

HOW TO DETECT DEATH.

IT IS NOT SO EASY A TASK AS SOME PEOPLE IMAGINE.

The Certain Sign is Sure Only When a Combination of Tests is Employed or by Waiting—Methods Usually Resorted to by the Doctors.

From Blandford, Mass., there came a remarkable story the other day telling how a man after being placed in his coffin for dead, showed strange signs of life and how his relatives watched the body all night until there remained no doubt that he was dead. The man—his name was John Knox—had died of heart disease. As they were about to close the coffin it was noticed that the glass plate above his head was covered with a slight moisture. Upon removing this plate his face was found to be moist.

A physician immediately examined the body, but declared that life was extinct. The coffin was about to be lowered into the grave, when the relatives pleaded that it be taken to the church and left there over night. Throughout that night there was never a moment when some eye did not rest upon the casket. There were no signs of dissolution, and at daylight the face presented a singularly life-like appearance. The cheeks were red and seemed to belong to a man in the full bloom of health. At noon, however, the signs of dissolution suddenly became marked and the body was buried with the full consent of the family.

This story, as it was published, did not tell what tests the physician used to determine whether life was extinct or not. There are many people in the world who often allow their mind to dwell upon the fear or the horror of being buried alive. It is not often that there arises a doubt as to whether life is extinct or not, but nevertheless physicians have given the matter considerable study, and, strange to say, they have not yet devised a single test which will immediately and surely prove that a person is alive or dead.

During a great plague in southern Germany in the last century people died like sheep, and in the excitement and the struggle for safety among those that survived but little attention could be given to any person who had reached that stage of the disease where unconsciousness set in. When they reached that point they were quickly buried. Unconsciousness almost invariably meant death, but as it had happened in several instances that patients under careful nursing had recovered even from this last stage, a great dread spread itself over the land that people were being buried alive. This created so much excitement that the authorities deemed it advisable to allay these fears as well as they could. They went about it thus:

As soon as a person was supposed to be dead he was carried into a building provided for that purpose and placed in an open coffin. Cords were then tied to his head, hands and feet, and made fast at the other end to a bell rope. The bell was so balanced that the slightest, the most imperceptible movement of a muscle would make it ring loud. This at once allayed the excitement that prevailed, and when upon the bell actually rang and the supposed corpse returned to life, it was believed that a sure means of avoiding that awful error had been devised.

In later years, however, physicians have been searching for a test that could be applied at once and would determine in a few minutes whether death had set in or not. Although it was found that a combination of tests invariably settled all doubt, they could not find one which could do it quickly, simply, and alone.

Some time ago a French physician submitted to the French Academy of Medicine what he called a "diaphanous" test of death. This test was to hold the hand of a supposed dead person before a strong artificial light, with the fingers extended and just touching each other.

The physician's theory was that if there be a scarlet line of light in the narrow spaces where the fingers come short of touching, there must be circulation of the blood and therefore evidence of vital action, while if there be no illumination then the circulation has ceased and death has occurred. The French Academy was so impressed with the value of this test that it awarded a prize to the discoverer.

Now an English physician comes and shows that this test is not a whit more reliable or certain than any of those that have been in use a thousand years and have not proved to be perfectly satisfactory. In the June Lancet, Dr. Edwin Haward, in a paper on "The Proper Value of the Diaphanous Test of Death," describes the following remarkable case:

"I was called in January last to visit a lady, 73 years of age, suffering from chronic bronchitis. She had often suffered at intervals from similar attacks during a period of twenty-five years. The present attack was very severe, and, as she was obviously in a state of senile decrepitude, her symptoms naturally gave rise to considerable anxiety. Nevertheless she rallied and improved so much that, after a few days, my attendance was no longer required.

I heard nothing more of this lady until Feb. 6—a period of three weeks—when I was summoned early in the morning to see her immediately. The messenger told me that she had retired to bed in the usual way and had apparently died in the night, but that she looked so lifelike there was great doubt whether death had actually taken place. Within half an hour I was by her bedside; there was no sign of breathing, or pulse, or of heartbeat, and the hands, slightly flexed, were rather rigid, but the countenance looked like that of a living person, the eyes being open and lifelike. I believed her to be dead, and that the rigidity of the upper limbs indicated commencing rigor mortis, but this curious fact was related to me by a near relative that once before she had passed into a death-like state with similar symptoms, even to the rigidity of the arms and hands, from which she had recovered, and after which she had always experienced the direst apprehension of being buried alive.

