

A DIVER'S EXPERIENCE.

MORMENTOUS MOMENTS IN A MAN'S LIFE UNDER WATER.

Calmness, Presence of Mind and Promptness Very Necessary in Their Peculiar Work—The Many Dangers to Which They are Exposed to While Under Water.

A diver lays himself open to many dangers in the carrying out of his peculiar work; although the most serious are probably not those generally regarded as such in popular estimation. The strange adventures one reads of now and again as having been met with under water have the colour, as a rule, so thickly laid on that a very strong measure of doubt is apt to creep in as to whether they are true or not. I will not say that in tropical waters a diver may not occasionally have run across a fierce or strange inhabitant—shark, devil-fish, or what not—and been rescued from determined attack at the last extremity by means as unexpected as the appearance of the enemy itself; but I must confess that I would believe the more readily if I heard the account from the lips of the man who had had the experience. I have worked myself in many parts of the world, occasionally under unusual circumstances, and have been in danger several times; but it has always been of a far more prosaic type than any such as those referred to. In laying courses of masonry, for instance, under water, in connection with the harbour works at P—, I had my foot and leg badly crushed by the fall of a large block of granite through the snapping of clip holding one end in the process of lowering. Fortunately it was a glancing blow, and the stone, striking against the top of the foundation already laid, fell into deep water alongside. Had it caught my foot squarely and held me fast there would probably have been one diver the less in the country, for I was the only one at work on the job. As it was, I only just managed to send up the signal to be raised before fainting from the pain, when I came to myself I was on the staging erected over the work with helmet off, and my helpers dashing water over my face. For an accident, decidedly a lucky one, although it meant a subsequent six weeks in bed.

One great diving danger in popular estimation—and naturally enough on the face of it—is that from a breakage of the air-pipe, and the consequent overwhelming and fatal rush of water into the helmet and dress. But nothing of the kind would happen; for the inlet-valve in the headpiece is so constructed that, were the pipe accidentally broken, the valve would immediately close and prevent any water getting in. The worker might get smothered from lack of air; but if working 'free'—that is, with open water above—he would have an ample supply to last him till he got above the surface, provided he promptly signalled to be raised, which is needless to presume he would do. Were he working in a sunken vessel matters would, of course, be complicated, and on the wrong side; but such great care is exercised in turning out first-rate apparatus that the risk of anything breaking is comparatively remote. A far more serious one, more likely to happen, and quite independent of excellence of material and workmanship, is that of the entanglement and choking of the pipe; and the closest shave I ever had was due to this very cause. Something had gone wrong with the big inner doors, or gates, between B—Dock and the lock opening into it, and I was engaged to see what was amiss, and to right it. The doors are necessarily heavy, massive structures, weighing many tones apiece; for, working in halves from each side, and meeting in the centre of the lock, they have kept back the weight of the dock-water in the process of letting a vessel in or out—how strong and heavy can be judged from the fact that when closed they are broad enough to form the familiar foot-bridges so commonly used in crossing narrow waterways about all docks. Upon examination I had found that the reason for their not making a sufficiently tight fit of it when closed was that a band of iron at the bottom of one had got torn from its fastenings and this defective band I had been for some days, or during such portions as my work was practicable, engaged in removing, and replacing with a fresh one.

The work being upon the point of completion I wished to see—or feel rather, for seeing was decidedly out of the question with over twenty feet of dirty dock-water between one and the light—how it stood the test of the ordinary closing; and I had arranged a signal before descending upon this particular occasion to have the doors closed when I was below. When ready I sent up the agreed-upon signal, and in a few moments felt the gate upon which my hand rested begin to slowly move. I was not long, however, in realizing that I had made a serious mistake; for as soon as the huge masses were in motion I

was gently lifted off my feet by the swirl of water produced in the narrow lock—the easiest of matters it is to upset a diver's balance under water, in spite of the heavy weights he carries—and irresistibly sucked towards their meeting-point. I made desperate efforts, by clutching at and pressing against the gate surface, to prevent being carried between; for, caught there, I would certainly be crushed to death. Failing, however, to get a fair grip at anything, I was drawn into the now rapidly narrowing gap, and, luckily, through; but it was so close a matter that I distinctly felt a leg knock against each gate-end as I passed between. Once on the other side I was immediately pulled up by the lifeline or air-pipe tightening against the end of one of the gates, and was just congratulating myself upon my narrow escape, when it suddenly flashed across my mind that the pipe was still between the closing masses at my side. A death hardly less horrible after all, and more long drawn out, than the one I had barely escaped; for, with the pipe crushed flat, when the meeting came, I would be held a prisoner until smothered from lack of air. Had I a knife I might have cut line and pipe, slipped off my weights, and trusted to a chance of a shoot upward. But as the work required no use of a knife, I had not one with me. I had, however, what proved better, in a hammer slung to my wrist by a lanyard tied to the handle, and a lucky inspiration as well as to using it; for instinctively gripping this, I thrust it between the now almost meeting gate-ends. In the very nick of time, too, for almost immediately I felt them jar upon it; and as at the same time there was no stoppage nor diminution of the inward rush of air into the helmet, I knew that the hammer-head had taken the strain, and saved my frail connection with the living world above. Before I had made up my mind what to do next—it, indeed, I could do anything—I felt the hammer loosen in its position—I had taken care not to let go the handle—and the gates began to open again. As they opened I was again carried through by the current, now set up in the contrary direction, to the side I was originally on, and the right one for me, when, after being floated back beyond the immediate flow of water, and regaining something of a steadier position, I hurriedly sent up the signal to be hauled up, and was soon thankfully at the surface and in the punt. My men, I learnt a little later, fearing something to be wrong from the movements of the pipe and line, though they failed to guess the immediate danger, had called to stop the gates closing, but, on the lower level of the water, had failed to attract in time the attention of the dockman at the handle, placed well back from the edge of the quay, that set the hydraulic machinery in motion. For greater convenience I had also been working with the

