GEOLOGICAL SOCIETY NEWS LETTER

Volume 15, 1949

1949 INDEX TO GEOLOGICAL NEWS LETTER
Volume 15
Compiled by Helen M. Haven

S U B J E C T I N D E X

AUTHOR INDEX

****

GEOLOGICAL NEWS LETTER

OFFICIAL PUBLICATION OF THE

VOL. 15 NO. 1 PORTLAND, OREGON January 1949

GEOLOGICAL NEWS-LETTER
Official Publication of the
Geological Society of the Oregon Country
421 Morgan Bldg. Portland, Oregon
POSTMASTER: Return Postage Guaranteed

THE GEOLOGICAL NEWS - LETTER
Official publication of the
GEOLOGICAL SOCIETY OF THE OREGON COUNTRY

The Geological NEWS - LETTER is issued monthly.
Yearly subscription: $2.00 Single copies: 20¢
Communications and material for publication should be sent to the Editor.
Change of address and subscriptions are required 30 days in advance of date of change, and should be sent to the Business Manager.

MEMBERSHIP APPLICATION
GEOLOGICAL SOCIETY OF THE OREGON COUNTRY

Qualifications and dues:

Applicant must be sponsored by a member and recommended by the Membership Committee. A knowledge of geology is not a requisite. There is no initiation fee. A Member shall be over 21 years of age; a junior member between 18 and 21. A single membership may be held by husband and wife and their children who are under 18 years of age. The dues are $3.50 per year ($1.50 for Junior members), payable in advance, and include one subscription to the Geological NEWS - LETTER. Dues of members living in counties not adjacent to Multnomah County are $2.50 per year.

Date . . . . . .

I, _____ (please print full name) do hereby apply for membership (junior membership) in the Geological Society of the Oregon Country, subject to the provisions of the By-Laws.

Home address . . . . . Phone . . . . . .

Business address . . . . . Phone . . . . . .

Occupation . . . . . Hobbies . . . . . .

I am particularly interested in the following branches of geology: . . . . . .

. . . . . I enclose $_____
for the year's dues, March 1 to March 1. (Checks payable to the Society)

Sponsored by _____
(member)

_____
(signature)

SOCIETY ACTIVITIES

LECTURES: On the second and fourth Fridays of each month in Public Library Hall, S.W. 10th Avenue and Yamhill Street. Watch the Oregonian and Oregon Journal for announcements. Meetings start at 8:00 p.m.

TRIPS: An average of one field trip is held each month. Suggestions for trips should be given to Leo F. Simon, BE 0300, or LA 0549.

LUNCHEONS: Every Thursday noon at the Chamber of Commerce, 824 S.W. 5th Avenue between Yamhill and Taylor streets. Luncheon 85¢.

JANUARY MEETING ANNOUNCEMENTS

Friday Jan.14 — No meeting. Audubon Screen Tour will be held on this date.

Friday Jan.28 — "Igneous Rocks in the Coast Range of Oregon," by Mr. Parke D. Snavely, Jr., Supervising Geologist, Fuel Section, U.S. Geol. Survey. The lecture will be illustrated by colored slides.

JANUARY FIELD TRIP

To be announced.

* * * * *

MUSEUM WORK NIGHTS

Lloyd Ruff announces that the Museum work room at N. E. 12th Ave. and Clackamas St. will be open for business every Tuesday and Wednesday evenings. All persons wishing to help with the classification and arrangement of museum specimens will be welcomed by the management.

****

REPORT OF NOMINATING COMMITTEE

President . . . . Leo F. Simon
Vice-President. . F. L. Davis
Secretary . . . . Miss Miriam Shepard
Treasurer . . . . Norris B. Stone
Director . . . . Mrs. Leslie W. Bartow

Respectfully submitted,

Kenneth N. Phillips, Chairman
Mrs. Lloyd Ruff
Miss Glenna Teeters
Rudolph Erickson
A. D. Vance

****

MEMBERSHIP

New members

Mr. and Mrs. Rolf A. Schumacher, 3927 N.E. Mallory Ave.,Portland, GA 9481

Membership renewed

Miss Arline Shaw, 6956 N. Columbia Blvd., Portland 3, Oregon

Change of address

Miss Sally E. McCoy, 3511 S.E. Alder Street, Portland 15, Oregon EA 2023

****

LOOKING THROUGH THE HALE TELESCOPE
Introduction by Carl Price Richards

The public, generally, has shown considerable interest in the great Observatory on Palomar Mountain, with its telescope of four times the light-grasping power of the previous world's greatest. Many individuals must be wondering just what it would be like to see some well known celestial object through it, but few - very few - will ever be able to satisfy such an ambition. The best alternative is to read a good account by an experienced scientist of what he saw as he looked through the eye-piece of that great instrument when it was trained on one of the sky's most fascinating objects.

Such an account appeared in the August 1948 issue of "The Strolling Astronomer" which is the official organ of the Association of Lunar and Planetary Observers, published by the Institute of Meteoritics at the University of New Mexico, Albuquerque, N.M. Mr. Walter H. Haas is the editor and Mr. Thomas Cragg the author of the article, both of whom have kindly given their consent for the publication of the article in the "Geological News-Letter." Mr. Cragg is a resident of Los Angeles and is a most active planetary observer, both with a 6-inch reflector of his own and with the excellent 12-inch refractor at the Griffith Planetarium.

Mr. Cragg's article follows:

SATURN WITH THE 200-INCH
by
Thomas Cragg

As we know, the giant 200-inch telescope was dedicated as the Hale Telescope in honor of Dr. George Ellery Hale. This dedication took place on June 3, 1948, in a very fine ceremony lasting about two hours. Several speeches were given by various members of contributing organizations and were all very good. However, most of the readers of our paper are, I believe, more interested in what we did that evening.

It all started when a rumor began flowing around that there was to be a "Press Conference" later on that evening after most of the people had left. It was understood that they were to get a look through the telescope to report to the public of the nation just what an object looked like through the 200-inch. Before it had become completely dark, the dome was closed, and a 45-minute movie taken by Edison Hoge of Mt. Wilson was given. This was one of the best movies on the construction of the instrument that I have had the pleasure of attending. Upon conclusion of the movie, the telescope was set up for observation. It took some time for the mirrors to be lined up and the instrument set up on Saturn, which was to be the first object viewed that evening. I don't suppose there were more than 40 or 50 people at the most in the dome during the time of observation. Of course, with my luck, the seeing was certainly nothing to rave about. I would estimate the seeing at about 2.* Dr. Bowen (Director of Mt. Wilson and Palomar Observatories) who was standing near the eye-piece during the course of observation, claimed the seeing was about 1. When I placed my eye at the coudé focus of the telescope, the first thing that impressed me was that the object was so brilliant that finer details were obscured on the ball itself. Especially

*On a scale of 0 to 10, with 10 the best.

true when working with planetary detail is the interesting effect that occasionally, when looking with bad seeing, the seeing will steady down for a moment and permit details to be observed quite well. Such was the case now. The first thing I thought of was to find out what the rings were like, as I knew that with smaller telescopes the seeing would have to be excellent in order to see anything at all.

When the sudden steady-moment did occur, the following could be said to have come out. (1) Encke's Division was resolved as a band of definite width, but was distinctly a band and not a complete space-gap void. (2) Cassini's Division was the space-gap division it is usually contended to be and was easily visible around the entire visible part of the ring. (3) The Third Division came out, very thin, but to me it appeared definitely to be a black line or a space-gap rather than a band, as has been described by most of the A.L.P.O. (4) The Fourth Division was also seen and was just a mere trifle thinner than the Third Division, but was also a space-gap rather than a darkening. During one observation with a 12-inch Zeiss refractor, Mr. Tom Cave of Long Beach, California, and I were under the impression that the Third Division was really two very narrow thin streaks, but this observation with the 200-inch seems to confirm what was originally thought by members of the A.L.P.O. - i.e., a single division. (5) The Crape Ring was definitely visible around the entire visible part of the ring, but the division which has been observed in this ring was not found by me with the 200-inch that evening. (6) The space-gap between the Crape Ring and Ring B was also not visible during this observation. The alarming thing that struck me besides the extreme brilliancy of the ball, were the three satellites which were in the field of view at the time. They were of about 10th magnitude, and through the big telescope they looked about like 3rd magnitude stars in a 6-inch telescope.

