

# ASTONISHING POWER OF RUNNING WATER

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THE power of running water to remove sand, gravel and pebbles increases in a remarkable degree with the increase in velocity, so that mining engineers can make accurate calculations concerning the velocity which is necessary to remove stones of a certain size from their sluiceways. The transporting power increases 64 times with each doubling of the velocity; so that if you increase the velocity threefold you have increased the transporting power of the water 729 times and if you quadruple it you have increased the weight of the pebble which it would move 4,096 times. This at first thought seems incredible, but it is nevertheless true, and prepares us to appreciate the astonishing results that are produced by running water.

Water moving three feet in a second, or a mile in six hours, will carry along with it particles of fine clay and keep them in suspension. Water moving at twice that velocity will lift and carry along with it fine sand; while a velocity four times as great will sweep along fine gravel and water moving at the rate of two miles an hour will carry along stones as big as a hen's egg. There is hardly any limit to the size of a pebble that would be rolled along by a current of six or eight miles an hour, blocks as big as houses being sometimes set in motion and transported for considerable distances.

In various ways one can obtain positive evidence of this power of water transportation. If, for instance, he attempts to wade across the Platte river in Nebraska, which is overloaded with sand and has a gradient of seven or eight feet to the mile, and hence a very rapid current, he will find his bare legs stung by the particles of sand and fine gravel that are driven against them. Or if after a storm one pauses to listen he will hear what sounds like distant cannonading, produced by the knocking of the stones together as they are rolled along upon the bottom of the stream.

The erosive power of a stream flowing over a rocky bed is determined by its ability to shove along sand and pebbles and gravel over its bottom. It is these particles of solid matter that accomplish the erosion, acting as a rasp, or sandpaper, or more properly a sand blast, to remove the solid rock beneath and deepen the channel of a stream. In order to do this, however, there has to be proper adjustment between the supply of loose solid matter to be transported and the volume and velocity of the water. If there is more sand and gravel than the current can handle, this will accumulate upon the bottom and fill up rather than deepen the bed. If there is too little material the stream will flow over the rocks without effecting much erosion, while if there is just the right amount of solid matter to be shoved along it will deepen the channel with great rapidity.

There are many striking examples of the work which has been accomplished by rivers in deepening and widening their channels. We look upon the rise of mountain chains as being most majestic illustrations of the power of natural forces, but the fact is equally impressive that in many cases rivers which run across the line of mountain elevation are able to wear down their channels as fast as the mountains rise and thus maintain their ancient onward course. The Hudson river has thus saved down a channel through the solid rocks which in ancient geologic times arose across its course at West Point and below, all that picturesque valley of the Hudson over a valley of erosion. The Delaware river has worn an even more striking gorge through the Blue Ridge at the Delaware Water Gap, where it cuts directly across the very hard strata of Medina sandstone constituting Blue Ridge, forming perpendicular walls on either side 1,000 feet in height. Similar gorges are found in the Susquehanna and Potomac and many other rivers along the Appalachian chain just above where they emerge upon the surrounding lowland. We often speak of such rivers as "bursting" through their barrier. But there was no bursting in the operation. These gorges were cut by the slow process which we have described, the rivers lowering their channels gradually as the mountains slowly rose across them.

Among the most striking examples of rivers which have by erosion kept pace with the elevation of mountains across their course is that of the Columbia river, in Oregon, where for a long distance it occupies a trough running directly through the mountain chain thousands of feet in depth. Another very striking instance is that to be seen in the Amur river where it crosses the Bureya mountains in eastern Siberia. For nearly 100 miles

the stream crosses this range with a gradient that is continuous with that of the vast prairie regions above and below. The Yenisei river has cut a similar gorge across the granite mountain chain which rose up to separate the fertile plains of Minusinsk from the vaster plains of northern Siberia.

