WHIRLPOOLS and WATERSPOUTS

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WHAT is a whirlpool? It is a circular current in a river or sea, produced by opposing tides, winds or currents. If you want to see a miniature whirlpool, fill your bath-tub to the depth of an inch, pull out the plug and watch the water running out. First there is a streakiness in the water, then a dimple, gradually growing deeper, until at last there is a funnel leading down to the grating with not a drop of water in it. The eddy always revolves one way—from left to right—and on all occasions it begins a few inches from over the waste-pipe, and is slowly drawn toward it until the funnel is vertical.

Now, this is a very fair sample of what goes on in rivers and seas. The water runs into a narrowing channel, and is shouldered off from the sides, as the space through which it runs contracts; and it increases in speed. When the channel widens, the current continues in the centre, and there is slackwater under the shelter of the slight projection.

The stream that has been narrow is higher than that in the broadened river, and the dead water is sucked toward it and spun round into a whirlpool.

This is of whirlpools in general, which are of rare occurrence on a large scale. The two most famous of the world's whirlpools are, however, due to other causes than those just described.

On the west coast of South Italy, a rocky cape juts out boldly into the sea, so as to form a small peninsula at the northern entrance to the Straits of Messina. This rock, according to the Homeric legend, was the abode of a monsher called Scylla.

To encounter Scylla was to double this cape, which in the early days of navigation was a dangerous proceeding, but at the present day is attended with no more risk than the doubling of any ordinary cape.

In the Straits of Messina, nearly opposite to the entrance to the harbor of Messina, in Sicily, is Charybdis. Here, according to Homer, was another monster, who thrice every day sucked down the water of the sea and thrice threw it up again.

In reality, Charybdis is a whirlpool, caused by the wind acting obliquely on the swift current which sets toward the lighthouse from the north during six hours, and from the south during the next six hours, and so on alternately.

When the wind is high, the swelling of the waves is such that small vessels driven within the limits of the agitation may be sunk by the waves breaking over them, and large ones may be driven back on to the Italian shore and end their days on the rock of Scylla.

The maelstrom is the celebrated whirlpool of the world. Everybody has heard of it and shuddered over its destructive power. The tremendous current that rushes between the great West Fjord and the outer ocean through the channels between the Loffoden Isles, creates many dangerous currents, but they are not to be compared with the famous maelstrom, which is due to the battle between wind and tide. When wind meets tide between the islands of Mosker and Warae, the water is lashed up to such an extent as to be heard for miles.

Language cannot depict the maelstrom in its fury. At high and low water, when the wind blows directly against the current, the sea for several miles around is so violently agitated that no boat can live in it for a moment. Even fish are killed and thrown ashore by its fury. But in ordinary circumstances it may be traversed, even across the centre, without danger or apprehension.

Whirlpools in the United States are numerous in the lakes and rivers, but there is only one of any prominence, and that, without doubt, is the most terrible in the world.

After the Niagara River descends over the rocks and forms the Falls of Niagara, it broadens and becomes comparatively smooth; then again it rapidly increases in swiftness. Between three and four miles below the falls a stratum of rock runs across the direct course of the river. Encountering this obstacle, the river is forced back upon itself, and in course of time has churned out a vast circular basin, into which the water circles until it is forced away at right angles to its old channel.

This is the great whirlpool of Niagara, and it has never been navigated successful but once. Captain Webb, the great English swimmer, lost his life in July, 1883, trying to swim through it. Since then, several adventurous swimmers, encased in barrels and other apparatus, claim to have accomplished the feat, but there are grave doubts as to their truth. But it is certainly true that three men took a steamer through the whirlpool, and the story of the feat makes a thrilling tale.

In 1861, the owner of the Maid of the Mist, a steamer 72 feet long, 17 feet breadth of beam and 8 feet depth of hold, and carrying an engine of 100-horse power, sold her to parties, in Niagara, on condition that he should deliver her opposite the fort. To do this it would be necessary to take her through the rapids and the whirlpool, and three daring men were found who were willing to take the fearful risk.

Mr. Robinson agreed to act as pilot, a courageous machinist, named McIntyre, agreed to accompany him, and Mr. Jones consented to act as engineer and fireman. The boat was put in complete trim, removing from her deck and hold all superfluous articles.

Notice was given of the time for starting, and a large number of people assembled to see the fearful plunge, no one expecting to see either boat or crew again after they should leave the dock just above the suspension bridge.

About three o'clock in the afternoon of June 15, 1861, the engineer took his place in the hold, while McIntyre joined Robinson at the wheel on the upper deck. Robinson pulled the starting-bell, and with a shriek from her whistle, the boat ran up the eddy a short distance, then swung around to the right, cleared the smooth water and shot like an arrow into the rapid under the bridge.