By this time it was the next person's turn in line, so I had to leave the eyepiece. I was trying to wait for another good spot in the seeing, but no more came along. This observation, I believe, should certainly give considerable light on the disputed existence of the two divisions which many of the members of the A.L.P.O. have observed. During the course of the observation a 7-inch focus, negative telescope was used for an eyepiece (so I understand) giving a power of around 700x.

****

GEOLOGICAL NEWS - LETTER INDEX FOR 1948

Secretary Miriam Shepard has kindly offered to prepare the index for the 1948 News-Letter and the editor has kindly granted her the necessary permission; but owing to an unavoidable delay, we are asking the readers to kindly have patience for another month when we hope to have the index ready.

****

AUDUBON SCREEN TOURS

"Wild Life Down East" will be the subject of the next Audubon Screen Tour which will be presented by Carl W. Buchheister Friday, January 14th. (There will be no meeting of the Geological Society of the Oregon Country that evening.) The lecture will be given at Franklin High School at three o'clock in the afternoon and at Benson High School at eight o'clock in the evening.

* * * * *

ASTRONOMY LECTURE

January 19, at 8:00 p.m. in Reed College Chapel. Dr. Pearce, Director of Dominion Astro-Physical Observatory, Victoria, B.C. - "Our Wonderful Universe" - a lecture on popular astronomy, illustrated by slides. Under auspices of Astronomical Society of Pacific.

****

BALDWIN'S TRAVELOGUE!

Paraphrasing Vergil - We sing not of arms and of men, who setting out from shores of Troy, and so forth - we sing of the traveling Baldwins - Gladys and Raymond - who on June 30, 1948, retired from Government Service after some 31 years, and on July 6 left Portland, Oregon, traveling into a far country, namely Banff, Lake Louise, and Jasper, with brief stops at Pomeroy and Spokane, Wash.

Ten days in the Canadian Rockies, enjoying it every bit as much as on several previous vacations. Had intended to continue eastward through Canada, but found Highways were anything but a joy, due to lateness of season (2 months up here) and no road work during the war years. So we dropped back into Montana from Calgary and continued on our way. Never saw the range looking better - many more cattle should have been grazing on the fine grass.

Visited Mt. Rushmore National Memorial. This Memorial has been carved from solid granite at the peak of the Mountain. Stayed in the Black Hills over Sunday to see the Passion Play at Spearfish. On to the Badlands, properly named, into the corn belt, and what prospects for a bumper crop! In fact we were continually exclaiming over the corn fields all the way from Dakota clear across the states into New York. Twenty-eight miles west of Pierre our left rear tire blew out - in 10 minutes an AAA truck was alongside giving us First Aid. Wonderful to belong! But don't get your hopes too high - it may not happen again in a life time, that a tow car would be cruising right where you need it. Somebody in distress had phoned for help, but it was not us!

On through Soybean and corn fields, into Minnesota to look over Gladys' old home town and visit relatives - another Ray Baldwin, by the way. Through Wisconsin dairy and tobacco land, where we were amused by one road sign reading "Swiss Cheese and other Antiques." Into Chicago where we visited our head office in Agriculture, and former Portland associates. Out of Chicago a few days later through the negro belt - 400,000 live here, and we could believe it, as we were the only whites anywhere for miles and miles. Stopped in Pittsburgh for a couple days with relatives, then on to Niagara Falls for a three-day honeymoon. Ray had been there in 1901, but this was Gladys' first view of the Falls. The story of Niagara Falls in the Post was much appreciated by both of us, having been there so recently.

On to Ilion, N.Y., where Gladys' sister was spending her vacation with friends, just to call. These friends, strangers to us, insisted that we stay over Sunday with them in their lovely home. Talk about Western Hospitality! They took us to a Sunday concert out on the shore of a lovely lake on the Clark Estate (Singer Sewing Machine). This is a weekly treat to the countryside, and some 3000 people were there. Pipe organ on the outdoor platform, song leader and everything. Then to Cooperstown, where baseball was born, to see the diamond and the museum containing mementoes of players from the year One.

Stopped at Center Brunswick, N.Y., to call on a friend whom Ray had not seen in 19 years. Next stop was Harriman Park to see Lotus Simon, who was there as a Counselor in Nature Study. Did we have a time locating her in the middle of the Forest! Then on to Jersey, Ray's home town, where his brother had been in poor health for several years. After a couple weeks there we took Ray's sister, and Gladys' sister, and away we went for a tour of New England. Had one night in the middle of Lake Champlain - did you know there is a chain of islands down the middle of that lake joined to the mainland by a causeway? Neither did we, but we had a wonderful moonlight night on the lake. On through the Green

Mountains and the White Mountains, lovely country everywhere, and grand weather too. Not so much impressed with Maine - out to Bar Harbor to see what the fire had done a year ago, and it was plenty. Through Portland, into Boston on the hottest day of summer. IT WAS HOT! A college lad took us on a tour of Historical Boston and vicinity which was worth while in spite of the temperature.

Back to New Jersey over the Merritt Highway through Connecticut one of the most beautiful drives in America - 125 miles with no cross lanes cutting through, at 45 to 55 MPH. No stops for anything, no red lights, no filling stations, no nothing! We repeated this drive in October on our second trip to New England.

Gladys and her sister stopped in New York for a week of shopping and sight seeing - Radio City and everything! More fun!

Ray's brother passed away on September 2, after which it seemed desirable for Ray to tarry in the homeland for some six weeks. It was hard to leave his two sisters and other relatives, and the many friends with whom Ray had grown up. We finally started for Washington intending to return later for our foliage trip to New England. However, we found on inquiry that the foliage was at its peak "right now," so after a few days at Asbury Park, we again headed north, for a most delightful two weeks in Vermont and New Hampshire and the Berkshires.

Arriving back in Newark on October 12, we left a lot of our belongings in the car on a private parking lot, as we intended to go on south in a day or two. Next morning we found the lock had been broken and most of Ray's clothing had disappeared, along with a camera, binoculars, opera glasses, and other things. Fortunately, Ray had another suit or two in the house, else he would have had to continue the trip in a barrel.

On to Washington for a ten-day visit with Department associates and other friends. Delightful weather all the time, and Ray walked blisters on his heels. Driving was a nightmare in Washington, and we did as little of it as we could and still get around. We left on November 2nd, little guessing what the headlines would proclaim next morning. But who did? The situation looked so gloomy to a Republican, Ray did not see too much of Williamsburg, Virginia, where we spent several days visiting the Colonial Homes and other historical places which have been restored with Rockefeller funds. A must on any tourist's schedule. To Jamestown, Yorktown, and on to Richmond, for leisurely tours. We had stopped at Gettysburg on the way to Washington, and Ray at least got a lot out of the Civil War history reviewed there.

Our weekend at Natural Bridge, Virginia, was delightful too. A clear, cold moonlight night, - we with some 50 other tourists, went down to the bottom of the river chasm for the illumination and music - very impressive indeed. We wish you might all hear John Charles Thomas sing "The Lord's Prayer" in that setting.

On to the famous Skyline Drive in Virginia overlooking the Shenandoah Valley, where we had our first disappointment in weather. Clouds hung low over the mountains, and the view was quite lost. However, we came back the same way next morning, under a blue sky and bright sun, and found the Shenandoah Valley quite as beautiful as the folders state.

Through West Virginia's coal mining sections, shabby little towns, men with lunch pails and dirty faces! Coal and soot everywhere. One wonders if the miners are not justified in asking anything for the kind of life they have to live.

