

—Dietz on Science— FEWER COMETS HAVE APPEARED IN LATE YEARS

None in Naked Eye Class
Has Been Seen
Since 1911.

BY DAVID DIETZ
Scripture-Howard Science Editor

It is beginning to look as though 1933 would end without that big comet for which astronomers are looking. Of course, Santa Claus might bring it, but there's no advance notice if he is planning to do so.

In 1931 I wrote that astronomers were on the lookout for a big comet, that one was overdue on the basis of the law of probabilities and that many astronomers believed that it might show up before the end of the year. It didn't.

In 1932, I reported that many astronomers felt that since it didn't show up in 1931, it might in that year. But it didn't. And now 1933 is almost over and still there has been no big comet.

The last "naked eye" comet (that is, a comet big enough and close enough to make an impressive spectacle to the unaided eye) was seen in 1911. The early part of the present century had three fine naked-eye comets, Moorehouse's comet in 1910 and Brook's comet in 1911. These were magnificent sights and attracted great attention. But the century to date has had a shortage of big comets.

Astronomical records reveal that about 400 comets were seen before the invention of the telescope. Obviously these all had to be naked-eye comets. The records go back to about 1000 B. C. The telescope was first used by Galileo in 1609.

Average Fifteen a Century

This means that in twenty-six centuries, therefore, there were 400 naked-eye comets. This is an average of fifteen or sixteen to a century. One-third of the present century is gone and we have only had three. In other words, we are two behind schedule.

Comets which are visible in the telescope are not unusual. About 500 have been recorded since the year 1600. About five of them a year is an average, although eleven were discovered in 1925.

When a comet is first picked up by means of a telescope, it appears only as a star-like spot of light, usually with a fuzzy or hazy appearance.

This will surprise many people who always think of a comet as having a long tail. The tail develops as the comet approaches the sun. As the tail grows longer, the head grows smaller, making it apparent that the tail grows at the expense of the head.

Tail Has Great Length

The tail of a comet always points away from the sun so that when the comet is receding from the neighborhood of the sun, the tail does not trail behind the head, but extends in front of it, stretching out in the same direction that the comet is moving. As the comet fades into the distance, the tail grows smaller again and finally disappears.

The head of a comet is divided into two parts, a small, bright center called the nucleus, and, surrounding this, a fuzzy, hazy mass called the coma. The volume of a comet is enormous. The diameter of the coma will range from 30,000 to 150,000 miles as a rule, although the nucleus may be only 500 miles

'DEVILS ISLE' WARDEN



CITY ELKS TO HOLD MEMORIAL RITES SUNDAY

Otto P. Deluse Will Be
Principal Speaker at
Annual Session.

Otto P. Deluse will be the principal speaker at the annual memorial services for deceased members of Indianapolis lodge 13, Benevolent and Protective Order of Elks, Sunday night at the Antlers.

Music for the service will be provided by the Montani ensemble,

with Miss Ruth Otte and Raymond Jackson as soloists.
Arrangements are being made by a committee composed of John D. Morris, John Lauck Jr., Fred Bodemiller, Fred McNeely, Timothy P. Sexton, Joseph J. Bauer and George W. June, appointed by exalted ruler William J. Fahey.

JEWETT WILL SPEAK

Sons of American Revolution to
Convene Tuesday.

Charles W. Jewett, former mayor, will be the principal speaker at a luncheon of the Sons of American Revolution members Tuesday in the Spink-Arms, honoring past presidents of the organization. It was announced today by Cornelius F. Posson, past president, who will preside.

The French knew the Ohio river as "La Belle Riviere."

STATE NATURE STUDY CLUB TO ELECT OFFICERS

Session to Be Held Here in
Cropsey Hall at
Library.

Motion pictures of activities of the Nature Study Club of Indiana will be shown at a meeting in Cropsey hall, Central library, at 7:45 tomorrow night.

Officers for the new year will be elected at the meeting. Present officers are John W. Noble, president;

Mrs. Austin Sims, vice-president;

Miss Dorothy White, secretary, and

Arthur E. Lloyd, treasurer.

The club will hold December

open house Sunday afternoon in

the cabin in Woolen's Gardens.

Misses Lola Perkins, Anna Moore

and Elsa Goett will be hostesses.

CITY CO-EDS ON TEAM

Four Local Girls on I. U. Rifle

Squad.