WHIRLPOOL AT NIAGARA.

She took the outside curve of the rapid, and when a third of the way down it a jet of water struck against her rudder, a column dashed up under her starboard side, keeled her over, carried away her smoke-stack, started her overhang on that side, threw Robinson flat on his back and thrust McIntyre against the starboard wheelhouse with such force as to break it through.

Every eye was fixed, every tongue was silent and every spectator breathed freer as the boat shook her wounded sides, slid into the whirlpool and for a moment rode on an even keel.

Robinson rose at once, seized the wheel, guided the steamer to the right of the large pot in the pool, then turned her directly through the neck of it. Thence, after receiving another drenching, she dashed on without further accident to the quiet bosom of the river below Lewiston, thus completing the most fearful voyage ever undertaken by man.

Whirlwinds are also caused by opposing currents—but of air, not water. They differ in many respects from storms or cyclones; they seldom continue longer than a minute at any one place, they are limited in extent and their presence does not affect the barometer. Whirlwinds, unlike whirlpools, revolve either way, according to the direction of the stronger of the two winds which give rise to the phenomenon.

Whirlwinds may occur anywhere and at any time, in the desert of Sahara or on an Alpine plain. Mr. Duhamel, of the French Alpine Club, has been fortunate enough to see fifteen whirlwinds, some of them taking up dust, some of them snow.

In his experience the sand-spout or snow-spout always feathers off in a plume. All the spouts have had a movement of translation, and seemed to have spun from left to right. Once or twice Dr. Duhamel has placed himself in the centre of one of these dust-spouts, and has felt the ascending movement which is so clearly proved by the rising particles.

Between Gieres and Grenoble he once met a spout and ran through it twice on his tricycle, but he did not succeed in breaking it, and it did him no damage.

In the Alps small snow-spouts are of constant occurrence, and in them the spirally ascensional movement is very marked. They are always found where opposing currents of air are likely to meet, and their cause is evidently identical with that of the whirlwind

A gentleman of Geneva saw a very peculiar whirlwind. He was passing a place where a lot of clothes were laid out to dry, when suddenly a whirlwind two or three yards in diameter, and rendered visible, as usual, by the revolving dust-cloud, came along the road, caught up the dry clothes, and whirled them up spirally for some 1800 feet in the air, when it scattered them off in all directions. Had there been no linen, the spout would have apparently ended a hundred yards from the ground. No doubt there are many such whirlwinds, but they can only be seen when dust or other light matter is in the track to be caught up.

Humboldt mentions such tiny whirlwinds as common on the Llanos of South America. Stephenson has described the same phenomenon in Behar, though, on one occasion, he was fortunate enough to notice two large columns of dust, more than twelve feet in diameter, with their summits lost in cloudland, gliding majestically across the plain.

Bruce tells us how he saw as many as eleven pillars of sand at a time, moving parallel to him about three miles off, and occasionally advancing in line as if they would overwhelm the caravan.

That caravans have been overwhelmed there is no doubt, and a single whirlwind might do great damage. In Mexico, Captain Lyons saw twenty sand-spouts at a time, many of them more than three hundred feet high.

Extensive fires, such as the burning of prairies and volcanic eruptions, sometimes cause whirlwinds by the conflicting currents of heated air they occasion.

When a whirlwind occurs on the sea or on the lakes it causes a waterspout. When fully formed, they appear as tall pillars of cloud stretching from the sea to the sky, whirling around their axes and exhibiting the progressive movement of the whole mass precisely as in the case of the dust whirlwind.

The sea at the base of the whirling vortices is thrown into the most violent commotion, resembling the surface of water in violent ebullition. It is a popular fallacy that the water of the sea is sucked up in a solid mass by waterspouts, it being only the spray from the broken waves which is carried up.

What are called waterspouts on land are not waterspouts at all. They are merely heavy falls of rain, of a local character, and are now generally known as "cloud-bursts."

Whirlpools are often harmles enough. Instances there are by the dozen of slips and boats passing through the troubled waters unharmed. And as we have seen tricyclists riding unharmed through a sandspout, so have we many instances of ships going deliberately through its ocean prototype.

Horsburgh, whose observations on the subject are the most important we have, put his ship through several, after specially preparing her, of course. On the other hand, cases are on record where a waterspout has simply twisted off every bit of spar, canvas, rigging and fixing a ship has had, and left her with a bare deck.