On into Kentucky, more of the mining and shabby little shacks, and poorer roads. Perhaps our new Vice President will do something about this in his home state. We spent a week at Berea, visiting on the campus of Berea College, where Gladys' sister is on the staff. A most interesting place, and unique in many ways. Students are mostly self-supporting, all are required to work at least part of their way. Many come from the mountain regions of the southern states. No smoking is permitted on the campus, and no smoking at all by any of the faculty! No tips at the hotel either - students do all the work, and are being taught the dignity of work. A fine idea. Is there another place like this!

We visited the Calumet Farm at Lexington, where we saw the retired Whirlaway and other racers. Citation was not at home. This is a beautiful farm country, miles and miles of the famous blue grass, white fences and barns that look like clubhouses and palatial homes.

On through the Great Smoky Mountains, where Ray remarked that the West had better look to its laurels for scenery. This is indeed a scenic wonderland. We continued on, reviewing Civil War history at Chattanooga, Chickamauga, Atlanta. Macon, and over the line at last into Florida, just before Thanksgiving. We shall probably spend the winter here.

We are at Lake Wales, a town of some 7500 in the midst of orange and grapefruit groves, with many small lakes, right in the center of the State. The famous Bok Singing Tower is here, and we have enjoyed several concerts by the Carillonneur, Anton Brees, who gives a recital on the bells four times a week. The park surrounding the beautiful Tower is most peaceful and restful. "The grey Creole and the pink Etowah marble are from Georgia, and the Florida Coquina rock is similar to that used by the Spaniards at St. Augustine. When the Carillon plays the whole Tower bursts into song."

One-third of all the citrus fruit in Florida is grown in this county (Polk), and we may well believe that from the great number of huge vans on the roads everywhere, carrying the fruit to the plants for packing, processing, and shipping.

Our address is P.O. Box 194, Babson Park, Florida. We would be glad to hear from our friends everywhere. HAPPY NEW YEAR TO ALL!

GLADYS AND RAYMOND BALDWIN.

****

FLEAS CONQUERED

Carl Price Richards, our Salem astronomical and flea specialist, sends us a copy of a letter from Albert G. Ingalls, who conducts the Astronomy Section of Scientific American. Mr. Ingalls quotes at some length from Harold Williams' "Swift's Poems" containing the lines which Mr. Richards quoted in his letter published in the December News-Letter. We are glad to note that the flea controversy has been run to earth, and are willing to let it remain at rest. We never did like fleas anyhow.

****

LUNCHEON NOTES - DECEMBER 2, 1948

Fourteen members were present. Pres. F.W.Libbey, in the Chair, had a specimen of cinnabar in an unusual matrix. Sec. Miriam Shepard passed around a book, Between the Pacific Tides, dealing with her special interest of shells.....Lloyd Ruff announced "M Day" - the day for moving the museum material from the Municipal Auditorium to the temporary museum at 908 N.E. Hassalo Street.....A.W.Hancock had some pamphlets from the American Museum.....Leo Simon hoped that a trip to the Molalla fossil leaf location could be arranged.

****

GEMSTONE MINING

Below are extracts from a letter to Mr. Kraft, known to many of our members as an authority on jade, written by Mrs. Bertha E. Schell. This letter gives us some of the "down to bed-rock" facts about the mining of gem stones and the hardships of life on the real frontier.

Her husband had been in a hospital in Prescott for an eye operation. She writes:

"Mr. Schell was gone 8 weeks and I was here alone. The nearest neighbor about four mile and him not a good one. I have one neighbor who recently bought a large cattle ranch 20 mile from here. He has a small plane which he keeps at a private air field about 7 or 8 mile from here. They are a grand family and every couple or three days he would fly over this canyon and circle round and round. I'd dash out into our small alfalfa patch and spread a white sheet as a signal that I was O.K. but had I been ill or needed help I was to spread a red one and they would have come to my aid.

"Believe me, neighbors like that are truly a blessing from God.

"I sure didn't have a bed of roses here either."

* * * * * * *

"My horse got snake bit too while I was here alone - must have been grazing along the ditch and the rattler got him from the bank for it was high up on his neck just in front of the withers. It must not have got much of a bite on him. I seen it all swelled up and thought maybe it was going to be a fistula then the hair come off & there was the fang marks and a chunk rotted out - a definite rattler bite."

* * * * * * *

"I have not done much mining lately it is terrifically hot in the cuts and one just can't stand it to work in there besides I had all the gardening and irrigating to do and the alfalfa to mow and stack for winter. We have to mow it the old fashioned way - with a scythe - it is not too bad so I don't mind it.

"Now about that stone I called sagenite agate - yes, I have sold a little though it is one of my more recent finds - I found it about a year ago this coming September.

"I sold some to a man in Prescott. He is a Canadian doctor. I traded some to another fellow in Prescott. He done some cutting for me and made me some letter openers mounted with cabochons from my claims here. I wanted them for gifts to my sisters & others. . . . I am no money grabber- and I won't send out trashy rocks to anyone. Now as to a name for it - I have tried all kinds of names and I never fail to come back to one of the names you suggested for it and that one is Schellfern. I have approximately 100 pounds mined out & washed clean and stored in my storehouse.

"Now as to the amount of it - there is approximately 500 lb. in sight and the ledge or vein going on into the hill. But bear in mind that these veins can change almost in a foot's distance and be an altogether different rock with no pictures or anything. Then again it may or not change back again. But 500 lbs. is quite a lot to cut gems out of, it seems to me.

"And now about that white material you called white jade, well, it could be called white jade as it is the nearest to jade of any rocks I have seen. I want to do more work on that vein before I make any statements on it for I want to be sure of what I tell you and not be guessing.

"I'll try to go in for my mail in about two weeks and maybe I can have something to report on it by then. We have had wonderful rains here since July 18 - breaking one of the worst droughts in the history of Arizona. We can stand a lot more rain yet. They tell a story about an Arizona cattle man who was on the ark with Noah. After the rain of 40 days and 40 nights he looked out the window and said to Noah: 'A couple more showers like that the grass will be good.'

"I'm not so good with this pen as I am with my pick and shovel. Best of wishes to you always.

Sincerely,

Bertha E. Schell"
Arrowhead Mine Camp
Campwood, Arizona

****

AN INTERESTING FIELD FOR EXPLORATION

This is not an invitation for anyone to invade the private preserves of the editor, interesting and archeologically rich as they may appear. It is simply a report of progress or lack of progress, as it may appear to you. The expedition reported here was organized hastily on call of the editor's son who wished to use a certain cut. He believed it was in the editor's basement print-shop in a box with other small cuts that had been in use ten to twenty years ago.

Be it known that very little printing has been done in the shop since the boys moved into their own homes. Occasionally one of them has come over for an evening to run off a small form on the old Pearl press, and at Christmas time the editor himself descends from the main floor of his domicile where he has a desk and typewriter, to print a batch of envelopes or to put some needed explanation on the back of his Christmas cards to ward off questions as to why - in whatever place the inquirer has the best acquaintance - he has used this or that scene to carry his yuletide greetings to his many friends.

Within the last geological period the furnace has been replaced, with much removal of partitions and encroachment on the already limited space of the shop, and the electrician has strung wires and bored holes here and there, all to the detriment of well-known print shop order and decency, and a layer of air-borne sediment has covered everything that was exposed.

It was thought best to look in the most accessible places first since the desired cut might be in one place as well as another.

A galley of standing forms - some of them of a previous era - was inspected without success. Other galleys were unstacked and looked over with no better luck. A box of sundries on top of a type cabinet yielded specimens of stibnite from Stibnite, Idaho, a fossil clam, a small piece of coral, a red clay pipe of uncertain ancestry which had been picked up on Swan Island during the filling operations, a bit of lava from a lava cave south of Bend and an old muzzle loading pistol, made in England and bought in Mexico fifty years ago, all heavily coated with dust. No cut there.