Coming to our own country, we have in addition to the streams already mentioned, gorges and canons on a most impressive scale in the upper part of the Susquehanna river, where the east branch cuts across the Allegheny mountains south of the state of New York, and forms the beautiful Wyoming valley, which is wholly one of erosion. The west branch has likewise cut a gorge of equal dimensions 50 miles or more in length west of Williamsport, which is fully 1,000 feet in depth, as one can see by the fact that here the coal mines on either side are that distance above the bed of the stream and of the railroad track. Coming to the



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other side of the Allegheny mountains, one strikes into the various branches of the Ohio river and finds himself in a trench several hundred feet below the general level of the land, and extending for more than 1,000 miles in length until the river emerges into the center of the Mississippi valley. The upper part of the Mississippi occupies a similar gorge for a still greater distance. Everywhere along this portion of their course on ascending either side of the rivers to the summit, one will find himself upon a vast plain, extending off in either direction, whose main superficial irregularities are those which have been produced by the erosion of the countless smaller streams which joined together make the great rivers.

## Matchmaking of Japanese

Mr. Orio Tamura, as we will call our young gentleman, is about twenty years old, an article in the Wide World says. He is an up-to-date Japanese, and has put off all thoughts of matrimony until this comparatively late date—for Japan—in order to finish his university studies. Now, however, he has finished his training, and has intimated to his father, as a dutiful son should, that he would like to marry. That is all he is required to do, at present; it is the business of his parents to take the next step.

Orio's father, presumably, has some quiet talks with his wife on the subject, and then betakes himself to a professional matchmaker, or go-between. These marriage brokers are a class apart—discreet men of the world, with a good deal of insight into human nature. For the sake of his own reputation and future the go-between usually does his best to please all parties.

Sometimes, in the east as in the west, love laughs at restraints, and somebody or other conveys a hint to the marriage broker that a meeting between Mr. A— and Miss Z— might not be unacceptable to both; in which case the task is easy. Usually, however, he takes time to look around him, and he in turn—how indispensable the ladies are in these

matters—consults his wife. At last, carefully considering the official and social position of the persons and families interested, he suggests that a certain Miss Chrysanthemum would make a most desirable bride for the "learned son of the honorable house of Tamura."

Once more Orio's father consults his wife and sundry other relations, and, having no fault to find with the go-between's suggestion, instructs the latter to proceed. The marriage broker's next step is to approach the parents of the young lady he has in view and arrange a formal appointment for mutual inspection—it is known as the "look-at-each-other meeting"—between the prospective bride and bridegroom at the house of the bride's father, and in the presence of that gentleman and the go-between himself.

The meeting usually takes the form of a conventional tea party, at which the prospective bride does the honors. It is perhaps unnecessary to add that she does not wear the oldest clothes on this occasion. Here, for the first time in their lives, the young lady and Orio set eyes on each other. Etiquette forbids them to speak to each other, but nevertheless they are doubtless very busy taking "stock" of the other's appearance and manners.

## Fate of a Merchant of Fez

The merchants of Fez are to be found all over Morocco. In due course All Mahmoud launches out into business on a large scale, says the London Graphic. He prospers exceedingly and presently purchases a black female slave to assist his wife in her duties. All Mahmoud takes a house in the pleasant olive groves. In course of time he buys two more slaves and is fairly set up as a householder.

When his first daughter is born there is great rejoicing. The baby is immediately stained all over its little body with henna and then smeared liberally with butter and wrapped in woolen clothes. On the seventh day these are removed and the child is washed for the first time. When the girl has reached her first year her head is shaved, leaving a little tuft by which Mohammed could catch her up to heaven if he were so disposed. In her seventh year her hair has grown long again. She is then veiled, and her proud father sets about looking for a husband for her. It is still the custom to betroth children from infancy.

All Mahmoud prospers, and, save for a few domestic troubles, his life runs smoothly. In the evenings all will sit and smoke in the bosom of his family. On Thursdays and Saturdays he visits his friends. They pass

the time in simple games of cards or in listening to the weird efforts of itinerant musicians. Our merchant gets stout as he approaches middle age. One day his world tumbles about him. Such is the uncertainty of fate in Morocco.

