your nails without any danger.

*To show out of the Water four parts of the Body.*

This manner shows at once four parts of the body, viz. the head, the two elbows, and one knee; if you lift up one knee, and place it upon the other by turning it, while in the mean time you lift up and depress the other successively, keeping in the interim your elbows elevated, your breast inflated and elevated as much as possible, and all lying on the back. Besides the management of this method, and the difficulty of doing it well, it is serviceable to rest yourself by putting one thigh across the other, and to take breath where the water is so deep that you cannot reach the bottom.

*To Swim holding up one Leg.*

This way seems at first to be the same with that of showing the feet out of water, which we have already taught, but it is very different from it; for while you hold up one of your legs, both your hands must embrace and gather together (as it were) the waters, striking them under you, and driving them off; the other leg must not be lifted up above half way, beating the water frequently therewith, by quick and short strokes. This is an easy way to carry any thing from one side of a river to the other, by fastening it to your great toe: but you may perform the same thing more easily as follows:

*To Swim holding up your Hands.*

While you swim on your back, it is easy to put your hands to what use you please, but it is difficult to hold them upright, and swim at the same time too. It would appear at first sight as if this were the most easy method we have yet taught. You must take care lest while you lift up your arms, the thorax or breast be not contracted, for so you sink. The whole art of this way of swimming consists in heaving up the breast as high, and keeping it inflated as much as possible, while your arms are held.

*To Boot one's self in the Water.*

I call this way booting or drawing on one's boot, because the action very much resembles a man doing so. You must first lift up one leg out of the water, and afterwards the other, and take the foot in the hand as those do who are drawing on their boots, and presently after let it go again, extending it out at length. The management of this way consists in keeping up your breast as high as you can, and as much inflated as possible, and also the one leg up out of the water, while the other is continually playing downwards. This way is very commodious for cleaning your feet from mud, &c.

*The Leap of the Goat.*

It is called so by reason you imitate the leaping of goats in the motion of the feet. To perform it you must have both courage and strength. You must keep your breast inflated, and strike with both your hands the water on each side, by thick short strokes three or four times, but more forcibly the last time than the others; while you are doing thus, you must lift your feet up quite out of the water, and rub them one against the other, as you see commonly done in cutting of capers. This is one of the most difficult, the most ingenious pieces of art belonging to swimming, and when you have arrived at it, you may say you have mastered one of the most difficult points in the whole art; for it is as difficult as to swim under water, to which there is required a great deal of artificial management; which now I come to show. The first step is to learn to dive.

*To Dive.*

If men sink to the bottom of the water, it is their own fault, nature has laid no necessity on them to do so; nay, there is not only occasion for force and strength to come thither, but also art to do it safely, speedily, and handsomely; but those who are expert at swimming do it, on occasion, as swift as an arrow, and descend perpendicularly or obliquely, as they please. The first way of doing it is to begin with your feet touching the bottom; then afterwards rise up, your head bowed down, so that your chin must touch your breast; the crown of your head being turned towards the bottom, holding the backs of your hands close together, right before your head, and sinking or striking them down first with all the swiftness and exactness you can; thus you may dive to the bottom; and this is the first way I ordinarily teach.

*The perpendicular Descent.*

This is proper for those who leap off from any height into the water, as from a bridge or ship. This is performed by taking a leap a little forward, and sometimes upward, that your descent may be perpendicular and swifter to the bottom, and also that your head may be perpendicularly downward. This way is very commodious, when you have very deep water, and it cannot be performed after any more ready method, because of the difficulty of long holding one's breath. However, it is seldom put in practice by reason of the dangers which attend it; but the following method is free from danger, and also otherwise pleasant.

*To Swim under Water.*

In the first place you are to determine whether you are to swim at the bottom of the water, or near the surface, or in the middle between both. You first of all dive down; the two hands must be turned back to back, and close to one another; after which you must extend them with all the swiftness you can, your thumbs turned upwards, and your fore fingers towards the bottom; and if you have a mind to descend yet lower, you must, as your hands are extended, still strike them down lower in the water. If contrariwise, you would reascend towards the surface of the water, you must keep the palms of your hands open, and your thumbs towards one another, as when you swim on the belly, the palms of your hands being towards the bottom, and your two thumbs, as I have just now said, towards one another. He that would swim in the middle, or between top and bottom, must grasp with both his arms the water before him, attracting it towards him, keeping, in the meanwhile, his thumbs turned more towards the bottom of the water, than the rest of his hands.— You may have occasion to swim thus, when you are to seek for any thing at the bottom of the water, or to pass unseen from one shore to another; sometimes, also, to help one in danger of being drowned. But in this last case you must take heed not to come too near, neither under water, nor on the surface, to any one in that danger; for if such a one takes hold of you, you are certainly lost.

To proceed, therefore, in that case safely, you must keep at a distance, as ten or twelve feet off; your best way will be not to lay hold of him till he is quite sunk down, and lost the use of his sight; and if you have observed the place

where he is, you may endeavour to take hold of him by the hair, and so draw him on your back, taking always care that he does not lay hold of you, or otherwise hamper you; you may thus draw him to some shallow place; or if you have any string or rope about you, leave one end on the shore in the hands of your companions, and fasten the other to him, and so let them draw him out.

