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charlestonnaturalhistorysociety**



(from page 1)

Array in New Mexico observed planet sized clouds of OH (hydroxyl radical) some 30,000 miles away from the comet's nucleus. The presence of these clouds tends to confirm some theories about comets. Water ice in the nucleus sublimates into water gas or vapor. This vapor remains water for about one day, migrating away from the nucleus. After this time the sun's ultraviolet light breaks the water into hydrogen and OH. Huge hydrogen clouds had been observed around comets previously. The OH clouds indicate that the water

is coming off in jet like streams rather than uniformly. This jet action has been suspected for some time. Many other new things will likely be discovered about comets from Halley's current romp in our neighborhood.

On New Year's Day Halley crosses our orbit while on the 19th it crosses the orbit of Venus. Thus far the Comet has not lived up to its predicted brightness. This does not mean that Halley will be a flop. The watch word for comets is "unpredictable."

For personal enjoyment you may want to take photographs of the Comet or make pencil sketches. Instructions for doing either of these activities are available from the College of Charleston's Physics Department. Just send a self addressed, stamped business size envelope. How about a Comet Halley oyster roast? This would truly be an event with the legendary comet as the center of attraction. Be sure to have enough pairs of binoculars to go around.

address correction requested

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halley's comet

and other cosmic views

by dr. bill kubinec

If you have not seen Comet Halley yet, then make a resolution to participate in this historic pasttime. Sometime in December the naked-eye barrier was broken by an avid amateur astronomer somewhere on this planet. Surely that person felt a chill run up and down their spine. I did, along with feeling the weight of the comet's long history when I first saw Halley in November. This ball of dirty ice has witnessed many dramatic changes here on earth. It may even be around to observe the ultimate fate of humanity.

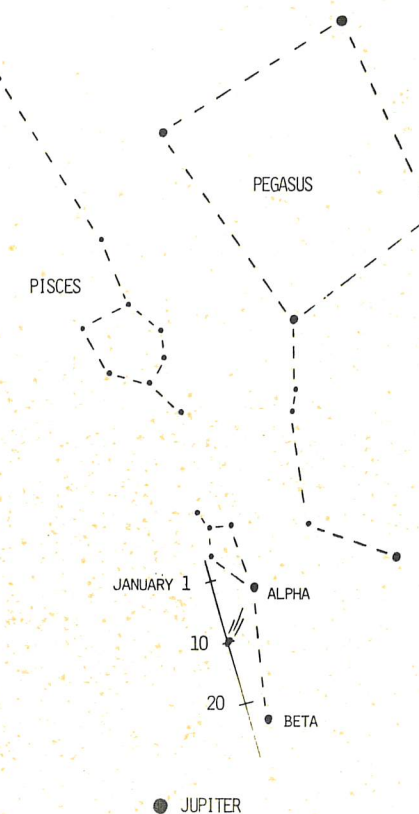
January's skies are breath taking with Taurus, Aurigo, Orion and Canis Major. However, the centerpiece is the just visible comet. Crisp clear evenings through the 15th are ideal for comet viewing. Start looking at the end of twilight which is about one and one-half hours after sunset. A very dark site is necessary for naked-eye viewing and binoculars will be a great help. Locate good ol' bright Jupiter in the southwest to west-southwest near the horizon. About 10 degrees to Jupiter's upper right is a medium bright star known as Beta Aquarii. Remember that a fist of arm's length covers about 10 degrees of sky. Ten degrees above Beta is the star Alpha Aquarii (same brightness as Beta). These are the brightest stars in this neighborhood. In the first three weeks of January, Halley is just to the left of the line joining Alpha and Beta.

Once you find the comet, you should have little difficulty locating it again. Each day the comet moves about one-half degree downward in the sky. Halley should have a stubby tail that should be present. Since the Comet is low in the sky it will

be visible for about two hours (beginning of the month) or less. Do get out to see Comet Halley this month because it will be gone until about March 8 or 9, and then just before sunrise. No viewing is

possible in February because either Halley is too close to the sun or the moon's light interferes. Recently, radio astronomers at the Very Large

(more page 6)

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january at a glance

January 4 - Pawley's Is.-Litchfield Christmas Count

January 14 - CNHS Meeting, Dr. Bill Kubinec

January 19 - Point of Pines Plantation, Edisto Beach

Boldface denotes CNHS sponsorship

volume xxxvii

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**January 14
CNHS Meeting
Dr. Bill Kubinec
Comet Halley
and Other Cosmic Wonders**

It has been a while since Dr. Kubinec, College of Charleston physicist, spoke at a CNHS meeting. This month he will talk about the latest cosmic rage (Halley's Comet) and other interesting phenomena of the night sky. Refreshments for the evening will consist of blue moon cookies (in each phase) and golden star cookies. To wash them down? What else but celestial tea!