"Her anxiety, it will be easily conceived, was readily communicated to her relatives, who urged me to leave nothing undone for determining whether life was or was not extinct. Under the circumstances I suggested that Dr. (now Sir) Benjamin Ward Richardson, who has made the proofs of death a special study, should be summoned. He soon arrived and submitted the body to all the tests in the following order, each testing being written down at the moment by myself.

1. Hearts sounds and motion entirely absent, together with all pulse movement.
2. Respiratory sounds and movements absent.
3. Temperature of the body taken from the mouth the same as that of the surrounding air in the room, 62° Fahrenheit.
4. A bright needle plunged into the body of the biceps muscle (Cloquet's needle test) and left there, shows on withdrawal no sign of oxidation.
5. Intermittent shocks of electricity at different tensions passed into various muscles give no indication whatever of irritability.
6. The fillet test applied to the veins of the arms (Richardson's test) causes no filling of the veins on the distal side of the fillet.
7. The opening of a vein to ascertain whether the blood has undergone coagulation shows that the blood was still fluid.
8. The subcutaneous injection of ammonia (Monte Verde's test) causes the dirty brown stain indicative of dissolution.
9. On making careful movements of the joints of the extremities of the lower jaw and of the occipito-frontalis, rigor mortis is found in several parts.
"Thus of these nine tests, eight distinctly declared that death was absolute, the exception, the fluidity of the blood, being a phenomenon quite compatible with blood preternaturally fluid and at a low temperature even though death had occurred.
"10. There now remained the diaphanous test, which we carried out by the aid of a powerful reflector lamp yielding an excellent and penetrating light. To our surprise the scarlet line of light between the fingers was as distinct as it was in our own hands subjected to the same experiment. The mass of evidence was of course distinctly to the effect that death was complete; but to make assurance doubly sure we had the temperature of the room raised and the body carefully watched until signs of decomposition had set in. I made a visit myself on the succeeding day to assure myself of this fact.

The results of these experimental tests were satisfactory as following and corroborating each other in nine out of ten different lines of procedure; but the point of my paper is to show the utter inadequacy of the diaphanous test upon which some are inclined entirely to rely. Sir Benjamin Richardson has reported an instance in which the test applied to the hand of a lady who had simply fainted gave no evidence of the red line; she therefore, on that test alone, might have been declared dead. In my case the reverse was presented; the body was dead while the red line, supposed to indicate life, was perfectly visible. Hence the test might possibly lead to a double error and ought never of itself to be relied upon.

There are several other tests which have been applied in such cases which Sir Richardson did not use. One of these is to tie a string tightly around the finger of the supposed corpse. If life is extinct the finger will not change its color and nothing new will be visible. If, however, there is still circulation, even though imperceptible, the end of the finger will become red and slightly swollen.

Another test is to apply leeches to the body. It is held by the advocates of this test that leeches will not draw blood from a corpse, but will quickly release their hold. Still another test is to produce a blister by means of heat. If the person is alive, the blister will be filled with water; if death has occurred it will contain only air.

But all these tests enumerated have in some way or other fallen short of the requirements of medical science, and physicians are still searching for a satisfactory one.

FACTS IN NATURAL HISTORY.

Some Marvelous Features of Animal and Insect Life.

An adder was found alive in the centre of a block of marble thirty feet in diameter in June, 1772. It was folded nine times round in a spiral line; it was incapable of supporting air, and died a few minutes after. Upon examining the stone, not the smallest trace was to be found by which it could have glided in.

Mission in his travels through Italy, mentions a cray-fish that was found alive in the midst of a mass of marble in the environs of Tivoli. The King's physician at Guadalupe, having ordered a pit to be dug at the back of his house, was told by the workmen that live frogs were found by them in beds of petrification. Suspecting some deceit, he descended into the pit, dug the bed of rock and petrifications, and drew out green frogs, which were alive and exactly similar to what we see every day.

Serpents are said to obey the voice of their master.

The trumpet bird of America follows its owner like a spaniel, and the Jacana acts as a guide and guard to poultry, protecting them in the field all day from birds of prey, and escorting them home at night.

In the Shetland Isles there is a gull which defends the flock from eagles; it is therefore regarded as the privileged bird. The chamois, bounding over the mountain, are indebted for their safety in no small degree to a species of pheasants. The bird acts as the sentinel; for, as soon as it gets sight of man, it whistles, upon which the chamois, knowing the hunters to be near, set off at full speed.

The artifices which patridges and plovers employ to delude their enemies from the nest of their young may be referred to as a case in point, as well as the adroit contrivances of the hind for the preservation of her young; for when she hears the sound of dogs, she puts herself in the way of the hunter, and starts in a direction to draw them away from her fawns.