He was serving in his shop when the customer suddenly raised his voice and cried out that he was getting false weight. The accusation was terrible, and All vehemently protested of his innocence. It was an arranged charge by an enemy of the merchant, who philosophically bowed his head with this saying: "Kismet! Mine enemy has found me, and the serpent requires milk." The arbitrators were called, and, having been bribed previously, they find Mahmoud guilty and sentence him to the usual punishment meted out to givers of false weights. He is dragged to the southern wall of the city, to a place where a tall gibbet is erected. By the irony of fate it is within sight of his own house. A rope is made fast to his right wrist and hoisted up until his toes can just touch the ground. Here he is left till sunset. The ladders jeer at him and the gamins of the quarter pelt him with stones and refuse. At sundown his friends carry him home. Broken and disgraced, thus ended his career as a respectable merchant.

## LOST IN NEW YORK

Thousands of Disappearances Reported to Police Annually.

Ether Maude Mearson's Case Resembles in Many Respects That of Ruth Wheeler Who Was Murdered.

New York.—Exhaustive search by the police in every nook and corner of New York failed to reveal the slightest trace of Esther Maude Mearson, aged sixteen, who mysteriously disappeared after starting out to seek work as a stenographer.

The case resembles in many respects that of Ruth Wheeler, who also sought employment as a stenographer and went to the rooms of Albert Wolter, where she was murdered and her body burned and put into a sack. It is another of the many strange disappearances of a great city's daily life.

In fact, the parents of Esther Mearson, having in mind the sad fate of Ruth when their own daughter went in search of employment, cautioned her against going to private residences for work or answering post card requests for help as did Ruth Wheeler, Esther, an unusually attractive girl, well proportioned and large for her age, was also warned to be careful of her conduct while in the presence of strange men.

It was Lyon Mearson, brother of the missing girl, who first notified the police of her disappearance. Lyon, a graduate of the New York law school, is employed in the office of a large law firm. Joseph Mearson, the girl's father, is a retired jewelry and dry goods salesman. There are seven children in the family. They live at 107 East One Hundred and Twenty-third street.

Esther left school two years ago and became a pupil in the Hebrew Technical institute, where she took a special course. Upon leaving the in-



ESTHER MEARSON

stitute she took up the study of stenography at her home and before long became proficient in it. While it was not necessary for her to seek employment, the girl did not wish to be idle. Mrs. Mearson was the only member of the family to talk with Esther Monday morning, when the girl was preparing to continue her quest of a position. The girl was more confident than ever she would find a place where there would be a chance of advancement. She told her mother that was the kind of a position she was trying for.

"I will be home as soon as I can, mother," said Esther, as she kissed her parent goodbye. "I will be glad if I find the place I am looking for because I need something to occupy my mind."

A woman describing herself as Mrs. J. F. Kennedy went to see Mrs. Mearson and told her that she was pretty sure that she had seen Esther on Third avenue near One Hundred and Twenty-Fifth street. Mrs. Kennedy said she saw a middle-aged man in the neighborhood of fifty, say, accost the girl, calling her "miss." The girl, Mrs. Kennedy says, stopped and the two were still talking when Mrs. Kennedy went on about her own affairs.

Thousands of such cases come to the notice of the Gotham police every year. Some of the disappearing persons return after they have been away a short time and the public hears nothing more of them. Others never are found and go down in the annals of the police department as unexplained mysteries.

**Fires French Cook.**  
London.—The new queen is so thoroughly British in her culinary tastes that she is reported to have dismissed King Edward's French chef, M. Menager, who for years has been the monarch of the royal kitchen. Queen Mary is said to have decided to employ only British labor when possible.

**Paint Makes Cows Ugly.**  
Washington, Pa.—A diet of paint was fatal to three registered Jersey cows belonging to Seemery hill farmers and a fourth is expected to die. A can of paint was thrown into the pasture which, after they ate it, caused them to run about the field and try to gore each other.