January 19
Point of Pines Plantation
6 a.m.
Shoppers Port, Hwy 17 S

Burnet Maybank has invited CNHS to Point of Pines, his plantation on Edisto Island. This is primarily a birding trip but come prepared for anything. Bring binoculars, scopes and field guides. Dress warmly and bring a lunch. We will meet to carpool at Shopper's Port on Hwy 17S near Citadel Mall. Julian Harrison will be the trip leader.



When I learned of an early Christmas deadline during a phone conversation with our editor I thought, "What will I write about? There's just the same old stuff here." With that, a bright rosy mature male purple finch arrived at the feeders! "Well, that's one thing," I thought as I took pen in hand and watched about 30 mixed blackbirds devour my expensive seed. Suddenly they all flew away and a flock of robins dropped in! In 12 years we've had only an occasional robin or two in the yard so this flock was very exciting. Most were immature and brought with them the yard's first starling. I hope he doesn't tell his friends, we don't

want starlings supplanting juncos and goldfinches. I'm still waiting for the year's first evening grosbeak but with gold and purple finches, can grosbeaks be far behind?

Finally we have begun on our house in the country. I went down to see the first shovel full turned. The only thing missing was music swelling through the trees when a bald eagle flew overhead just as they began digging the foundation! Surely this is a good omen.

In France they call the wren "God's little chick" because they say the wren brought soft feathers and moss to the stable for a blanket for Jesus.

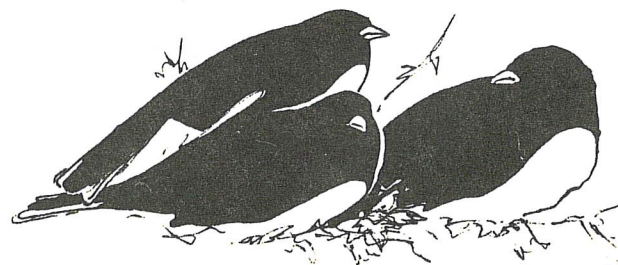
Here are some things to put out for your birds as winter sets in: berries stuck into a suet cake (for a balanced meal), strings of cranberries and popcorn, little ears of strawberry corn, little mesh bags of various seeds, and doughnuts (which are gobbled up in the north, but I have found to be unpopular here—maybe we should use biscuits!)

Right in the middle of Brooklyn, Joan Mullin gardens for wildlife. She has had 108 bird species in her 30' by 40' backyard. She has a lawn area with a brick walk for bug and worm eaters. All of her plants have berries and seeds. She has found that vines have higher berry production for their space and offers a wide variety; porcelain vine, snowberry, honeysuckle, several grapes, bitter-sweet, trumpet vine, wisteria and climbing roses. Of course she has hollies and pyracantha and cottoneaster also. The background consists of evergreens--hemlock, juniper, yews, and arbovitae. She has feeders and scattered seed too, but feels her mini waterfall is the most important thing for attracting birds. Moving water is her secret. For the birds of the Atlantic Flyway, this yard must be an oasis in a cement desert.

Birds have different mechanisms to cope with the cold. Long legged waders have arteries around their veins so the blood is rewarmed before getting back into the body. The Chickadees' high metabolism quickly converts their food into energy and warmth. A study shows the chickadee's summer heart rate is 346 pulses per minute. It gets faster in colder weather (up to 1000 times per minute at zero°)! Birds also fluff up their feathers to trap in warm air from their bodies as insulation. Their feet are controlled by muscles in their feather-warmed thighs. Many birds roost in thick evergreens as protection from the wind.

In my opinion, all of the gifts in the Twelve Days of Christmas should have been birds: 12 turnstones turning, 11 eagles soaring, 10 tree ducks whistling, 9 Antilean nighthawks, 8 egrets eating, 7 swan's a' swimming, 6 geese a' laying, 5 gold fin-ches, etc., etc. I hope you all had a merry Christmas and a birdy new year!