A quick glance down the front of a cabinet of type cases brought temporary joy to the editorial heart when his favorite claw-hammer, lost these twelve months, was discovered and promptly carried to its rightful place in an adjoining room. (Things do have rightful places in this establishment, we should like to have it known.)

A small sheet-iron stove and a big carton of folded wrapping paper were moved to give access to shelves on which the box of cuts might be. And box after box of cuts were opened. (What in the dickens a printer keeps these old cuts for is beyond comprehension, but they are kept.) Most of them were so large that they were not inspected closely. Then came the boxes of cards and remnants of paper, surplus from old time jobs, replaced on the shelf in case some of them might be needed for a short run where the kind of paper was of no special importance. Some of these had been damaged on the fateful night when the men in the family were out of town and the hot water tank developed a leak just where it squirted a tiny stream the full length of the shelf full of cards, envelopes, and paper. All these boxes were opened on suspicion, until there was but one small box, strongly suspected of having cheap card cases in it, left to open, and there, believe it or not, was the missing cut with a few others of similar size. The joy of finding what had seemed hopelessly lost banished all the worried wrinkles from the editorial brow. The lights were turned out and by now the dust of discovery has again settled, and the "type lice," if any, have crept back into their crevices to lie in wait for the explorers of another era.

O.E.S.

****

DONALD O'CONNELL WRITES

608 N. Chester Road
Swarthmore, Pennsylvania
16 November

Dear Friends:

I am on the Washington Express, returning to Philadelphia from New York, where I go every Tuesday night for a series of lectures on recent psychoanalytical theories of neurosis. Philadelphia is about a half hour by train from Swarthmore.

My work at the college keeps me very busy. I do rat experiments every night for my assistantship (save occasional nights off, like this) and have seminars on Tuesday and Thursday afternoons. The rest of the time I spend in my own research, on the phenomena of transparency situations - a practically untouched field. I may use this material for my master's thesis.

Swarthmore, Pa., is a very quiet residential suburb. There isn't even a theatre in the city limits.

The countryside is beautiful this time of year, the deciduous trees turning to brilliant colors, and the weather is most clement. Truly an Indian summer.

I have access to a piano, though there is rarely time to play, and have enrolled in a class in bookbinding, which meets once a week. I have also joined the local music club, which holds a musicale the fourth Monday of every month. So I am not entirely lost in psychology.

There are many excellent plays, concerts, and lectures both at the college and in the city, and I occasionally attend.

My classes are unusually stimulating. Dr. Kohler is, as I expected, a genius - at least 50 years ahead of his contemporaries. It is a great privilege to hear him lecture.

I hope this finds you well. My research necessitates some prolonged inspections, but my eyes have behaved very well so far and I am very careful with them.

Affectionately yours,
Donald

LUNCHEON NOTES

December 9, 1948

The Christmas decorations on the tables did not distract the minds of the nineteen members from the solemn duty of prying into the Creator's secrets of how the earth is put together.....President Libbey had a pebble from the southwest side of Camino Island in Puget Sound and a specimen of iridescent limonite from Globe, Arizona.....Earl Minar had visited a factory which makes polished stone buttons, and brought samples of the buttons, and the slabs from which they had been cut. He stated that members of G.S.O.C. may buy partly finished buttons at a reduced price if they wish to polish them at home. He also had a copy of a letter from Mrs. Bertha E. Schell who is located at Arrowhead Mine Camp near Campwood, Arizona, to Mr. Kraft, telling about a new gem-stone which Mr. Kraft had recommended that she name "Schellfern".....May Dale had specimens of realgar and orpiment (arsenic sulphide) from Hobart Butte, and a small piece of lava from Paracutin..... E. N. Bates had some pictures from Alaska.....Mrs. Sunderland introduced her guest, Miss Stella M. Phelps.

* * * * *

December 16, 1948

Sixteen people squeezed in around the table in room 2, Chamber of Commerce, while two others sat at a small table in the corner. But even that was better than being out in the crowded dining room.....Dr. Olivia McHugh of Salt Lake City, and Verne E. Sunderland were guests.....Leo Simon reported that 10 people went on the Sunday trip to the Ginkgo leaf deposit near Molalla.....Dr. Stevens reported on the activities of the Oregon Museum Foundation.

* * * * *

December 23, 1948

Lotus Simon, home from school for the Christmas holidays, had a small collection of Miocene fossils from Maryland and Florida and some rocks from Maine. She told the group about her activities at Hog Island, Maine, where she had directed nature study at an Audubon camp during the summer. Life magazine photographed and "wrote up" the work of the camp. She will receive her master's degree in June..... Parke D. Snavely, Jr., had a large fossil from the coal deposits near Centralia, Washington. He is scheduled for a lecture before the Society on "Igneous Rocks in the Coast Range of Oregon." .....Fifteen people were present.

* * * * *

December 30, 1948

There was plenty of elbow room at the last G.S.O.C. luncheon of 1948 with only a dozen members in Room B, Chamber of Commerce.....Lotus Simon had several gastropod shells from the Florida coast and some Miocene fossils from Maryland including shark's teeth and pectens. She also brought a Geological Survey quadrangle map with the location where the specimens were collected marked on it. Quite a scientific report, if you ask us.....Lloyd Ruff said that the museum is open for work every Wednesday evening. They have had as many as twenty people report for work on one night.....Rudolph Erickson found some yellow colors in a turkey gizzard and began to dream of great wealth. The heartless and factual Bureau of Geology and Mineral Industries told him the yellow stuff was brass.....President Libbey brought a pamphlet, reprinted by the University of Washington Engineering Experiment Station, bearing the title "Concept of Graded Rivers" by J. Hoover Mackin.

****

GEOLOGICAL NEWS LETTER

OFFICIAL PUBLICATION OF THE

VOL. 15 NO. 1 PORTLAND, OREGON February 1949

GEOLOGICAL NEWS-LETTER
Official Publication of the
Geological Society of the Oregon Country
421 Morgan Bldg. Portland, Oregon
POSTMASTER: Return Postage Guaranteed

THE GEOLOGICAL NEWS - LETTER
Official publication of the
GEOLOGICAL SOCIETY OF THE OREGON COUNTRY

The Geological NEWS - LETTER is issued monthly.
Yearly subscription: $2.00 Single copies: 20¢
Communications and material for publication should be sent to the Editor.
Change of address and subscriptions are required 30 days in advance of date of change, and should be sent to the Business Manager.

MEMBERSHIP APPLICATION
GEOLOGICAL SOCIETY OF THE OREGON COUNTRY

Qualifications and dues:

Applicant must be sponsored by a member and recommended by the Membership Committee. A knowledge of geology is not a requisite. There is no initiation fee. A Member shall be over 21 years of age; a junior member between 18 and 21. A single membership may be held by husband and wife and their children who are under 18 years of age. The dues are $3.50 per year ($1.50 for Junior members), payable in advance, and include one subscription to the Geological NEWS - LETTER. Dues of members living in counties not adjacent to Multnomah County are $2.50 per year.

Date . . . . . .

I, _____ (please print full name) do hereby apply for membership (junior membership) in the Geological Society of the Oregon Country, subject to the provisions of the By-Laws.

Home address . . . . . Phone . . . . . .

Business address . . . . . Phone . . . . . .

Occupation . . . . . Hobbies . . . . . .

I am particularly interested in the following branches of geology: . . . . . .

. . . . . I enclose $_____
for the year's dues, March 1 to March 1. (Checks payable to the Society)

Sponsored by _____
(member)

_____
(signature)

SOCIETY ACTIVITIES

LECTURES: On the second and fourth Fridays of each month in Public Library Hall, S.W. 10th Avenue and Yamhill Street. Watch the Oregonian and Oregon Journal for announcements. Meetings start at 8:00 p.m.

TRIPS: An average of one field trip is held each month. Suggestions for trips should be given to Leo F. Simon, BE 0300, or LA 0549.

LUNCHEONS: Every Thursday noon at the Chamber of Commerce, 824 S.W. 5th Avenue between Yamhill and Taylor streets. Luncheon 85¢.

