

THE TAIL OF A COMET

It Pays Dearly For Its Brilliant Gaseous Display.

FORMED BY LIGHT AND HEAT.

Far Away the Comet is a Globular Mass, and as it Nears the Sun the Action of That Body Untwines the Tail, Which is Never Recovered.

Traveling as comets do in very elongated ellipses, with the sun in one of the foci, as the attracting point is called, most of their journey is spent in slow uneventfulness far away from the heart of the system—heart is just what the word focus means. They are then small globular aggregations, sluggish and dim—a little roundish nebula in look. Such they appear when first described in the telescope coming in from space, for they are rarely seen at all until they have entered within the orbit of Mars. Distance in part, but still more their own behavior till then, keeps them hid.

Within this nebulousity, known as the head, appears as it nears us a bright spot, the nucleus. Suddenly there occurs a complete change in the deportment of the body, one which renders it the observed of all observers, and in less civilized times occasionally its being held the harbinger of distress, disease and death.

As soon as the comet gets near enough the heat of the sun sets up commotion within it. By Ver's determination of the temperature of the unblanketed sunward side of the moon we are enabled to infer that this heat is great at the earth's distance from the sun in spite of the cold of space. This temperature is 353 degrees F.

And as the comet approaches the sun this heat must increase inversely as the square of the distance. At half the radius of the earth orbit it is already four times as great above absolute zero, at a quarter sixteen times, and so on increasingly, the temperature rising into thousands of degrees.

No wonder the comet acts as it does. It at once becomes uneasy, waxes in light and, as the spectroscope reveals, disruptive electric discharges start in it which let out the imprisoned gases. Then begins that spectacular career of perihelion passage which makes the comet so superb an object and for which it pays so dearly. The gases which are thus thrust out from the interior of the separate meteorites, together with such particles of the iron as are made gaseous by the heat, fall prey to another force besides gravitation. This force is the impact of light itself, the light emitted by the sun.

That so immaterial a thing as a beam of light can have power to move even a pith ball is a conception not easy to grasp. Yet there is no doubt of the fact, theoretically calculated years ago by Clerk Maxwell from his electro-magnetic theory of light, for the gaseous particles proceed to be repelled by the sun at enormous speed, each behaving exactly as it should by mathematical analysis if such were the occasional cause. Evidently the light waves have a propelling power in the direction of their own motion equal to their own speed.

Why, then, is it that the planets betray no such effect in spite of their size? The answer is, because of that very size. Gravity acts on the mass, a matter of three dimensions; the light force on the surface of the body, a matter of two. As a body diminishes in size, therefore, its surface bears a greater and greater ratio to its mass until when small enough the second force is the stronger of the two.

This relation is betrayed in the conduct of the tail. The imprisoned gases, heated to expulsion on the sunward side of the comet, rise toward it in a series of exquisite mantling envelopes, as if the comet's head were veiling itself from the too ardent gaze of the sun. Then, after rising to a certain height, their initial impetus overcome, they fall back, repelled by the light waves, although still attracted by gravity, and are driven out to form the tail of the comet, fresh envelopes taking their place.

Sometimes only a single tail is formed, but at others two or even three are shot out, and when this happens one is nearly straight, one curved and one greatly bent. Now, calculation shows that the repelling force in the case of the first is fourteen times that of gravity, in the second two and two-tenths times, or something less, and in the third only about one-fifth of gravity. But these are the very ratios which particles of hydrogen gas, of the hydrocarbons and of iron or sodium would respectively show.

As the comet approaches the sun the display becomes more violent and more spectacular. Finer and wilder grows the pageant, the "hairy star" loosening its tresses, which had stood sedately coiled about its head amid the depths of space, to stream in gorgeous gleams behind it as it pays its orbital obedience to the ruler of its course. It seemingly backs away in keeping with the etiquette of royalty, turning always its face sunward as it retreats whence it came.

But it pays dearly for its display. The matter going to form the tail can never be recovered, but is driven farther away. At each successive return to the sun some of its mass and brilliance is thus lost, and this is why the periodic comets, those that have made many visits, are such small and inconspicuous objects. It is only the comets of long ellipses and very distant habit of which the perihelion pageant is so fine.—Youth's Companion.

INDICTS HANLEY OF HARNEY

Accused of Cutting Government Timber, Is Wrathful.

William Hanley, the big ranch owner of Harney county, has been indicted by the United States grand jury for the alleged cutting of timber on government land, and has furnished bail for his appearance in court to the amount of \$2500.

It seems that in the operation of a dredging machine employed in the construction of large drainage canals through the Dunder and Blitzen swamps, Hanley had his employees cut considerable juniper timber in the adjacent country. This, it is understood, was both upon private land, and taken with the permission of the owner, and upon government holdings in some instances. Special agents hunted the matter out and preferred charges which have led to the indictment. Hanley declares that even if the juniper cut was on government land, it has absolutely no commercial use and has been taken by the settler at his pleasure ever since the white men first came to Central Oregon.