Bruce Krucke
101 Old Tavern
Summerville, SC, 29483



bird movements in january

There are no arrivals and departures in January, but the following is a list of the rarer birds seen:

Eared Grebe
Blue-faced Booby
Cinnamon Teal
Harlequin Duck
King Elder
Common Elder
Brant
Harlan's Hawk
Reddish Egret
Wilson's Plover
Stilt Sandpiper
Razor-billed Auk
Snowy Owl
Ruby-throated hummingbird
Western Kingbird
Great Crested Flycatcher

Vermillion Flycatcher
Purple Martin
Black and White Warbler
Orange-crowned Warbler
Yellow-breasted Chat
Northern Waterthrush
Northern Oriole
Rose-breasted Grosbeak
Painted Bunting
Dickcissel
Green-tailed Towhee
Clay-colored Sparrow
Lincoln's Sparrow
Lapland Longspur
Redpoll
Snow Bunting

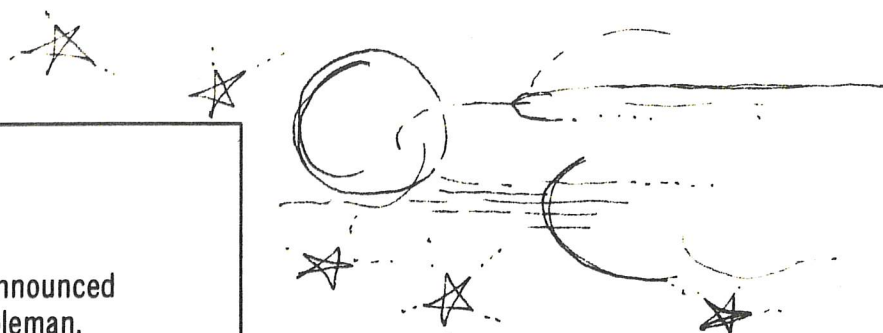
spring schedule

meetings

- February 11 — CNHS Meeting, To Be Announced
- March 11 — CNHS Meeting. Peter Coleman, Charleston Museum. "Fresh Water Fishes of South Carolina"
- April 8 — CNHS Meeting, Dr. John Bull, Curator of Ornithology, Museum of Natural History, New York. "Birding with Charleston Ornithologists — 1943" and "Galapagos Island Adventures"
- May 13 — CNHS Meeting, Dr. Chris Marsh, Ornithologist at Coastal Carolina. "A Naturalist's Visit to the Oregon Coast"

field trips

- February 15 — Bull's Island, shells and birds
March 16 — Santee Canal Sanctuary
April 12 — Woodsbay State Park
May 18 — Guillard Lake scenic area, Francis Marion National Forest

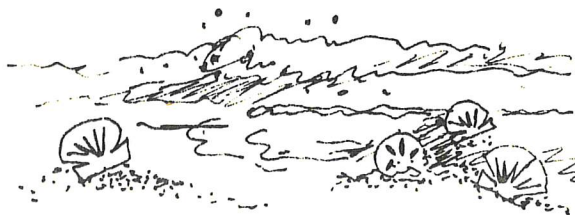


full moon

by pat leonard..

The big round moon hangs over the sea
lighting a broad path from the horizon to me.
The noisy surf rolls in with ease,
shimmering, glistening, silvery
foaming and swirling with flirtatious mirth
proposing marriage between ocean and earth,
a cluster of stars winking above,
merry witnesses to a charade of love.

from *Seashells and Laughing Gulls - Songs of a Sea Island* Winston - Derek Publishers, Inc., 1984



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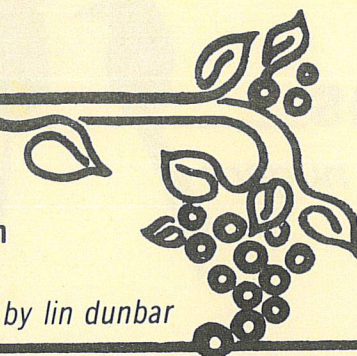
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focus on:

Resurrection Fern

Polypodium polypoides

by lin dunbar



Adorning the sprawling limbs of our stately live oak, the evergreen resurrection fern lives with the spanish moss and green-fly orchid in a unique epiphytic relationship.