FEBRUARY MEETING ANNOUNCEMENTS

Friday Feb.11 — "A visit to Mt. Ranier's Paradise Park area," by Mr. Leo F. Simon. The talk will be illustrated with many Kodachrome slides showing the spectacular wild-flower vistas and the scenic beauty of the region.

Friday Feb.25 — Annual Business Meeting of the Society. There will also be entertainment in the form of slides or movies. Tickets for Annual Banquet will be on sale at this meeting.

FIELD TRIP

Sunday Feb.27 — Leo Simon has announced that a "basement" field trip will be held on this date in order to visit certain members' collections of minerals, fossils, and polished specimens. Meet at 1:30 at the Northeast YMCA located on the corner of N.E. Broadway and 38th Avenue. From that point the caravan will proceed to the basements. Transportation will be provided for those who do not have cars.

NEWS OF MEMBERS

Mr. and Mrs. Sam Reichen have written that they are still in Kimberly, Oregon, and unable to attend the meetings, but that they hope to be in Portland by summer.

Miss Ruth E. Coats and her mother left Tillamook January 20 for a trip to Florida via Los Angeles. They expect to make their headquarters in St. Petersburg. If the weather permitted, they planned to fly eastward from California.

****

DUES

Dues are now payable for 1949 - $3.50 except to members living in counties not adjacent to Multnomah County.

****

THE OREGON ACADEMY OF SCIENCE SEVENTH ANNUAL MEETING

Miss Miriam Shepard, our efficient and ambitious secretary, wisely "travelled by train" and reached Eugene in time for the Saturday session of the seventh annual meeting of the Oregon Academy of Science on January 15, 1949. She brought back the news that three members of the Geological Society of the Oregon Country were elected to offices in the Geology and Geography section of the Academy. Dr. Ira S. Allison of Oregon State College was elected chairman; Leo Simon of Portland, membership committee, and Miss Ruth Coats of Tillamook, secretary. The meeting of this section was in Room 101, Condon Hall, with Herman Clark as chairman. The program for the day follows:

1. "The known meteorites of Oregon": J. Hugh Pruett of the Oregon System of Higher Education (Read by Dr. W. D. Smith).

2. "Cubic quartz pseudomorphs in petrified wood": Lloyd W. Staples of the University of Oregon.

3. "The Long Tom, a former tributary of the Siuslaw River": Ewart M. Baldwin of the University of Oregon and Paul W. Howell of the U.S. Army Engineers, Portland.

4. "Tertiary woods in the light of the newly discovered Metasequoia": George F. Beck of the Central Washington College of Education.

5. "Petrographic study of the Marys Peak Intrusive": Albert E. Roberts of the University of Oregon.

6. "A recently discovered Entelodont from the John Day Basin": Robert G. Coleman of Oregon State College.

7. "A blue print for conservation in Oregon": Warren D. Smith of the University of Oregon.

8. "The Chewaucan-Summer Lake overflow channel": Ira S. Allison of Oregon State College.

9. "From trails to roads in Willamette Valley": John E. Smith of Corvallis.

****

PARKE SNAVELY ON "IGNEOUS ROCKS OF THE OREGON COAST RANGE"

A very inadequate crowd gathered in Library Hall, Friday, February 25, to hear Mr. Snavely's excellently prepared and illustrated lecture on a subject that should be close to all members of the Geological Society of the Oregon Country, but wasn't close enough to overcome the lethargy, lassitude, or the fear of slippery roads that beset the absentees.

Mr. Snavely had his subject so well in hand that he apparently believed that his hearers were nearly as well informed as he and, perhaps on that account, hurried his delivery so much that the editor, at least, failed to keep pace with his delivery. Perhaps we may be able to prevail upon him to allow the Geological News-Letter to reproduce the lecture in its pages. It will, however, be impossible to give our readers any idea of the beauty of the thin sections of the various rocks as they were projected upon the screen through a polaroid filter, and that will be a loss to those who were unable to be present at the meeting.

Owing to the reporter's inability to read his notes taken in the darkened room, no resumé of the talk can be presented at this time. O.E.S.

****

ANNUAL BANQUET

Date: March 11, 1949.

Place: Lewis and Clark College.

Time: 6:15 p.m.

Price: $1.75 per plate.

Chairman: Mr. Lloyd Ruff.

Speaker: Mr. A. W. Hancock.

Toastmaster: Mr. Phil Brogan.

Skits: Mr. Kenneth Phillips.

Program Design: Miss Dorothea Minar.

Decorations: Mrs. L. E. Kurtichanof.

Songs: Dr. Arthur C. Jones.

Accompanist: Mrs. A. W. Hancock.

Tickets: Mrs. Leo Simon - Phone BE 0300 or EM 0549. Address: 711 S.W.Ankeny.

Gifts: Mr. E. N. Bates.

Transportation: Mr. H. Bruce Schminky - EM 3903.

Photography: Mr. Orrin E. Stanley.

Bus leaves Trailways depot, S.W. Salmon Street between 5th and 6th Avenues, at 5:45 p.m. Arrives Lewis and Clark College at 6:00 p.m. Fare - 15¢. However, Mr. Schminky, EM 3903, will arrange transportation for all those desiring it. When you make your reservation, state whether you will want, or will provide, transportation.

To go by your car: Out Barbour Blvd. to large circle, lights at Terwilliger intersection, turn right and follow Lewis and Clark signs plainly marked. Turn in at first gate - park at right of gymnasium; dining room on right end of space.

Dr. and Mrs. Arthur C. Jones, Co-chairmen committee on arrangements.

****

BALDWINS BASK AT BABSON PARK

R. L. Baldwin writes from Babson Park, Florida, that he is enjoying the mild weather with temperatures about ten degrees above normal for that location. He and Mrs. Baldwin made a trip to Sarasota on the coast of the Gulf of Mexico with some friends, and plan to go back soon by themselves to really "do" the town. They drove to Vero on the Atlantic coast a few days later, Ray in his shirt sleeves with no data as to what Mrs. Baldwin wore or went without. They also are enjoying the recitals at Bok Tower. Mr. Baldwin enclosed with his letter to Pres. Libbey a clipping about a new kind of rock found in Georgia which appears to have possibilities as a building material.

****

FRDK, NEW MATERIAL FOUND IN GEORGIA, TOUGH AS CEMENT

by

William Burson
United Press Staff Writer

Atlanta - A new source of building material as tough as concrete, half as heavy and white as snow has been found in the north Georgia mountains, the State Geology Department has disclosed.

Dr. A. S. Furcron, assistant state geologist who made the discovery in Murray county, said the yet-unidentified stone may prove a boon to the construction industry in this area if it is found in large quantities.

Furcron said extensive geological "prospecting" is being undertaken to determine how much of the rock is buried in the rugged hill country.

The peculiar qualities of this cousin of marble and granite, plus the fact that the stone has not been uncovered or experimented with, prompted the geology department to call it simply "F. R. D. K." which means "Funny Rock, Don't Know."

Furcron stumbled onto "F. R. D. K." by accident while on a field trip to gather data for a publication, "The Talc Deposits of Murry County, Georgia."

He was first attracted by the unusual bluish hue of the stone and decided to chip off a chunk for experiments. Back home in his laboratory, he was unable to identify all of the elements contained in the rock.

Next, he turned on the heat, and "F. R. D. K." began to perform. In a special furnace at 2,000 degrees Fahrenheit, the stone bloated and expanded to become snowy white pumice so light that small particles began floating. Yet it retained its toughness.

From Miami Herald, December 26, 1948.

****

HOW TO FIND MRS. SCHELL

Following is an extract from a letter from Mr. Kraft telling Mr. Leash how to find Mrs. Schell whose letter about mining gemstones was quoted in the January News-Letter. This is printed to save disappointment in case you had planned to "drop in on her" some day when passing through Phoenix.

