

GLOBES IN NATURE

Why Raindrops and the Planets and Suns Are Round.

THE FORCES OF ATTRACTION.

As a Crowd Gathers in a Circle Around an Object of Interest, So Molecular and Gravitational Impulses in Matter Act Toward a Center.

Falling rain forms into spherical drops for the same reason that the earth has become a globe—namely, because that is the shape in which the internal forces of attraction attain a balance. In the case of a very large and massive body like the earth it is the attraction of gravitation that controls the form, but in that of a small body like a raindrop it is the molecular attraction of the infinitesimal particles.

The intensity of molecular attraction, which is the force that holds the components of bodies together, is far greater than that of the attraction of gravitation, but it is exercised over a comparatively insignificant distance. In each case, however, the resultant of all the attractions between the individual particles is a force directed toward the center of mass.

But by the principle of inertia time is always required for any force or combination of forces to set matter in motion. The larger the volume of matter concerned the longer will be the time needed for the internal forces to group all the particles symmetrically around their common center of mass.

It is upon this principle that the old fashioned shot towers are operated. Molten lead is dropped from a great elevation after passing through a sieve to facilitate its separation into small masses, and during their downward flight these masses are rounded into little spheres by the mutual attraction of their molecules, which group themselves around a common center.

With very large bodies not broken up into small portions the gravitational force plays the principal part in shaping them, because gravitation is effective at great distances and throughout vast masses, while cohesion, or molecular attraction, is extremely limited with regard to the space over which it acts.

Each molecule attracts a little group of other molecules close around it, and these in turn attract their immediate neighbors. Within the space occupied by a raindrop the molecular attraction is the master force and quickly shapes the mass into a sphere.

And just as a spoonful of water thrown from a high tower will descend in the form of one or more round drops owing to the resultant pull of all its molecules toward a common center so the entire ocean if it were flung out into open space would become a gigantic ball of water rounded into that shape by the gravitational attraction acting throughout its whole mass.

It is by no accident that all the planets are spherical. They have taken that shape as inevitably as a loose stone rolls down a steep hill. Their forms are not perfect spheres, because they have been subjected to outside disturbing forces, such as the centrifugal effects of their rotation on their axes and the deformations produced by the attraction of other planets and of the sun. Even the heads of comets are spheroidal, although they are believed to consist of swarms of small bodies like meteors.

This tendency of masses, whose component parts or particles are free to move among one another, to assume a globular outline, is curiously illustrated even by crowds of swarms of sentient beings. Thus a swarm of bees when it gathers close becomes spherical or spheroidal, since that form is best suited to inclose the greatest number of individuals.

A human crowd certainly would take a spherical form if its members were able to choose their positions as freely in up and down as in horizontal space. Being confined to one level, they arrange themselves in a circle, which is the section of a sphere.—Garrett P. Serviss in New York Journal.

Political Chances.
"I see when a man runs for office he has to put himself in the hands of his friends."
"Yes, my dear."
"If a woman ran would she have to put herself in the hands of her woman friends?"
"I suppose so."
"Well, I do not imagine many women will run. Think of taking such chances!"—Louisville Courier-Journal.

Cautious Golf.
McInosh and McNab went out on the golf links and in the course of the play came opposite a deep, muddy pond. Here the inherent caution of McNab asserted itself. He appeared indisposed to continue.
"What're ye hesitating about, Tammar? Play off, mon," said Mcintosh.
McNab replied, "Mon, you's a bran' not twa shillin' be'—and I may never see it again!"—Argonaut.

A Narrow Margin.
John Stuart Mill was once dining with two brilliant French talkers who were given to monologue. One had possession of the field, and the other was watching him so intently to strike that Mill exclaimed aloud, "if he stops to breathe he's gone!"

Not Always.
"They say there's luck in odd numbers."
"I don't believe it. I know a man who got nine years in prison for having three wives."—St. Louis Post-Dispatch.