Epiphytes, epi meaning upon and phyte meaning plant, do not derive any food or nutrients from their host--they simply use the host plant for physical support. Epiphytes are one of the groups of plants most dependent on rain for their moisture requirements, and their survival depends on their adaptation to extreme dry and wet conditions.

After a period of drought, this small fern, grey and shriveled, appears dead. Yet given enough rain and moisture, the withered fronds disappear and a vibrantly green, lustrous fern returns to life. Thus the common name--resurrection fern.

Although *Polypodium* is most often found growing on the bark of trees, it also grows in acid to circumneutral soil and less often in the moist and shaded cracks of brickwork. Its leaves are once divided, and usually about six inches long. Large, round spore cases, brown in color and without indusia, line the underside of the leaflet. The rootstock as well as the stipe is scaly.

The generic name comes from the Greek word, poly, which means "many," and podos, meaning "feet." Linnaeus gave this plant the name *Polypodium* for the rootstock that appears to "walk over" surfaces. This part of the plant has been made into a decoction and used medicinally as a purgative.

In his classic book, *The Golden Bough*, Sir James George Frazer describes the plethora of myths and legends surrounding the oak tree. He alludes that items connected to the oak tree, such as mistletoe and *Polypodium* (among others) are also considered as special as the oak itself.

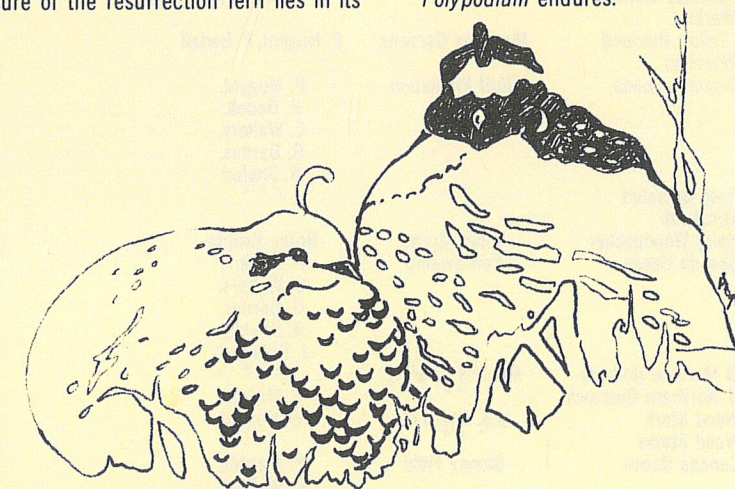
Frazer tells us that mythical fern-seed from the "oak fern" is supposed to bloom "like gold" on St. John's Day. The principles of homoeopathic magic (like produces like), would indicate that those who possess this golden seed will "discover a vein of gold or will see the treasures of the earth shining with a bluish flame."

Russian myths claim that if you toss the fern seed into the air, it will land to indicate hidden treasure. In Bohemia, if one mixes the golden fern-seed with money, no matter how much of the cash you spend, it will never decrease. If the fern-seed is gathered on Midsummer Eve or at Christmas (at the times of the summer and winter

solstices), the seed will possess the power of revealing treasures in the earth.

Although fern-seeds exist only in myths, the real treasure of the resurrection fern lies in its

beauty. From softening weathered barks with green flowing cascades to its use as a diminutive addition in a wild flower terrarium, the "magic" of *Polypodium* endures.



southeast wildlife exposition

learning something everyday

As an effort to further increase community awareness and enjoyment of wildlife, the Southeastern Wildlife Exposition is sponsoring an extensive seminar series and two symposiums during its fourth annual show, February 14-16, 1986, in Charleston, South Carolina.

Prepared and presented by the South Carolina Department of Wildlife and Marine Resources, the seminars will cover everything from reading wildlife signs in the woods to reading the f-stop scale on your camera...from issues on managing small game in the field to managing all game in the kitchen...from techniques for sporting success to what's being done to give endangered species a sporting chance. The nearly 20 seminars, including special offerings "for kids only," will be augmented on Friday by a series of 14 short films.

For a more in-depth look at two critical wildlife conservation and management issues, the Wildlife and Marine Resources Department is

coordinating two separate symposiums. On Friday afternoon the topic is game management on public lands. Saturday's focus shifts to waterfowl, with particular attention given to the Mottled Duck, Wood Duck and Canada Goose programs.

