In this issue:
$1,000 IN CASH REWARDS
IF YOU CAN FIND MISSING PERSONS!

and Dan Eisenberg,
FAMOUS MANHUNTER SPECIALIST,
TELLS YOU HOW TO SEARCH FOR THEM
IN "I FIND THE MISSING!"

THE MOST FAMOUS COWBOY OF 'EM ALL-
Will Rogers

DIARY OF DEATH!

THE MOMENT-BY-MOMENT ACCOUNT OF THE CENTURY'S MOST DISASTROUS HURRICANE!
When you want to know, ask the expert. REAL FACT COMICS

Keeper of the Jewels

Meet Dr. Frederick H. Pough:
Impresario of the most glamorous ice show on earth! He handles the world's most precious diamonds, rubies, and sapphires as casually as a miner tosses about lumps of coal!

Shortly after Pearl Harbor, a serious crisis was reached by scientists working on the atom bomb...

General, we cannot continue our work unless we obtain twenty more pounds of "Mineral X" by next week! And there isn't an ounce in the U.S.!

"Mineral X!" Hmm... That's rare! Only one man can help us find some—Dr. Frederick H. Pough. He knows more about minerals than anyone else in the world!

Indeed!
Meanwhile, at New York's Great Museum of Natural History, where Dr. Pough served as Curator of their Fabulous Gem and Mineral Collection... This Jade Boulder is our largest specimen. It weighs half a ton and comes from Silesia. It takes two workers three days to polish it.

This Gold Crown, studded with diamonds, sapphires and garnets, was worn by a Vizier of Morocco in the 18th century. It is priceless!

That afternoon...

And so, because you know more about minerals than anyone else, the army is asking you to help us find 20 pounds of this precious substance.

According to my geological maps, it can be found in a certain valley in Brazil. I'll fly there at once!
Because of his reputation as a mineral expert, everyone consults Dr. Pough. Once, at the customs office...

That’s Mrs. Van Ulster. We got a tip she’s smuggling in some diamonds. But how?

Hmm... I’ve got an idea...

Jewelers frequently ask Dr. Pough for advice...

I can’t understand it. Dr. Pough, a man left this diamond with me yesterday, asked me to set it in a ring. Today it’s changed and has become a cheap zircon stone!

My friend, you are the victim of a clever racket!

That evening, in a laboratory...

Few people know that when you expose a zircon to X-rays, as I am doing now with the stone that crook left with you, it will pass for a diamond for 24 hours! Incredible!

The zircon now looks like a sparkling diamond. I’d love to see that crook’s face when he calls for it at your shop tomorrow.

The next day...

Here’s your diamond, sir. Set in a ring just as you ordered. That will be $150.00.

Huh... how... er... all right. Here’s the money...
WHAT WAS DR. POUGH'S STRANGEST CASE?
IT BEGAN WHEN A STEAMSHIP COMPANY
DELIVERED A CARGO OF SILK TO A NEW
YORK HARBOR....

BUT WHEN THE CASES OF SILK WERE OPENED
IN A WAREHOUSE...

WHAT'S THIS, WORTHLESS
PIECES OF ROCK INSTEAD OF SILK? CROOKS MUST
HAVE SUBSTITUTED THE
ROCK FOR THE SILK SO THAT DISCOVERY OF
THE THEFT WOULD BE DELAYED.

THE POLICE Sought OUT DR. POUGH...

...AND IF YOU CAN TELL US
WHERE THESE ROCKS CAME
FROM, WE'LL BE ABLE TO KNOW
AT WHICH PORT OF CALL THE
GANGL OPERATED.

HMM... THAT'S A MEDUIM-
GRAINED, LIGHT-COLORED
IGNEOUS GRANITE...

THERE IS A DEPOSIT OF EXACTLY THAT TYPE
OF MINERAL IN SANTOS. I'D SUGGEST YOU SEARCH
THERE FOR THE GANG, CAPTAIN!

THANKS, DOC!

FOLLOWING THE STONE SLEUTH'S TIP, SOUTH
AMERICAN POLICE WERE SOON ABLE TO ROUND
UP THE SILK-THEIVES...

YOU ARE ALL
UNDER ARREST!
HANDS UP!

CARAMBAS! HOW DID THEY
FIND US?
Dr. Pough is the world's leading expert on gems and minerals because mineralogy has been his hobby ever since youth.

At the age of 12 he led Boy Scouts on field trips...

Presently... this sample's a beauty! That makes 185 different minerals our troop headquarters now has.

One day, digging in the Palisades, young Fred made a thrilling discovery.

What a find! An old Indian quartz arrowhead. I'll donate it to the Museum of Natural History.

The following Sunday...

Thanks for your offer, my boy. But I must reject it. There is nothing rare about your find. Better luck next time!

The young geologist lingered at the museum, studied some of the rare gems on exhibit there.