Uncle Frank Nichols Oregon Pioneer

"Uncle" Frank Nichols, of Tumalo, was the object of considerable attention when in Portland recently attending the meeting of the Oregon pioneers. One of the oldest men in this part of the state, he is a frequent visitor to Bend and is well known in town. The Oregonian last week contained the following article about Mr. Nichols, which will be of interest to his friends and acquaintances in this section.

"Uncle" Frank Nichols.
You folks who do every important happening from the 18 year old Spanish war, or even you who think that the Civil War was the dividing line in a more or less eventful existence, how would you like to be in position to revert to the first Mexican war, back in '46, or the gold rush to California in '49 as the milestones of your young lives?

Such is the unique distinction of Benjamin Franklin Nichols, the patriarch of the Tumalo flats in Central Oregon, a man who bears the weight of his 91 summers as lightly as the boys now starting for the Mexican border carry their knapsacks and rifles.

"Uncle Frank," as he is known throughout the length and breadth of the state, is here to attend the pioneers' reunion which opens tomorrow. He expects to meet many latter day friends—but not many old friends. Most of his old friends are gone—gone forever. He is one of the last of his day and generation.

Trip to Oregon Made in 1844.
The Nichols family were among the early settlers of Missouri. They moved there from Tennessee as a protest against slavery. When slavery invaded Missouri they came to Oregon, crossing the plains in 1844. The father of "Uncle Frank" was engaged soon after his arrival, to build a gristmill for Dr. Marcus Whitman, the missionary, near Walla Walla.

Subsequently the party had a perilous trip down the Columbia in an improvised canoe. They landed near Oregon City late in June, 1845. The young Nichols had learned the carpenter trade—such as it was in those days—from his father, and got a job building a house for "Father" John

McLoughlin at Oregon City. He hewed and planed the boards by hand and fitted them in position.

The next year, though, the family settled near Rickreall, Polk county, and young Nichols, in his temporary absence from home, was elected sheriff of the county. He was not quite 21 years old then. But he became sheriff in fact as well as in name. While he held this office, one Adam E. Wimple was arrested by him and convicted on a charge of murdering his wife and concealing the body under the floor of his house. Each county performed its own hangings in those days and the young sheriff disposed of this particular man himself. He wanted to do the job right, he says.

Part Taken in Gold Rush.
When gold was discovered in California in 1848 he was one of the first to join the rush from Oregon. He had crossed the continent with J. W. Marshall, the discoverer. He was in the gold fields for a little more than a year and returned to Oregon on a sailing vessel. He was 35 days at sea coming from San Francisco to the mouth of the Columbia. Within a year after he returned he married a daughter of General Gilliam. He engaged for a time in the flour mill business with Henry Owens, his brother-in-law, and J. W. Nesmith, afterwards United States Senator. Later he and Mr. Owens were in the drug business at Dallas.

In 1853 he was initiated as a Mason at Salem, and probably is the oldest Mason in Oregon who joined the order in this state. Later he took the second and third degrees of Masonry in Jennings Lodge at Salem.

About 40 years ago—he was then 50 years of age—he went to Prineville and opened a drug store. Prineville then was a part of Wasco county. He was elected to the Legislature in 1882 and introduced a bill creating Crook county from a part of Wasco.

Mr. Nichols is surprisingly well informed on current history and displays a startling knowledge of facts and events dating back for 70 or 75 years. His first Presidential vote after Oregon was admitted to the Union was cast for Stephen A. Douglas in 1860. He is a thorough admirer of Theodore Roosevelt and wanted him to get the Republican nomination for President this year. Now he is going to support Hughes.



TUMALO PIONEERS. "Uncle" Frank Nichols at Right, and "Marsh" Aubrey, at Left.

How to Live Long

Rules reprinted by permission of Metropolitan Life Insurance Company from booklet issued by it.

HABITS—RULE 11.
Stand, Sit and Walk Erect.
Lift your chest up, arch it forward and throw your shoulders back, stomach in. Do not slouch.

If you stand straight and breathe deeply, it will help you to keep your chest up. It will also help to keep your bowels in good condition.