"So far as Mrs. Schell is concerned, you would not find her or anyone who knows her at Phoenix. You should have taken with you the long letter I sent you. The first letter of instruction indicated that you drive about a hundred and fifty miles from Phoenix to the edge of a cliff. Wait, back up a minute. Before you call on Mrs. Schell, it is necessary for you to write her about sixty days in advance and tell her when you are coming, and ask for specific instructions as to which is the best way, because some time the gullies are washed out. One road is usuable but another is not. Anyhow, you drive about a hundred and fifty miles to the edge of a cliff. There you leave your car and climb the cliff about a hundred and eighty feet, almost straight up. On the top of the cliff will be Mrs. Schell with a Ford pick-up truck, and she will drive you about fifteen miles along the top of the mountain to a cliff that goes down instead of up, but there you leave the pick-up truck and start to ride a horse, you on the horse or you leading the horse; then make your way down to the bottom of the cliff. Then you go aboard the horse and ride about six miles to the camp.

"So please do not try looking for Mrs. Schell anywhere around Phoenix."

****

AUDUBON SCREEN TOUR
Thursday, February 24, 1949

MATINEE - Lincoln High School - 3:00 p.m. Title "Backyard Adventures"

EVENING - Benson High School - 8:00 p.m. Title "Trails for the Millions"

LECTURER - Allan Cruickshank

Matinee free to school children. Schools in the southwest district will be dismissed for the lecture.

Evenings: ADULTS 60 cents, including tax. School children free, when with parents or group leaders.

Mr. Allan Cruickshank is an official lecturer of the National Audubon Society, as well as bird instructor at its nature camp in Maine. His photographs have been included in U.S. Camera Yearbook as among the best of the year, and have appeared in National Geographic, Nature Magazine, Audubon Magazine, Natural History, and Life, as well as in leading newspapers the country over. Feature stories on him have appeared in American Magazine and the magazine section of the New York Times.

His new book "WINGS IN THE WILDERNESS" has been a popular success. Arrangements have been made with the J. K. Gill Company, where his book will be on sale, for him to appear to autograph copies of this book, as well as the book "FLIGHT INTO SUNSHINE" by Halen Cruickshank, for which he was the photographer. These books will be on sale, also, at the lecture.

****

REPORTER HEADS HUNT FOR CARVER'S CAVE

The Minnesota Historical society has picked a newspaper reporter to find Carver's cave.

Discovered in 1796 by Jonathan Carver on the banks of the Mississippi a short distance below what is now the St. Paul Loop, the cave has been "lost" and Will Reeves, member of the news staff of the Dispatch and Pioneer Press, has been appointed to relocate it.

The cave has much historical significance. It was an Indian tribal chamber as well as a shelter for Indians on the march.

Reeves said he has appointed a committee to help him find the cave. All members have accepted. They are James Nankivell, president of the Minnesota Territorial Pioneers association; Mayor Edward K. Delaney; Ben W. Wilson, general passenger agent for the Burlington road here; George Reif, superintendent of the Ramsey County Boys' home; Richard R. Sackett, deputy director of the Minnesota Territorial centennial, and Franklyn Armstrong, St. Paul surveyor.

Carver's cave is said to have been created by an underground river and is believed to extend seven miles or more under Daytons Bluff. Erosion of a white sandstone bluff has closed the entrance. In 1912, Franklyn Armstrong's father and James Nankivell located the cave and opened a passageway. Sand then closed it.

Reopening of the cave is scheduled as an important function of centennial year in 1949. The committee hopes to have the opening ready for visitors next

summer. Plans to hunt immediately for the entrance have been made, Reeves said, and much of the excavation will be done by the Boy Scout troup of the County Boys' home. Archeologists believe the cave may produce important historical data.

From St. Paul Dispatch, November 7, 1948.

****

DR. JOHN ELIOT ALLEN AND FAMILY SEND GREETINGS

In case you have been wondering about the Dr. John Eliot Allen family (and who has not?) we are reproducing herewith, somewhat belatedly, a Christmas letter that "tells all." That is, all except how the editor longs for Margaret's "cleaning woman" or a reasonable facsimile thereof.

227 West Park Avenue
State College, Pa.
13 December, 1948

It still seems fantastic to us to think of ourselves as landowners in Pennsylvania! Not that we expected to be, so soon, but our lease in Shingletown was up on June 1, and the only way to get a roof over our heads was to buy one. Everything advertised was impossible. We were lucky, tho -- the campus grapevine led us to 227 West Park, and we had to decide in 30 minutes because another professor had his earnest money in his hand. We have a comfortably middle-aged part-brick house, that was hidden behind what looked like a half-acre of overgrown shrubbery. The chief attraction of the property is its location directly across the street from the most convenient side of the campus, with respect to the library, Mineral Industries Building, and baseball and football stadium. Sally's school is the best in town, only two blocks away, where she is in the third grade.

Our furniture arrived by van May 29th, the house was vacated May 30th, we moved in June 1st, and John moved out to camp to take over as Director of the Geology Summer Camp on June 5th, leaving the gals to do all the unpacking. Margaret's mother, Mrs. Moss, really took the brunt of it, when Margaret and Sally joined John at camp the next week.

Camp was wonderful, according to Margaret, because we had a cook and dishwashers. Camp was wonderful, according to Sally, because among the 35 to 40 boys who were there most of the eight weeks there were several who were "almost as much fun as uncles." Also she could go swimming with her Daddy at Whipple's Dam only 3 miles away. Camp was wonderful, according to John, because he was outdoors, working with likeable boys, and with A-1 plant and equipment, in a region of extremely interesting folded rocks (Silurian to you geologists). Only three nights during the summer were uncomfortably hot, since camp is in a wild and wooded part of the Appalachians, only 15 miles south of State College.

We took one trip during August to Washington D.C.- had good visits with Geological Survey friends, and the three girls, listening to their Voice of Experience (John of course) visited some of the most interesting parts of the city -- just enough to make them want to go back for more. However, John says we should see the geology of New England next summer!

Home again, we had time to enjoy the fact that while we were at camp Mrs. Moss, with student help, had mostly reclaimed our 97 by 150 foot wilderness into a respectable lawn and garden, complete with corn, beans, and tomatoes in the rear. The house inside was still to be reckoned with, however, and John was able to make only a good start, before school began in September. (The decorators say they are going to paper and paint beginning tomorrow, December 14.)

Being settled in town, we have discovered some of the advantages of being a part of THE Pennsylvania State College. Our milk, butter, cheese, and ice cream comes from the college model dairy; when we need apples or peaches we drive out to the fruit farm and select a graded peck or bushel basket-full. We can get eggs from pedigreed college hens, and vegetables in season from the experimental garden. Margaret's "cleaning woman" is a husky ex-marine "working his way" through the Ag school, and he can do in four hours what most women take a whole day to do.

In case you wonder why we don't write more letters, try to imagine a town of 7000, half of whom might be termed "colleagues" with similar interests, all determined to do something about it. People are friendly, and we enjoy so many of them -- and after all, we have to be forming new friendships or we would be too lonesome for you! So we say "yes" to about one-third of the things we are asked to do, with the result that Sally's stock question at dinner time, uttered in resigned tones, is "Where are you and Daddy going tonight, Mommy?" (John says that it isn't quite that bad!)

Add the fact that John has had to take on at least one new course each semester so far, and that Margaret is under some strain learning how to be a proper faculty wife, and you can see why you don't get letters on Easter or the Fourth of July.

Do help yourself to a large share of our best wishes for a Merry Christmas and a Happy New Year, and keep us on your list!

John, Margaret, Sally, and Mrs. M.

P.S. In case you are wondering about central Pennsylvania weather, it seems quite normal, because nearly every day someone tells us that it is "Quite unusual!" Anyway, we like it -- today was warm and balmy, no prospect of snow for Christmas, but anything can happen because we did have a flurry a week or so ago. John wants to add that the annual precipitation here (40 inches) is more than that of Portland (37 inches) but that it comes mostly at night during summer thunder storms.