**\$15 an Ounce for Rare Forks.**  
London.—The record price of \$155 an ounce was paid by Mr. Amor for two rare old silver two-pronged forks from the collection of Lord Tweedmouth. The forks were respectively of the William and Mary and Queen Anne periods.

## UNDEFEATED CHAMPION OF THE NORTHWEST.

T. A. Ireland, Rifle Shot, of Colfax, Wash., Tells a Story.

Mr. Ireland is the holder of four world records and has yet to lose his first match—says he: "Kidney trouble so affected my vision as to interfere with my shooting. I became so nervous I could hardly hold a gun. There was severe pain in my back and head and my kidneys were terribly disordered. Doan's Kidney Pills cured me after I had doctored and taken nearly every remedy imaginable without relief. I will give further details of my case to anyone enclosing stamp."

Remember the name—Doan's. For sale by all dealers. 50 cents a box. Foster-Milburn Co., Buffalo, N. Y.

**When Father Helped.**  
The fond father held the manuscript while his son practised the oration.  
"Shall we permit the ruthless hand of the hydra-headed tyrant," cried the youth, "to—to—to—well, what is it?"  
The father was wrestling with the manuscript.  
"Oh, yes," he muttered, "here it is: 'to desecrate.' Go on."  
"It's desecrate," cried the boy, indignantly. "Shall we permit the ruthless hand of the hydra-headed tyrant to desecrate the—the—the—why don't you prompt me?"  
The father was staring hard at the manuscript.  
"The—the poodle—paddle—poodle—um of our liver ties," he stammered.  
"It's the 'palladium of our liberties,'" roared the boy. "Gimme that paper—I'll say it meself."  
And he stalked away angrily.

**But He Wasn't.**  
Senator Dewey, in his Washington residence on his seventy-sixth birthday, told a reporter that his health was perfect.  
"You do, indeed, sir," said the reporter, heartily, "look the picture of health."  
"Yes," said the senator, "I shouldn't have said I was well if my appearance didn't bear me out. A self-contradictory statement is merely ludicrous. You have heard about the census taker?"  
"A census taker rang the bell of a Hillier place residence the other day and an elderly gentleman opened the door."  
"I'd like to see the head of the house," said the census taker.  
"Ssh! Not so loud!" whispered the elderly gentleman. "Now, what is it? I'm the head of the house?"

**Try This, This Summer.**  
The very next time you're hot, tired or thirsty, step up to a soda fountain and get a glass of Coca-Cola. It will cool you off, relieve your bodily and mental fatigue and quench your thirst delightfully. At soda fountains or carbonated in bottles—5c everywhere. Delicious, refreshing and wholesome. Send to the Coca-Cola Co., Atlanta, Ga., for their free booklet "The Truth About Coca-Cola." Tells what Coca-Cola is and why it is so delicious, refreshing and thirst-quenching. And send 2c stamp for the Coca-Cola Baseball Record Book for 1910—contains the famous poem "Casey At The Bat," records, schedules for both leagues and other valuable baseball information compiled by authorities.

**Get After the Flies.**  
With the warm days flies multiply amazingly. Now is the time to attack them and prevent the breeding of millions from the few hundreds that already exist.  
Perhaps the most effective method of destroying flies is by burning pyrethrum in each room. This stuns the flies and they can be swept up and burned.  
Flies are dangerous carriers of disease and an enemy of humankind. Do your part toward keeping down the pest and improving the health of your community.

**Important to Mothers**  
Examine carefully every bottle of CASTORIA, a safe and sure remedy for infants and children, and see that it bears the Signature of *Dr. J. C. Watson*. In Use For Over 30 Years. The Kind You Have Always Bought.

**Oh, Mr. Wright!**  
Wilbur Wright was talking to a Dayton reporter about the Daily Mail's \$50,000 aerial race from London to Manchester.  
"It was shocking, though," said the reporter, "that Graham White, an Anglo-Saxon flying man, let himself be beaten by a Frenchman."  
Mr. Wright smiled.  
"Shocking?" he said. "It was more than that. It was a Paulhan."