Instances of the effect of grief upon animals are no less remarkable. Dogs have died of sorrow at the loss of their master, and a bullfinch is known to have abstained from singing ten entire months, on account of the absence of its mistress.

In the city of London early in the fifteenth century householders of the better class were bound to hang a lantern lighted with a fresh and whole candle outside their houses in the winter months. It was not until October, 1735, that the Common Council resolved to light the City from sunset to sunrise throughout the year.

AN ART THAT IS DYING.

The Painting of Watch Dials When Done by Special Artists.

If the reader will kindly look at his watch for a moment he will undoubtedly be surprised and interested to learn that every hour, minute, figure, and even the tiny letters of the name upon the dial, are entirely painted by hand with an ordinary camel-hair brush. It is the belief of nine hundred and ninety-nine people out of every thousand that the figures are produced as easily as the letters upon the modest handbill. This is a totally erroneous idea, as the dial is simply a thin piece of enamel, and the lead type of the printing machine would splinter it to atoms. Rubber type might be used; in fact, it is used in America for the commonest of work; but the figures are printed so coarse and ugly, that it used here for ordinary work, the West-end watch manufacturer's hair would turn grey with horror.

Enamel watch-dial painting might almost be ranked with the art of miniature painting. True, the anatomical knowledge required by the miniature portrait painter is not wanted by the dial painter; but, on the other hand, he requires a thorough knowledge of drawing, whilst his work has to be characterized with extraordinary exactitude and truth. The deviation of a minute but a hair's-breadth either way, or a curve not correctly formed, brings down the manufacturer's wrath upon the luckless painter's head. The brushes used for this delicate work are scarcely as large as those used by the "artist" who adorns the front of one's house. A very good idea of their size can be given by the fact that the common brass pin is a shade thicker than the dial painter's brushes.

Perhaps the most important qualification is an abnormally steady hand. To the dial painter, midnight carousals must be things unknown, otherwise his work suffers alarmingly. There is a legend treasured by the profession about the old painters, who, after going out of an evening to—well, some dissolving views, and returning home somewhat unsteady in the small hours of the morning, and also experiencing great difficulty in finding the keyholes of their respective domiciles, would, when the time came round, resume work as though nothing had happened. But they were the Hercules and Achilles of a bygone age. Now, alas, the dial painter has degenerated into a staid and respectable citizen.

The amount of work in the painting of a dial will be safe to say, come as a surprise to nearly everybody. The painter commences operations upon a perfect clear white dial, by dividing it into sixty divisions with the aid of a delicately-adjusted machine. Presuming it is a dial with Roman numerals he is going to paint, he proceeds to draw an oblong patch of paint at every fifth division.

Then with a pointed stick of ivory he cuts the numerals out of the patch, and cleans away the superfluous paint with a stick of soft dogwood, leaving only the thick stroke of the hours. After this, he takes a pair of geometrical compasses, to one point of which was attached a very delicate brush, and, working from the centre hole of the dial (where the hands are afterwards inserted), proceeds to run the faint lines at the end numerals, and also the circles. Then, taking another brush, he draws the fine lines of the numerals, five to twelve, inclusive; and following on with a brush a shade thicker, but still not so thick as a pin, paints in the minutes between the circles, one stroke upon the sixty divisions which he had previously marked. A few more finishing touches here and there, and the work is complete.

If, on the other hand, it is a dial with Arabic figures, a name, or perchance a landscape or floral wreath, it has to be painted in direct with various brushes, no previous blackhead sketch being possible, as the space is so limited. The writer remembers some faddist thinking it would improve his watch if he had a country church with the green fields beyond painted upon the dial. So accordingly it had to be done in the small space between the centre hole and the twelve o'clock. It will be seen by this that the watch-dial painter's work is more artistic than many people believe, and that he would not be very presumptuous if he called himself an artist.

As a fitting termination to this article it might be pointed out that he occupies a really unique position, for in the whole vast City of London there are but six enamel watch-dial painters. There are no apprentices, and not the remotest possibility of any being taken; therefore in a few years the art, in London at any rate, must become extinct. In Liverpool there are about the same number, again no apprentices; and in Coventry from twelve to fifteen, with about four apprentices. There you have the full complement of dial painters in the whole of Great Britain, for in no other city are they to be found. This being so, an additional interest is lent to the art of dial painting, an interest tinged with sorrow and regret; regret for an art which is slowly and unmistakably dying.

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