gates but a third open, which still further cut into important disposable time. Upon thinking the matter out afterwards, I saw I might possibly have signalled to be hauled up, when I just lifted off my feet, but I was then exclusively bent upon fending myself off with both hands in the turmoil from the impending crush. Most fortunate of all, perhaps, it was that my attendants had not obeyed a natural impulse to haul me up, for had they done so it would in all probability have meant my being drawn back into the crush I had so narrowly escaped.

NEW STARS NOT VERY COMMON.

A Woman's Share of Those Discovered in the Past Thirty-Nine Years.

It appears that the star which has just been discovered by Mrs. Fleming, the curator of the astronomical photographs at the Harvard Observatory, would have been found much earlier if it had not been for the Spanish war. The photographic plates on which Mrs. Fleming found the star were made in last March and April at the Harvard Observatory at Arequipa, Peru. These plates had been long in transit from the distant observatory, and but for the war might have been received and examined and the presence of the new star discovered some six months earlier. Last April, when the plates were shipped from Peru, there was much doubt in the public mind as to the safety of goods coming from South America, through or from Spanish countries, and Prof. Pickering, director of the Harvard Observatory, ordered the shipment of these plates sent about that time from the Peru observatory to be made around the Horn. This delayed their arrival, and consequently the discovery of the star, about six months.

Much importance is attached by astronomers to the discovery of a new star. In the seventeenth century fifteen new stars were discovered, but from 1670 to 1848 not another new star was found. From 1860 to 1892, inclusive, nine new stars have been discovered, of which number Mrs. Fleming discovered four. Her discovery of this week makes the fifth star she has found, or one-half of the new stars discovered since 1890, or since photography and improved telescopes brought astronomy to its present high plane. Mrs. Fleming discovered her first star in 1887 on a Harvard plate which had come to her for examination. The next star was discovered in 1891 by a Scotch clergyman, who thought so little of his discovery that he notified the astronomers at Edinburgh of it anonymously, and was surprised when he learned that they knew nothing of the star. A close examination of the Harvard plates by Mrs. Fleming showed that this star was present in them, and would doubtless have been discovered by her had the plate not



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been imperfect. All other stars found since that date, four in number, including the latest one, were first seen by Mrs. Fleming.

Whether this latest discovery will merge into a nebula is a question of the highest interest to the Harvard astronomers, and undoubtedly to others, for the whole astronomical world knows, through a telegraphic bulletin sent out yesterday by Prof. Pickering, of the discovery of Mrs. Fleming.

So complete are the Harvard photographic records of the heavens that within a few hours after the discovery of the star in the plate from Peru Mrs. Fleming was able to state authoritatively that the star had never been visible, in modern times at least, prior to 1898, for the plates of ten years before its discovery, do not show it, though they show stars as faint as the fifteenth magnitude. The Harvard astronomers in Cambridge and Arequipa photograph the entire heavens every year, making a complete record of them, and some sections are photographed many times over. Nothing escapes their powerful telescopes and photographic lenses, and the record of their work is the most complete in the world.—Boston Transcript.

DUST SHAKEN FROM WINDOWS.

Eye Trouble Caused Frequently by Particles From Mats and Brooms.

Complaints are now being made that the dust from articles shaken out of windows, such as brooms and mats, have as had an effect on the eyes as the breathing of city dust has on the lungs. Cases are cropping up where people suddenly have outbreaks of styes on their eyelids who never suffered from them before, and others suffer from what is known as granulation, by which the eyes feel as if they were constantly full of irritating particles, having had no previous trouble with their eyes that they can remember. There is a growing belief that this is largely due to particles of organic matter dried into dust getting into the eye from the shaking of mats, or from dust containing such particles being blown into the eyes from some other cause, such as the dust in a store being swept into the street.

The Divine Art Offer.

The 'divine art' has been coupled with entertaining and instructive literature in a new magazine called 'Music, Song, and Story.' It provides fine reading of both timely and permanent interest and is illustrated with the most beautiful half-tone pictures. The music is, however, the most striking feature of this magazine. There are 19 pages (sheet music size) of lithographed vocal and instrumental music of the most tuneful kinds, all new copyright pieces never before published. It published as separate sheet-music the prices would aggregate \$3. The magazine is issued monthly at 10 cents a copy or \$1. a year. The publisher is S. W. Simpson, 70 Fifth Avenue, New York.

Astounding Electrical Experiment.

Tesla, when he lectured at the Royal Institution, London, caused a vibratory current of electricity of enormous power to pass through his body. An ordinary current of the same voltage would have killed him instantly. The experiment astonished his audience and the gentlemen of the Press, at least those who were unacquainted with the more harmless character of such currents. He himself recently told an interviewer that, although he was aware from experiment and calculation that such a current ought not to kill him, nevertheless he hesitated before actually trying it. Tesla's soliloquy, 'To be or not to be?' ended differently from Hamlet's. The resolute Montenegrin decided to risk it, and after making his will, taking a silent farewell of his sister, and so forth, he put himself in circuit of the current, by way of rehearsal for his lectures. The powerful current traversed his body without causing him the least annoyance, and lit an electric lamp held in one hand.

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