By Times Special

BLOOMINGTON, Dec. 1.—Among

twenty-five co-eds of Indiana uni-

versity named to the girls' rifle

team are four Indianapolis stu-

dents. They are Misses Sommers,

Mary Sommers, Mildred Miller and

Mary Pell.

\$275 in Rugs Stolen.

Theft of rugs valued at \$275 from

the garage of Horace Goodwin, 24

South Colorado street, was reported

to police yesterday.

ANDERSON MAN DIES AT WHEEL OF MOVING CAR

Stricken With Heart At-
tack; Brother Grabs
Wheel, Averts Crash.

Stricken with a heart attack while driving in the 500 block North Rural street yesterday, William Tibbetts, 66, Anderson, died at the wheel of his car.

A brother, Clyde S. Tibbetts, 4218 East Michigan street, grabbed the wheel of the car and narrowly avoided a head-on collision with another car. Dr. E. R. Wilson,

deputy coroner, conducted an investigation.

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Every Coat Was Either
Rich in Fur or Fabric!

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The high points of
coats twice this price
are in this offering!
Often you can find
value but seldom
value in the latest
style! Rich winter
colors. Sizes for women
and misses!

COATS, Second Floor.

Extraordinary After Thanksgiving Event!

Thousands of Dollars' Worth of FIRST QUALITY Merchandise
Offered at Sensational Savings in This After-Thanksgiving Event!



They'll Keep You Plenty Warm
"TUCK STITCH"
UNDIES

They're not the least bit "scratchy" because they're
not made of wool—yet they keep you warm. The
panties hit the tops of your stockings; they fit
snugly. While 5,000 last!

VESTS
PANTIES

25c

Each

KNIT UNDIES,
Street Floor

EXTRA
Women's
Printed Rayon
Negligees
Full Length! 1.98
NEGLIGEE,
Second Floor



Girls' Wool and
Wool Mixed Dresses

SATURDAY 1.98

Here's a chance to complete your
school wardrobe thriftily! Many
different styles including jumpers
with contrasting blouses. Sizes 7
to 14.

GIRLS' SKIRTS—
Serge and flannel . . . \$1.29

GIRLS' WEAR, Second Floor.



What Is Santa Saying?

Penney's Toyland, Dec. 1, 1933.

Dear Kiddies:

I know you TOTS will get a THRILL
WITH the new array of TOYS I have
FOR you, in PENNEY'S TOYLAND.
They're GIFTS that will make anyone's
eyes SPARKLE. I invite all of you to
come in and see me in my NEW HOME.
Love. "SANTA."

What Fun! Look at This

Electric Train

3 Cars! COMPLETE

9 ft. Track! 2.98

Transformers! Guaranteed

motor! Electric headlights!

Shiny, steam-type locomotive!



Use Santa's "Lay-A-Way" Room!

PENNEY'S TOYLAND, Third Floor.

EXTRA
Women's
New Novelty
Collar Sets
Piques—
Novelties! 25c
NECKWEAR,
Street Floor

Boys' "Tweeduroy"
KNICKERS

Saturday 1.98

Warm, because they're lined.
Assorted colors. Well made.

BOYS' UNION SUITS—15% wool.

Long Sleeve; . . . 89c

ankle length

BOYS' LINED HELMETS—With

snap-on goggles.

Warm. Saturday 39c

BOYS' WEAR, Second Floor.



All-Silk Flat Crepe

Printed or Plain!

98c

Yd.

Excellent quality, 39
inches wide. Plaids
and floral designs.

CORDUROY—Assorted

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New Novelty Styles
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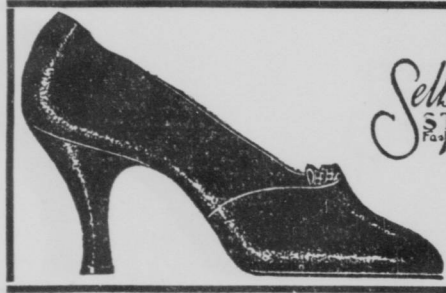
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They include pumps, ties,
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most popular leathers. Sizes
to 9; AAA to C.

WOMEN'S SHOES, Second Floor



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to give your home a real Christ-
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BLOUSES—
1.49

That'll give you a new
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made. Prints and taf-
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SKIRTS—
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Smartly tailored of all
wool fabrics—flannels,
basket weaves and
tweeds.

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