The finest and largest sapphires, rubies, and topazes in the world—here. Some day I'm going to be curator of this collection.
Young Pough determined that he would learn more about minerals than anyone else in the world. He studied mineralogy at Harvard...

When are you turning in, Fred? It's after midnight.

Just as soon as I can memorize the structure of this piece of hematite.

After graduation, he studied crystallography at Heidelberg University in Germany.

Herr Pough, I want you to name these rocks.

Yes, professor. From left to right they are synadelphite, pharmacosiderite, eludalyte and mocha stone.

Receiving his degree, Pough visited Roy Chapman Andrews, director of the Museum of Natural History.

Sir, I think I know more about minerals than anyone else. Give me a trial here and I'll prove it.

That's Dr. Pough, the new boss, examining a meteor someone just donated to the museum.

Fred Pough made good; a few years later, when the head curator retired, he obtained the position he had dreamed of as a youth...

It's his lunch hour, and he'd rather study it than eat. Can you imagine anyone loving rocks like that?

Dr. Pough worships his minerals more than life itself. Once, braving the fiery lava and gas fumes of a Mexican Volcano, while on vacation...

Gray Obsidian... the only piece in the world... formed by volcanic action... I must have it.

One half of this rare mineral Pough donated to the museum; the other half went to his wife...

What an unusual ring you've given me for my birthday, dear. Where did you get this beautiful gray stone?

Oh, it's just something I picked up.

The End.
New York Mineralogical Club field trip, Upper New Street Quarry, Paterson, New Jersey 1963
Photograph by Joe Rothstein
Join us at the Executive Inn,
Tucson, Arizona

on Sunday, February 4, 1996
6-10 pm

for a reception to celebrate

the imminent 90th birthday of Fred Pough

Fred Pough ceremony starting at 7:45 pm.
The New York Mineralogical Club
Founded 1886

110th Anniversary Banquet Souvenir Card

November 13, 1996
Grand Ballroom, Southgate Tower, New York City

Dr. Frederick H. Pough
Special Guest Speaker
"Reflections of Sixty Years in Minerals"
Dear Mitch:
Tell Jean Portell the old Yedlin phrase: “Get a good book and read it.”

Mine, for example

F. Rough

Mr. Mitchell Portnoy
NYMC
P.O. Box 77
New York 10024
N.Y. 0077
The Rueppel Mine
An Extinct Mine in Stanton, Missouri

Fred Pough
100 Hahnehmann Trail
Pittsford, New York 14534-2352

As the brother of Richard Pough, founder of Nature Conservancy, I, too, am concerned with extinctions. Not of whales, not of sharks, not of cod, not of salmon, not to woodpeckers, not to animals; and, finally, not even of the dozens of erroneously identified dicky birds I’ve ceased to feed. (For all of them there are buyers of an abundance of Petersen-inspired books and binoculars. To me they are virtually identical sparrows, rarely correctly identified and hardly worth the time. Constantly ravenous, they had abandoned the bugs God invented them to eat, replaced by my generous handouts. But no longer!) But back to my topic of mines. So far as I know, no one has complained about the disappearance of fluorites; no one has whined about Tsumeb dioptries. Nor has anyone been heard complaining of exhaustion of the gorgeous Bisbee azurites. Minerals, they are just ore, destroy them for a few bucks worth of metal. That, apparently, is ok, because stockholders want you to recover another ten cents worth of lead or copper. (The heck they do! Most mining fools don’t recognize that carefully harvested gorgeous crystals are worth ten or even 100 times as much as the substance within. Often, in fact, the mine management doesn’t even let in geologists or collectors who would like to preserve a few of God’s eons-old mineral sculptures. Liability statues and potential litigious lawyers may be to blame – at least they provide an excuse.) Would not some dying mines have become profitably visible by leaving a little pretty malachite or azurite? Or even gold? Virginia City in Nevada does pretty well economically with its unexciting mine trips since the ladies, who are “madmissable” elsewhere, are thrilled to go underground!

Little is duller than visiting a diamond mine in South Africa.

Fred’s Last Article,
Manuscript Published in
Mineral News
October 2005

Zircon—

Dr. Vivien C
vgornitz@giss

New minerals are forming all the time—sulfur deposited at volcanic fumaroles, olivine or pyroxene crystallizing as a basaltic lava flow congeals, salt (halite) precipitating as a playa evaporates, ice crystals falling during each snowstorm. Minerals and rocks are continuously being created and destroyed on this geologically dynamic planet. But what about the Earth’s oldest minerals? We know that the Solar System formed around 4.56 billion years ago, but the oldest rocks on Earth are only around 4 billion years old. Why not older? Shortly after the origin of the Solar System, the Moon was bombarded by a devastating onslaught of asteroids or meteorites, whose most impressive scars remain as the giant circular basins—Mare Imbrium, Mare Nectaris, Mare Orientale, etc. The Earth, too, must have experienced a similar bombardment which presumably would have destroyed any older rocks. However, tiny grains of zircon found in Australia that are up to 4.4 billion years old, can claim to be the world’s oldest mineral. Instead of the “seething inferno of molten magma” resulting from the meteoritic onslaught, the zircon grains point to a less hellish early environment. Zircon’s physical properties—its hardness,