****

LUNCHEON NOTES

January 6, 1949

Twelve geologists met in Room 2 at the Chamber of Commerce and found that the acoustics were bad, even in a small room.....Lloyd Ruff had some sections of diorite from diamond drill cores at the Detroit dam.....R. Erickson had a copy of the Geological Survey Report from 1882-3 that he was willing to give to the Society's library.....Thomas H. Hite, geologist with the U.S. Soil Conservation Service, told some interesting facts about his work.....Miriam Shepard exhibited an attractive book about shells.

* * * * *

January 13, 1949

A group of twenty crowded around a "T"-shaped table in the Chamber of Commerce dining room and competed with a fraternity group for volume of voice. The result was disastrous to the G.S.O.C., but by paying strict attention one could understand his nearest neighbor.....Dr. and Mrs. A. C. Jones were present after a long absence, and Mrs. R. F. Cleveland, Mrs. Clara Warner, and Mrs. Gordon from Salem after much longer periods of absence.....Tom Matthews had pictures of perma-frost.....Earl Minar brought a specimen of chrysocolla in the rough, and

three finished cabochons.....Parke Snavely had a paperweight of camptonite..... H. B. Schminky had a small specimen of sandstone from the Grand Canyon of the Colorado which showed interesting cleavage and weathering.....Mrs. Gordon had a fossil alder leaf in diatomaceous earth from Harney County about 20 miles from Bend on Highway No. 20.....President F. W. Libbey showed a piece of vesicular basalt with zeolites from Coos Bay and some cinnabar from the Horse Heaven Mine. ....Leo F. Simon had two pieces of barite, one zeolite specimen and some calcite with molybdenite or graphite from Vernon, N.J., collected by his daughter, Lotus. ....May R. Dale had an interesting-looking box which she steadfastly refused to untie and pass for inspection. It was said to have contained lemon tarts which should have been perfectly safe after the unusually good luncheon we had just finished.....Dr. J. C. Stevens said that he and Mrs. Stevens are planning on a six weeks' trip to Mexico in the near future. Several members of the group groaned audibly at not being able to make this trip.....Parke Snavely introduced his guest, J. D. Hill.....R. Erickson had a copy of Natural History magazine, and was willing to take orders for "Ancient Forests of Oregon" by Dr. Ralph Chaney... ..Some announcements were made but the reporter's "receiving set" was not delicate enough to separate the words of the speakers from the general din in the "dining" room.

* * * * *

January 20, 1949

A twenty-five percent increase in attendance over the recent "low" cheered up President F. W. Libbey. He had received a letter from Ray Baldwin who, with his wife, is enjoying a less rigorous winter in Florida than we in the far north are experiencing.....Leo Simon had a letter from the Salem Geological Society suggesting that our group join the S.G.S. in a field trip to Corvallis. He also said that his daughter, Lotus, had arrived in Madison, Wis., without undue delay.....E. N. Bates had but recently returned from a business trip to Washington, D.C. His train was delayed by snow in Pocatello, but a little thing like that could not take away the joy of living from Mr. Bates. Notices posted stating that "This train will not leave before...." gave the stranded passengers assurance that they could leave the train and visit local points of interest without fear of becoming permanent residents. Smoke from a coal mine at Kemerer, Wyoming, that had been burning for 30 years interested the traveller. Mr. Bates had a chance to see many things of interest in and near the national capital, not the least of which were the sight of "so many cars trying to get somewhere at the same time"; the Agricultural Research Center at Beltsville, Maryland, covering about 30,000 acres; and the general use of car pools by the workers in Washington who have to live a considerable distance from their offices.....Earl Minar exhibited an elaborate belt with an agate set in the clasp. This was the work of the "Button Shop" which, we understand, uses abrasives sold by Mr. Minar.

* * * * *

January 27, 1949

An attendance of nine of "the faithful" marks pretty close to an all-time low for the weekly luncheon meetings, and if Pres. Libbey hadn't brought a small bottle of sharks' teeth (from the Black Hills, S. Dak.) in his pocket, there would have been no specimens.....Tom Matthews had a magazine with pictures of the old and the new methods of spacing oil wells, showing one group where there was a derrick on nearly every town lot and another where the drilling is limited to one well to forty acres of land.....It was a right cozy meeting in one of the smaller rooms of the Chamber of Commerce, but with plenty of room for double the number. So informal was the group that the president was not required to stand when he addressed the meeting.....So sorry that you missed it!

O.E.S.

****

GEOLOGICAL NEWS LETTER

OFFICIAL PUBLICATION OF THE

VOL. 15 NO. 3 PORTLAND, OREGON March 1949

GEOLOGICAL NEWS-LETTER
Official Publication of the
Geological Society of the Oregon Country
421 Morgan Bldg. Portland, Oregon
POSTMASTER: Return Postage Guaranteed

THE GEOLOGICAL NEWS - LETTER
Official publication of the
GEOLOGICAL SOCIETY OF THE OREGON COUNTRY

The Geological NEWS - LETTER is issued monthly.
Yearly subscription: $2.00 Single copies: 20¢
Communications and material for publication should be sent to the Editor.
Change of address and subscriptions are required 30 days in advance of date of change, and should be sent to the Business Manager.

MEMBERSHIP APPLICATION
GEOLOGICAL SOCIETY OF THE OREGON COUNTRY

Qualifications and dues:

Applicant must be sponsored by a member and recommended by the Membership Committee. A knowledge of geology is not a requisite. There is no initiation fee. A Member shall be over 21 years of age; a junior member between 18 and 21. A single membership may be held by husband and wife and their children who are under 18 years of age. The dues are $3.50 per year ($1.50 for Junior members), payable in advance, and include one subscription to the Geological NEWS - LETTER. Dues of members living in counties not adjacent to Multnomah County are $2.50 per year.

Date . . . . . .

I, _____ (please print full name) do hereby apply for membership (junior membership) in the Geological Society of the Oregon Country, subject to the provisions of the By-Laws.

Home address . . . . . Phone . . . . . .

Business address . . . . . Phone . . . . . .

Occupation . . . . . Hobbies . . . . . .

I am particularly interested in the following branches of geology: . . . . . .

. . . . . I enclose $_____
for the year's dues, March 1 to March 1. (Checks payable to the Society)

Sponsored by _____
(member)

_____
(signature)

SOCIETY ACTIVITIES

LECTURES: On the second and fourth Fridays of each month in Public Library Hall, S.W. 10th Avenue and Yamhill Street. Watch the Oregonian and Oregon Journal for announcements. Meetings start at 8:00 p.m.

TRIPS: An average of one field trip is held each month. Suggestions for trips should be given to Leo F. Simon, BE 0300, or LA 0549.

LUNCHEONS: Every Thursday noon at the Chamber of Commerce, 824 S.W. 5th Avenue between Yamhill and Taylor streets. Luncheon 85 cents.

MARCH MEETING ANNOUNCEMENTS

Friday Mar.11 — Annual banquet.

Friday Mar.25 — No meeting. This is the evening on which the last Audubon Screen Tour of the season will be held. In case you have forgotten, it is "Alluring Alaska" by Rev. George M. Link, at Benson High School, 8:00 p.m.

FIELD TRIP ANNOUNCEMENTS

No trip scheduled for March.

HOW TO GET TO THE ANNUAL BANQUET

Busses leave Trailways Terminal on S.W. Salmon Street between S.W. 5th Avenue and S.W. 6th Avenue at 3:45, 4:45, and 5:45 p.m. arriving at Lewis and Clark College about fifteen minutes later.

Whether you travel by bus or in your own car, it is suggested by Dr. Stauffer and Dr. Gilchrist that you plan to arrive early so that you will have time to inspect the campus before dinner, which is scheduled to begin at 6:15 - and when you are aware that the banquet chairmen are Dr. and Mrs. Arthur C. Jones, you will know better than to conclude that any later time will be "soon enough."