T. R. WILL HELP BEND BOOST

Plans First Visit to Deschutes Valley at End of April.

T. R. is coming. No, not Theodore the Lion Killer from Africa, but Tom Richardson of Portland, enthusiast extraordinary on subjects Oregonian and P. H. D. plus in the boisterous art of boosting.

A recent letter received from the manager of the Portland Commercial Club announces that he will make a trip to Bend probably in the last week of April, although the exact date is as yet uncertain. When here the visiting Portland publicity expert will be the guest of the Bend Commercial Club which is a member of the Oregon Develop-

ment League of which Mr. Richardson is secretary. A big meeting will be held in the afternoon or early evening at which Mr. Richardson will talk to the people of Bend explaining the work of state advertising and the opportunities that Bend now may grasp in the direction of broader local publicity work. After which a banquet probably will be arranged with in formal speaking, and an opportunity afforded the visitor of becoming familiar with the resources and attractions of Bend and the adjacent country. All the details of the visit, however, will be taken up by the Commercial Club and definitely outlined as soon as its exact date is fixed.

Why Knows Heine's Name?

When Heine came to town
A month or two ago,
He forthwith rustled round
To accumulate some dough,
At the P. B. Inn he got a room
And kept it for awhile,
While things forthwith began to boom—
Especially Heine's smile.

Now Heine's trunk, it never came;
The loss it sore distressed him,
But Heine's friends made up the same,
And with borrowed duds they dressed him.

(Here elapses a trunkless month.)

Dust-covered in a near-by barn
Forsooth, the trunk was found,
Waiting there a month or more
For its owner to come around,
But no one knew his other name
That the long lost trunk tag bore,
So none could deliver up the same,
Tho Heine sorrowed sore.

Notice.

The Rosland Lumber Company has filed Supplementary Articles of Incorporation changing its corporate name to J. N. Masten Lumber Company.

Dated this 26th day of March, 1910.

By order of the Directors of the Rosland Lumber Company.
J. N. MASTEN, President.

Timber Lands Wanted

List your Timber Lands with us quick. We have customers waiting.

320-Acre Homesteads.

We can locate you on the choicest Homestead Lands in Central Oregon. Satisfaction guaranteed.

Irrigated Farm Lands

List your Farm Lands with us. Our list is good now but we desire to increase it. We have plenty of buyers coming.

City Property and Acreage

We have call for all kinds of City Property and Acreage. Let us know what you have in this line.

The Home Land Company
W. W. ORCUTT, Manager.

Colonist Rates TO OREGON AND THE GREAT NORTHWEST

The management of the Oregon Railroad & Navigation Co. takes great pleasure in announcing that the low rates from Eastern cities, which have done so much in past seasons to stimulate travel to and settlement in Oregon, will prevail again this Spring DAILY from March 1 to April 15 inclusive.

PEOPLE of OREGON

The railroads have done their part; now it's up to you. The colonist rate is the greatest of all home-builders. Do all you can to let Eastern people know about it, and encourage them to come here, where land is cheap and home-building easy and attractive.

Fares Can Be Prepaid at home if desired. Any agent of the road named is authorized to receive the required deposit and telegraph ticket to any point in the East.

Remember The Rates—From Chicago, \$33; from St. Louis, \$32; from Omaha and Kansas City, \$25. This reduction is proportionate from all other cities.

WM. McMURRAY
General Passenger Agent Portland, Oregon

320-Acre Homesteads

In the fair land of Sunny Oregon



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Call on or write to

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369 OAK ST.

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Pilot Butte Inn—W. N. BROWN, Mgr.

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Preparing to extensively PUT OUT operating BULLETINS of properties FOR SALE, from Goldendale, Wash., to Bend, Or., owners and agents are asked to SUBMIT deals and complete selling DETAILS on their best offerings, to

O. & W. Farm & Fruit Lands Syndicate
SEATTLE, WASH.

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James Rice

THE COURTS

CIRCUIT COURT—First Monday in May; third Monday in October.
Probate Court—First Monday in each month.
Commissioner's Court—First Wednesday in January, March, May, July, September and November.

BEND SCHOOL DISTRICT No. 12

Directors..... E. C. Cow
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M. Triplett
Clerk..... H. A. Smith
Teachers..... Miss Ruth E. Reid
Miss Anne B. Markel
Miss Maude Vanderveer
Miss Marion West
Miss Fona Richardson
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Recorder..... H. C. Ellis
Treasurer..... S. J. Spencer
Aldermen..... J. H. Hunter
J. H. Onell
H. J. Overurf
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W. B. Sellers

Article on Bend

COPIES NOW ON SALE at BULLETIN OFFICE of

Putnam's Magazine

for January, containing long illustrated article on the Bend Country.

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