From Horsburgh and the observers that have followed him we find that when a waterspout begins, a cone is seen to descend from a cloud like a trumpet with the small end downward. At the same time the surface of the sea beneath it ascends a little in the form of steam or white vapor, and from the centre of this rises a small cone which unites with the descending cone and completes the column. In the middle of the spout is a white, transparent tube or column, which looks as if made of ascending water.

A circular motion is given to the surface of the sea round the spout, in which the waves break and run in a whirlpool at a rate of from two to five knots an hour.

This whirlpool is beneath a revolving shower of water beaten into fine particles, and smoking and hissing as it spirally spins; but, strangely enough, in the centre of the whirlpool is a vacuum in which no particles ascend; and in this untroubled space, as well as on the outer edge of the vortex, rain falls in large drops. In calm weather this central cone is vertical, but sometimes it slants away from the wind.

Sometimes a waterspout forms and vanishes in a few seconds; sometimes it will move like a sandspout over long distances; sometimes, but not always, it can be broken by firing a shot into it, or by meeting with some obstacle.

A ship under bare poles is said to be quite safe in any waterspout, but the least spread of square canvas may afford such resistance that the masts may be torn out of her. For this reason a ship is generally put under fore and aft sail when waterspouts are sighted.

There have been cases when these thin, semi-transparent columns have whipped off the jib-boom of a vessel and sent it flying higher than the mast-head. And sometimes a waterspout has passed along a coast, and touching trees within reach, has stripped them of leaves and torn them up by the roots.

And other things besides leaves and jib-booms are whirled aloft. Showers of fish are common affairs, and once there was a shower of eels in New York. There have been showers of herring, of salmon fry, of crabs, and even of frogs and snakes.

We owe these peculiar rains to the waterspouts, which have whirled these creatures from their native element and whirled from to the ground again.

TILLORY'S CLAIM

CONTINUED FROM PRECEDING PAGE

"What does this mean?" asked the stranger, coming out of the door at that moment.

"What does it mean?" Tillory repeated, loosing his grip on Rob. "What business is it of yours? Who are you, anyway?"

For an instant the stranger searchingly surveyed the speaker and the horse he rode. Then he took a pair of handcuffs from his pocket, and said, as he put them on the wrists of the unresisting and astonished man:

"I am the Sheriff of this county, and you are Joseph Grim. You are wanted for stealing that horse in Cass county. You will go along with me. And now," continued the stranger, addressing Rob and George, who had dragged himself from his bunk to the door, "I heard this talk a minute ago, and I understand the situation. This man here," and the Sheriff cast a glance at the pale and trembling Fisher, "I know to be a claim jumper, and you can make it warm for him for this offense, for I happen to know that he filed on this claim in the name of Tillory, while there never was such a man in this county. He is also apt to get into trouble for representing this man to be somebody else. That is all. Now, boys, I'll take breakfast with you and go, and I think you can hereafter live on your claim in peace."

And so they did. Fisher deserted his confederate, who was punished for the crime for which he was arrested, and left the county.

The one hundred and sixty acres that caused all the trouble is but a small portion of the present possessions of George and Robert Shaw, and to distinguish it from the rest, they call it "Tillory's Claim."

Devotion to Duty

When the buried city of Pompeii was exhumed a soldier was found, standing at his post. He had probably been forgotten, and he had met his death a victim to his strict sense of discipline. The Czar of Russia has recently decorated a private soldier who proved himself a worthy companion to the historic Roman sentinel.

When a recent earthquake destroyed a small Russian town in Central Asia, this soldier was on duty at the military treasury. Although the houses were crashing around him, he stood motionless, awaiting death. Fortunately, a sergeant saw him and the ruins, and instantly ordered him to quit his post. Perhaps such devotion verges on foolishness, but we cannot help but admire it.

INNOCENT SOLILOQUY.

"I's goin' right straight home to de s'clusion ob me mammy. Dere's a chicken missin', an' dey'll 'ouse me, jest cos I's a colored pusson."

BETTER LATE THAN NEVER.

First Boy—"Help me out!"
Second Boy—"That's what you got for skating on Sunday!"
First Boy—"I didn't remember it was Sunday till after I got in."

Farming in Spain

There are some people quite content to always do things in the same old way, and some nations also. In Spain, farming is conducted in a very primitive way. Grain is cut with a small reaping hook and threshed as in the time of the Caesars—that is, by tramping about with asses hitched to a stoneboat. The plow is a crooked stick, pointed with iron. In the towns are to be seen heavy wooden carts drawn by oxen. Most of the carrying is done by donkeys. Sand, brick, lumber—in fact, almost everything that has to be moved—is carried on their backs. These animals are used all through Spain in the same way in which we use them in the almost impassable canyons of the Rocky Mountains.