Zircon—the Mineral and Gem

Zircon, zirconium silicate, is a common accessory mineral in igneous rocks, particularly those of granitic composition. It forms large well-developed crystals in granite pegmatites and nepheline syenites. It also occurs in small amounts in sedimentary and metamorphic rocks. Zircon is relatively hard, dense, chemically resistant, and lustrous, ranging in color from brown, reddish-brown, green, gray, to colorless. It crystallizes in the tetragonal crystal system and typically exhibits a combination of tetragonal prism and dipyramid forms. The crystals are often strongly zoned. Zircon commonly contains trace amounts of hafnium, aluminum, iron, rare earth elements, thorium, and uranium. The presence of radioactive elements can lead to a breakdown of the crystal structure—a process known as metamictization. This gives rise to “high” and “low” types, in which the refractive indices and specific gravity values are higher and lower, respectively, with the lower values displayed by metamict material. Heating to 1450°C restores it to its normal properties.

(Continues on page 3)

By JEREMY PEARCE

Frederick H. Pough, a mineralogist and museum curator who wrote a guide to collecting gems and minerals that became an essential tool for budding geologists, died on April 7 in Rochester. He was 99.

The cause was a heart attack, said a grandson, Thomas F. Moore. Dr. Pough (pronounced POE) collapsed while attending a mineral symposium near his home in Pittsford, N.Y.

The book, "A Field Guide to Rocks and Minerals" (1953), was written while he was a curator of physical geology and mineralogy at the American Museum of Natural History in Manhattan.

Part of the Peterson natural history series, the guide used photographs and plain prose to steer the serious amateur among rocks, gems and crystals and the geological forces that formed them. Five decades after Dr. Pough wrote it, the book remains in print and has sold more than a million copies.

Carl A. Francis, curator of the Mineralogical Museum of Harvard University, which received part of Dr. Pough's gem collection, said the field guide was "accurate and substantial, and covered hundreds of minerals, showing their relative shapes and size in the photographs."

Dr. Francis added: "It was aimed at teenagers as well as adults and identified the specimens that found their way into the hands of many, many people."

As a mineral collector working for the American government in the 1940's, Dr. Pough went to Brazil, where he was first to describe a greenish yellow phosphate mineral.

With Edward P. Henderson, a United States Geological Survey mineralogist who analyzed the find, he named it brazilianite and published the results in a journal, American Mineralogist, in 1945. Other deposits of brazilianite were later uncovered in New Hampshire.

While at the museum, Dr. Pough experimented with X-ray radiation and its brilliant effects on aquamarines and other gemstones. He found that precious and semiprecious gems changed color under radiation, although often only temporarily. He also warned jewelers and gem dealers to be wary of irradiated stones because sunlight could cause enhanced colors to fade.

After leaving the museum in 1953, he became president of Gem Irradiation Laboratories, a company he founded to explore the possibility of selling irradiated stones in the legitimate market.

Frederick Harvey Pough was born in Brooklyn. He received his undergraduate degree from Harvard and a master's degree from Washington University. In 1935, he earned his doctorate in mineralogy from Harvard.

He joined the natural history museum staff as an assistant curator in 1935. From 1964 to 1967, he was director of the Santa Barbara Museum of Natural History.

In the 80's and 90's, Dr. Pough worked as a consultant and wrote a monthly column on gems and their formation for Lapidary Journal, a trade magazine for gem cutters and jewelers.

A Harvard researcher named a mineral, Poughite, in his honor in 1968, based on his work in studying and describing similar minerals known as the iron tellurites.

Dr. Pough's first wife, the former Eleanor Hodge, died in 1966. A second marriage ended in divorce. He lived in Reno, Nev., before moving to Pittsford two years ago.

He is survived by a son, F. Harvey Pough, of Pittsford, a biologist at the Rochester Institute of Technology; a daughter, Barbara P. Moore, of Pittsford, a museum conservator; a brother, Harold, of Wynnewood, Pa.; and three grandchildren.
Frederick H. Pough, Writer of Gem Guide, Dies at 90

By JEREMY PEARCE

Mineralogical Museum of Harvard University, which received part of Dr. Pough's personal collection, said the scholar had been associated with the museum for more than 30 years.

Dr. Pough, who was a graduate of Harvard, wrote a guide to minerals that became an essential tool for budding mineralogists.

A scholar who saw potential in the sale of irradiated stones.