**Faster.**  
Teacher—Children, nature is superior to man in everything. For instance, there is nothing that travels so fast as the unseen wind.  
Willie—Ituh! You ought to hear what my pa says about a slight draft!

**Penalized for Hoarding.**  
Maud—Do you believe in palmistry?  
Ethel—In a way. I've known it to work splendid as a starter when the young man was shy.

He who commits injustice is ever made more wretched than he who suffers it.—Plato.  
Don't throw kites, my boy; deliver them in person.

## Constipation Vanishes Forever

Prompt Relief—Permanent Cure

**CARTER'S LITTLE LIVER PILLS** never fail. Purely vegetable—act surely but gently on the liver.  
Stop after dinner—distress—cure indicated—improve the complexion—brighten the eyes. Small Pill, Small Dose, Small Price  
GENUINE must bear signature:

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**STOCKERS & FEEDERS**  
Choice quality; reds and roans, white faces or angus bought on orders. Tens of Thousands to select from. Satisfaction Guaranteed. Correspondence Invited. Come and see for yourself.

**National Live Stock Com. Co.**  
At either Kansas City, Mo., St. Joseph, Mo., S. Omaha, Neb.

**KNOWN SINCE 1836 AS RELIABLE**  
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**PLANTEN'S C&C OR BLACK CAPSULES**  
SUPERIOR REMEDY FOR MEN ETC. ETC. AT DRUGGISTS. TRIAL BOX BY MAIL 50c. PLANTEN, 93 HENRY ST. BROOKLYN, N.Y.

## WOMAN'S ADVANCE IN CHINA

One of the Most Encouraging Signs of Progress That the Great Empire Has Yet Given.

When Christ begins to uplift a race, the evidence of it is seen in the position and education of woman. In the great land of China woman is still ignorant and enslaved to man. Mentally, morally and physically she is still near the bottom of the ladder—but a change is coming and has, in fact already become evident. A new style of woman is appearing, with unbound feet, with face washed from the old-time paint and powder, with the impulse and admitted right to take her place beside the men of her family and acquaintance in social and intellectual life.

Perhaps the most evident change has been in the line of woman's education. Thirty years ago there was not even the simplest classic for them; now the road to highest education is opening. The very men who in subjection ago wished to keep them in their western sisters.

"A cry comes from all over China for teachers, for women who know," says a writer in Woman's Work. "This need offers perhaps the greatest opportunity for American young women that exists anywhere for the Chinese are willing to pay for English, for music, for anything. It is decreed that their women must be enlightened."  
Another sign of progress in China is seen in the new official Chinese almanac, which contains for the first time in its history the Christian Sunday as well as the Chinese holy days.

**German Alcohol Stills.**  
An authority on alcohol stills says that there are 20,000 farm stills in operation on as many farms in Germany. The German government permits the farmer to produce a certain amount of grain or potato alcohol, the amount depending upon the size and location of the farm and the annual demand for the product, upon the payment of a reduced revenue tax. Alcohol distilled in excess of the quantity allowed is subject to the higher rate of taxation. Denatured alcohol, however, is not subject to any tax.

**The Secret.**  
"Miss Bright," whispered Miss Gausp, "can you keep a secret?"  
"Yes," replied Miss Bright, also whispering, "I can keep one as well as you can."

Girls don't take much interest in pugilism, but they will continue to train for the engagement ring.

## A "Corner" In Comfort

For those who know the pleasure and satisfaction there is in a glass of

**ICED POSTUM**

Make it as usual, dark and rich—boil it thoroughly to bring out the distinctive flavour and food value.

Cool with cracked ice, and add sugar and lemon; also a little cream if desired.

Postum is really a food-drink with the nutritive elements of the field grains. Ice it, and you have a pleasant, safe, cooling drink for summer days—an agreeable surprise for those who have never tried it.

"There's a Reason" for **POSTUM**

Postum Cereal Co., Limited, Battle Creek, Mich.