*To come to the top of the Water again, after having Dived.*

After you are at the bottom, you may return with the same facility; which is performed much after the same way as we have taught before, to turn one's self in the water; the person who swims with one of his hands extended, must push from him the water before him with his palm, and with the cavity of the other palm drawing the water that is behind him toward him; when your hand is extended as far as it can be, the fingers of the hand so extended, and the palm of that turned outwards, ought to shut or clench; the perfection of this way you will see as follows:—

*In Swimming under Water to make a Circle.*

When swimmers go to search for any thing in the water, they swim round about the place where the thing was cast in, if they do not find it immediately; by this sort of address they can take up the least thing that is at the bottom. The manner of making this compass or circle is thus: if you would begin the circle from the right hand, and end it at the left, you must grasp or embrace the water with both your hands from the right to the left, and exactly contrary if you would turn the other way; but when you have dived perpendicularly down, and cannot find what you want to seek, you will be obliged to take such a compass, but do not go so far as to lose the light; for when that once begins to fail you, it is a sign you are either too deep, or under a boat, or shore, or something else that intercepts the light. You must always take heed of venturing into such places; and if you should find yourself so engaged, call to mind whereabouts, or which way you came thither, and turn back the same way, looking upwards for the light; for you may see it a great way off; above all, take heed you do not breathe under the water. In case you are afraid that an enemy should lay wait for you when you come up again, you must have recourse to the agility of the dolphin.

*Agility of the Dolphin.*

This way teaches to descend and come up again in the water to take breath, and after having respired, to dive down again. You may swim fifty paces under water in the summer without taking breath, which has saved many people's lives. After two or three strokes you must dive, the deeper the better and more safe, so you have the light; you may advance forward, or keep yourself under water in the same place as long as you can hold your breath; when you can hold it no longer you come up to breathe, and then dive again, as often as the necessity of respiration requires. There are several sorts of dangers which may oblige us to take this method.

*Dr. Benjamin Franklin's advice to Bathers.*

The only obstacle for improvement in this necessary and life preserving art is fear; and it is only by overcoming this timidity, that you can expect to become a master of the preceding acquirements. It is very common for novices in the art of swimming to make use of corks or bladders to assist in keeping the body above water. Some have utterly condemned the use of these; however, they may be of service for supporting the body, while one is learning what is called the stroke, or that manner of drawing in and striking out the hands and feet that is necessary to produce progressive motion. But you will be no swimmer till you can place confidence in the power of the water to support you; I would therefore advise the acquiring that confidence in the first place; especially as I have known several who, by a little of the practice necessary for that purpose, have insensibly acquired the stroke, taught as if it were by nature. The practice I mean is this; choosing a place where the water deepens gradually, walk coolly into it till it is up to your breast; then turn round your face to the shore; and throw an egg into the water, between you and the shore; it will sink to the bottom, and be easily seen there if the water is clear. It must lie in the water so deep as that you cannot reach it to take it up but by diving for it. To encourage yourself in order to do this, reflect that your progress will be from deep to shallow water, and that at any time you may, by bringing your legs under you, and standing on the bottom raise your head far above the water; then plunge under it with your eyes open, which must be kept open before

going under, as you cannot open your eye-lids for the weight of water above you, throwing yourself toward the egg, and endeavouring by the action of your hands and feet against the water, to get forward till within reach of it. In this attempt you will find that the water buoys you up against your inclination; that it is not so easy a thing to sink as you imagine, and that you cannot but by active force get down to the egg. Thus you feel the power of the water to support you, and learn to confide in that power, while your endeavours to overcome it, and to reach the egg, teach you the manner of acting on the water with your feet and hands, which action is afterwards used in swimming to support your head higher above the water, or to go forward through it.

I would the more earnestly press you to the trial of this method, because, though I think I have satisfied you that your body is lighter than water, and that you might float in it a long time with your mouth free for breathing, if you would put yourself in a proper posture, and would be still, and forbear struggling; yet, till you have obtained this experimental confidence in the water, I cannot depend on your having the necessary presence of mind to recollect that posture, and the directions I gave you relating to it. The surprise may put all out of your mind. For though we value ourselves on being reasonable knowing creatures, reason and knowledge seem, on such occasions, to be of little use to us; and the brutes, to whom we allow scarcely a glimmering of either, appear to have the advantage of us.

I will, however, take this opportunity of repeating those particulars to you, which I mentioned in our last conversation, as, by perusing them at your leisure, you may possibly imprint them so in your memory as on occasion to be of some use to you.

1. That though the legs arms and head of a human body, being solid parts, are specifically something heavier than fresh water, yet the trunk, particularly the upper part from its hollowness, is so much lighter than water, as that the whole of the body taken together is too light to sink wholly under water, but some part will remain above, until the lungs become filled with water, which happens from drawing water into them instead of air, when a person in the fright attempts breathing, while the mouth and nostrils are under water.