If it is hard for you to sit up straight in your chair, put a small pillow behind you low down, that is, in the small of the back. One of the common causes of constipation and nervousness is a slouching position. Walk and stand with heels apart and toes straight forward. "Toeing out" leads to weak feet and flat foot.

Tuxedo's Grip by Walt Mason

Tuxedo is the gripping smoke, a boon to every buyer; you take your pipe of English oak, of meerschaum, clay or briar, and fill it with the fragrant weed, the choicest man can gather; and then you have a smoke, indeed; and are you glad? Well, rather. Tuxedo has no kick or bite, suggests no "morning after;" its mission is to bring delight, and fill your heart with laughter.



It caught the sunshine of the south, when it was green and growing, and brings that sunshine to your mouth, when out the smoke you're blowing. "Tuxedo's in a class alone," its smokers are declaring; "it has a fragrance all its own, that baffles all comparing." And thus it grips the men who smoke, and holds their true affection; their trusty briar pipes they stoke, and never know dejection. *Walt Mason*

Daily Program

Bend Chautauqua, July 4-9

Bend, Oregon

ALBERT L. MORSE Superintendent
MISS GEORGIA LATTA Junior Supervisor

PROGRAMS BEGIN PROMPTLY.

Junior Chautauqua 9:00 A. M.

Afternoon Concert 2:30 Evening Concert 7:30
Afternoon Lecture 3:00 Evening Lecture 8:15

TUESDAY.

"Patriots Day"

Morning— Junior Chautauqua—Organizing King Arthur's Court
Afternoon—Opening Exercises—Important Announcements Superintendent
..... S. Platt Jones, Humorist
Concert Ionian Serenaders
Readings Ruth Meeker
Admission 35c

Evening— Concert Ionian Serenaders
Impersonations S. Platt Jones, Humorist
Admission 50c

WEDNESDAY.

Morning— Junior Chautauqua King Arthur's Court
Afternoon—Prelude Gullotta Trio
Popular Lecture, "The Seen and Unseen" Dr. Elliott A. Boyd
Admission 35c

Evening— Concert Gullotta Trio
Lecture, "Uncle Sam's Tomorrow" Hon. Victor Murdock, of Kansas
Admission 75c

THURSDAY.

Morning— Junior Chautauqua King Arthur's Court
Afternoon—Prelude Lyric Opera Co.
Inspirational Lecture, "The Matchless Book" Arthur A. Franke
Admission 35c

Evening— Opera "Martha" Lyric Opera Co.
Lecture, "Home Town Preparedness" Ernest J. Sias
Admission 50c

FRIDAY.

Morning— Junior Chautauqua King Arthur's Court
Afternoon—Concert Wittepski's Royal Hungarian Orchestra
Popular Lecture, "Success Where You are" Mrs. Harriette Gunn Roberson
Admission 50c

Evening— Grand Concert Wittepski's Royal Hungarian Orchestra
Popular Selections Mme. Fay Morvillus
Accompanied by Royal Hungarians.
Admission 75c

SATURDAY.

Morning— Junior Chautauqua King Arthur's Court
Afternoon—Prelude Elizabeth deBarrie Gill
Popular Lecture, "One Blood" Dr. Frederick Vining Fisher
Admission 35c

Evening— Harp Concert Elizabeth deBarrie Gill
Stereopticon Lecture, "America Before the World" Dr. Frederick Vining Fisher
Admission 50c

SUNDAY.

Morning— Usual Services at All Churches.
Afternoon—Prelude Kekuku's Hawaiian Quintet
Informal Talk, "Children's Rights" Miss Georgia Latta
Admission 35c
E. W. C. S. Vesper Service All Invited

Evening— An Evening in Hawaii
(a) Opening Concert Kekuku's Hawaiians
(b) Illustrated Lecture, "Isles of Peace" Frederick J. Halton
(c) Closing Concert, Featuring "Aloha Oe" (Good-by) Kekuku's Hawaiian Quintet
Admission 75c

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