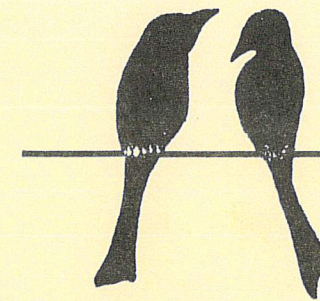
All the presentations -- seminars, films, symposiums -- will be held at the Gaillard Auditorium. The hour-long seminars begin at 10:30 AM, Friday and Saturday, and at 10:20 AM on Sunday, and continue through the day. Both symposiums run from 2 to 5 PM.

For Further Information Contact:

Ms. Gail Wright

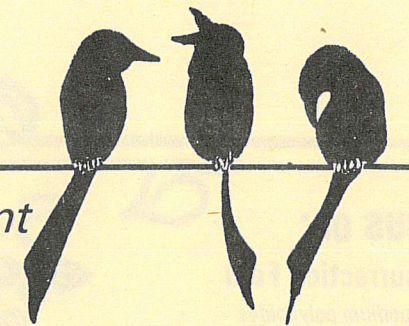
"Southeastern Wildlife Exposition Seminars"
South Carolina Wildlife & Marine Resources
Department

P.O. Box 167, 1000 Assembly St.
Columbia, SC 29202
(803) 758-0001



observations

by perry nugent



Date	Observation	Location	Observers
9/13	**1A Bald Eagle	Seabrook Is.	P. Nugent
	**1 Peregrine Falcon	" "	" "
	1 Merlin	" "	Many Observers
	1 Chestnut Sided Warbler	" "	P. Nugent
10/13	10 Yellow Rumped Warblers	Magnolia Gardens	P. Nugent, P. Bedell
10/19	3 Common Loons	Bluff Plantation	P. Nugent, P. Bedell, C. Walters, G. Barnes, A. Shahid
	1 Rose Breasted Grosbeak	" "	" "
10/23	1 Hairy Woodpecker	Kings Grant	Bruce Krucke
10/26	7 Canada Geese	I'on Swamp	P. Nugent, C. Walters, G. Barnes, A. Shahid, J. Robinson
	250 Marbled Godwits	Moore's Landing	" "
	**1 Northern Goshawk	" "	P. Nugent
10/31	1 Wood Stork	U.S. Veg. Lab	P. Nugent
11/1	2 Wood Storks	" "	" "
11/2	1 Canada Goose	Stoney Field	P. Nugent, C. Walters, G. Barnes, A. Shahid, B. Krucke, S. Taylor
	**1 Hudsonian Godwit	" "	" "
	2 Ground Doves	" "	" "
	1 Greater Black-backed Gull	Patriots Pt. Pitt St. Causeway	P. Nugent
11/4	1 imm. Great Cormorant	Middleton Gardens	B. Krucke, Many Others
11/5	**1 Golden Eagle	near Minim Creek, North Santee	H. L. Holbrook
	**8 White Pelicans	" "	H. L. Holbrook, M. Prevost

**— Rare, uncommon

comments by perry

Northern Goshawk: On Oct. 26, 1985, Charlie Walters and I noticed a kestrel scolding in the Moore's Landing parking lot. A large accipiter flew out of the trees with the kestrel in hot pursuit. It flew south. It was about twice the size of the kestrel, light grayish-white below with a dark cheek, crown and a dark grayish back. A white eyebrow contrasted strongly with the crown and cheek; obviously an adult northern goshawk. This is second goshawk seen in the area in 1985 (see Oct. '85 *Squawk*).

Hudsonian Godwit: On Friday, Nov. 1, I received calls concerning a Hudsonian Godwit seen by Steve Compton at Brittlebank Park. At dawn 11/2/85, Charlie Walters and I arrived to search for the rare bird. Soon many others joined the hour long fruitless search and we decided to go to Stoney Field. We found the large shorebird feeding with killdeer and ibis. Through 20x-40x scopes, the group observed the large godwit. It had a black tail, white rump, a two toned, slightly recurved bill. Winter plumage was grayish-brown with black axillaries and wing linings and narrow white wing stripe. We made reference to 3 field guides in making our conclusion.

The report of the golden eagle and the 8 white pelicans was sent in by Peter Manigault and was greatly appreciated. These birds were on his property on the North Santee River.

This is a time when rare birds can be found. If you see some that you believe to be uncommon or rare, please report them to me at 2260 Dallerton Circle, Charleston, SC 29407.