2. The legs and arms are specifically lighter than salt water, and will be supported by it, so that a human body can

not sink in salt water, though the lungs were filled as above, but from the greater specific gravity of the head.

3. That therefore a person throwing himself on his back in salt water, and extending his arms, may easily lay so as to keep his mouth and nostrils free for breathing; and by a small motion of his hand may prevent turning, if he should perceive any tendency to it.

4. That in fresh water, if a man throw himself on his back, near the surface, he cannot long continue in that situation, but by proper action of his hands on the water. If he uses no such action, the legs and lower part of the body will gradually sink till he comes into an upright position, in which he will continue suspended, the hollow of his breast keeping the head uppermost.

5. But if, in this erect position, the head is kept upright above the shoulders, as when we stand on the ground, the immersion will by the weight of that part of the head that is out of the water, reach above the mouth and nostrils, perhaps a little above the eyes, so that a man cannot long remain suspended in water with his head in that position.

6. The body continuing suspended before, and upright, if the head be leaned quite back, so that the face looks upward, all the back part of the head being under water, and its weight consequently in a great measure supported by it, the face will remain above water quite free for breathing, will rise an inch higher every inspiration, and sink as much every expiration, but never so low as that the water may come over the mouth.

7. If, therefore, a person unacquainted with swimming, and falling accidentally into the water, could have presence of mind sufficient to avoid struggling and plunging, and to let the body take this natural position, he might continue long safe from drowning, till perhaps help should come. For as to the clothes, their additional weight, while immersed, is very inconsiderable, the water supporting it, though, when he comes out of the water, he will find them very heavy indeed.

But, as I said before, I would not advise you, or any one, to depend on having this presence of mind on such an occasion, but learn fairly to swim; as I wish all men were taught to do in their youth; they would on many occasions be the safer for having that skill, and on many more the happier, as free from painful apprehensions of danger, to say nothing of

the enjoyment in so delightful and wholesome an exercise.—Soldiers particularly should, methinks, all be taught to swim; it might be of frequent use, either in surprising an enemy, or saving themselves. And if I had now boys to educate, I should prefer those schools (other things being equal) where an opportunity was afforded for acquiring so advantageous an art, which, once learned, is never forgotten.

I know by experience, that it is a great comfort to a swimmer, who has a considerable distance to go, to turn himself sometimes on his back, and to vary in other respects the means of procuring a progressive motion.

When he is seized with the cramp in the leg, the method of driving it away is, to give the parts affected a sudden vigorous and violent shock; which he may do in the air as he swims on his back.

During the great heats in summer there is no danger in bathing, however warm we may be, in rivers which have been thoroughly warmed in the sun. But to throw one's self into cold spring water, when the body has been heated by exercise in the sun, is an imprudence which may prove fatal. I once knew an instance of four young men, who, having worked at harvest in the heat of the day, with a view of refreshing themselves, plunged into a spring of cold water; two died upon the spot, a third the next morning, and the fourth recovered with great difficulty. A copious draught of cold water, in similar circumstances, is frequently attended with the same effect in North America.

The exercise of swimming is one of the most healthy and agreeable in the world. After having swam for an hour or two in the evening, one sleeps coolly the whole night, even during the most ardent heats of summer. Perhaps the pores being cleansed, the insensible perspiration increases, and occasions this coolness. It is certain, that much swimming is the means of stopping a diarrhœa, and even of producing a constipation. With respect to those who do not know how to swim, or who are affected with a diarrhœa at a season which does not permit them to use that exercise, a warm bath, by cleansing and purifying the skin, is found very salutary, and often effects a radical cure. I speak from my own experience, frequently repeated, and that of others to whom I have recommended this.

You will not be offended if I conclude these hasty remarks by informing you, that as the ordinary method of swimming



is reduced to the act of rowing with the arms and legs, and is consequently a laborious and fatiguing operation when the space of water to be crossed is considerable; there is a method by which a swimmer may pass to great distances with much facility, by means of a sail. This discovery I fortunately made by accident, in the following manner.

When I was a boy I amused myself one day with flying a paper kite; and approaching the bank of a lake, which was near a mill board, I tied the string to a stake, and the kite ascended to a very considerable height above the pond, while I was swimming. In a little time, being desirous of amusing myself with my kite, and enjoying at the same time the pleasure of swimming, I returned; and loosing from the stake the string with the little stick which was fastened to it, went again into the water, where I found, that, lying on my back, and holding the stick in my hands, I was drawn along the surface of the water in a very agreeable manner. Having then engaged another boy to carry my clothes round the pond to a place which I pointed out to him on the other side, I began to cross the pond with my kite, which carried me quite over without the least fatigue, and with the greatest pleasure imaginable. I was only obliged occasionally to halt a little in my course, and resist its progress, when it appeared that, by following too quickly, I lowered the kite too much; by doing which occasionally I made it rise again. I have never since that time practised this singular mode of swimming, though I think it is not impossible to cross in this manner from Dover to Calais. The packet boat, however, is still preferable.

B. FRANKLIN.

THE END.











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