****

NOTES CONCERNING I. C. RUSSELL

by

George F. Beck

When I began collecting fossil woods from the central Washington area, I was hardly aware of the name in the above title, and blissfully unaware of the fact that Russell had collected petrified woods from the area some forty years earlier. These he reported in his Geological Reconnaissance in Central Washington, Bulletin 108 of the U.S. Geological Survey for 1893. While not the "father" of the Oregon Country geology in the broad sense of Thomas Condon, still Russell was one of the rugged pioneer geologists of the Columbia Basin. In my 1945 paper on the fossil woods of central Washington, I have seen fit to recognize I. C. Russell as the original worker upon these woods, and have named the series of forests, entombed in the Yakima basalts, after him: the "Russell flora."

Beyond that point I. C. Russell has remained little more than a name to me. Some time ago Miss Harriet W. Thomson, professor emeritus at the University of Oregon, requested a reprint of the article establishing the Russell flora, and has written the following note which might be of interest generally to members of the GSOC.

> "Prof. Beck: I have received the copy of your article Ancient Forest Trees of the Sagebrush Area in Central Washington and wish to thank you for it.[1] ---It is very interesting to me to know that the area up there is named after my highly respected instructor in General Geology, Prof. Israel C. Russell. I recall that he told us of the petrified forests of the Northwest, but in those days the Northwest was a very far-away place to me, and the exact location was never clear.
>
> "Prof. Russell certainly did get around. I remember one morning in May 1902 he came into the lecture room and stood looking at us for a moment. Then he began telling us what we were to do for the remainder of the semester, and ended by saying, 'Mr. So-and-so will carry the lectures for the remainder of the term. Mt. Pelee has erupted and I am going down there. Class dismissed!'[2]
>
> "When he returned he gave me some little bombs and some dust that had settled on his ship. They are among my choicest possessions."

---

[1] Can be purchased from the Bookstore, CWCE, Ellensburg, Washington, for 15 cents.

[2] In the explosions that tore Mt. Pelee from its roots, 30,000 people are said to have had their lives snuffed out almost instantaneously by poisonous gases. Ironically enough, the lone survivor was a convict that was being held underground in a dungeon.

****

MARION GLAESER IS IN THE EAST

Our attention has been called to the fact that Miss Marian Glaeser has left Portland and is therefore not available to perform valuable service as an associate editor. The suggestion has been made that she should therefore be not given publicity on the inside cover page. Maybe that is true, but she once "threatened" to furnish an article for the News-Letter which is more than some of the other associate editors have done, and anyhow, the whole page will have to be rebuilt as soon as the new officers are installed, so we might as well wait a month for our "housecleaning."

****

COMPENSATION

As the fiscal year draws to a close and the editor faces the stern fact that his place will soon be filled by a more competent if not more enthusiastic dispenser of the facts of life and death, of upheavals and subsidences, of haps and mishaps, his heart leaps with joy at the thought that his encyclopedia may again begin to accumulate dust, and that his dictionaries may possibly, by careful use, be made to last through the span of years allotted to him. But lest his successor should take fright at the rock-strewn road ahead, he deems it but fair to mention a few of the compensations of the position.

First, the matter of salary is brought to our attention by the annual tussle with the income tax statements. How simple it would be at this time of the year if editing the Geological News-Letter were one's only task! Hours of abstruse computations would be avoided and one could fill the sheet with a flock of zeros and gaily thumb his nose at the collector of internal revenue.

Then there is the matter of time. The editor does not have to wrinkle his brow in deep study as to how he shall pull through the coming month, for as soon as it starts coming it slams him in the face with a dead line, and when he regains consciousness that month has joined all that have gone before. Inconsequential as the News-Letter may seem to its army of readers, it ticks off the months for the editor even as the brass alarm clock ticks off the few seconds between bedtime and the unholy hour for arising.

The editor is in position to do favors for the best people in the world. He can mention their successes and can fail to note their errors (if any), but at what sacrifice of interest! If he were all-wise he might do the right thing at the right time, but being human, and having a job that is of greater interest to the tax collector, he often overlooks the obvious and pokes his nose into the wrong places.

The editor of the News-Letter of neccessity absorbs a certain knowledge of geology, in spite of himself, by reason of being compelled to read articles by people who really know what they are writing about. He has to brush up on his spelling to be sure the professors' typists have not gotten their fingers mixed on the keys.

And when the year for which he has signed up draws to a close he forgets the horrible fact that he is a year older than when he began the task, in the glorious feeling that he may soon be able to greet a new month without the fear that it has a dead line packed into its last week.

O.E.S.

****

NEWS-LETTER BINDING

Members desiring to have their 1948 News-Letter bound, may take them to the State Department of Geology and Mineral Industries, 702 Woodlark Building, where the volumes will be collected and sent to the binder by R. S. Mason.

Staples should be removed from the material to be bound, and the copies should be arranged in proper order. A 10-inch long strip of paper with the owner's name written on it should be inserted into the set.

To take advantage of the extremely low binding charge, at least 20 volumes must be delivered to the binder at one time.

Chester Wheeler
Service Chairman.

****

MT. RANIER AS SEEN BY LEO SIMON

Leo Simon brought to an audience of about 100 people at Library Hall, on the evening of February 11, 1949, a more complete picture of Paradise Park, Mt. Ranier, than any of them would have gotten had they made the trip to the mountain in person.

Leo is that way, you know. Being versed in geology, botany, ornithology, and various other natural sciences, he sees and photographs many things that the average person passes by without particular notice. Leo has been a professional photographer for many years, and has thought it very undignified to take snapshots of scenery, birds, and animals - until he became innoculated with the kodachrome virus. Since that happened he will risk a broken rib to get a better view of a covered bridge or a waterfall if it cannot be gotten at otherwise.

Understand, now. We are not accusing Mr. Simon of "snapshooting" in the ordinary sense of the word, for when he goes after a picture he really goes after it, and gets it with the proper lighting, the correct foreground and background.

Beginning his lecture with maps of the route and of the mountain, he conducted his expedition carefully. He had slides showing the effect of a flood in the Nisqually river where a temporary ice dam in a narrow canyon broke and released the pent-up waters with such force that they moved some fifty million cubic yards of earth and rock in fifteen hours as compared with the eight million cubic yards of rock moved by men in three years at the Hoover Dam construction. Rocks and ice carried by the flood tore the bark from many of the trees left standing, so that they are dying and will be a fire menace in a short time.

Particularly enjoyed were the pictures of wild flowers which were very beautiful in spite of their polysyllabic Latin cognomens that were handled by the speaker in the same offhand manner he uses in speaking of members of his family.

But even with Mr. Simon, the picture that he didn't get would have been the prize shot of the evening. However, he gave a physical demonstration of how he frightened away a bear that seemed to be coming too close.

The Geological Society of the Oregon Country is fortunate in being one of the societies which gives Mr. Simon a chance to exercise his hobbies, and in being introduced to some of his other interests by means of his unusual colored slides.

O.E.S.

****

DEATH VALLEY INSPECTION TRIP

The College of the Pacific's Death Valley Inspection Trip is scheduled to leave Stockton, California, Saturday, April 9, for its annual caravan trip through Death Valley. It will cover 1600 miles and see some of the most interesting parts of California in the following eight days. For information and application blanks write to College of the Pacific, Death Valley Inspection Trip, Stockton 27, California. $57.00 covers all expenses for the eight-day trip.

****

NEW GEOLOGY BOOK

Historical Geology by Carl O. Dunbar was published in January, according to an announcement by John Wiley & Sons, New York. The new book replaces the well-known volume of the same title brought out by Dunbar and the late Professor Charles Schuchert in 1941.

The book presents a comprehensive survey of the history of the earth from the earliest known evidence to the beginnings of modern times. Results of earth science studies during the past ten years have been included, and the prologue has been recast to provide an understanding of geologic time. The present volume also contains many new illustrations and diagrams, and a completely new set of paleographic maps in enlarged detail.

A set of approximately 200 color slides to aid teachers and students using Historical Geology as a text is expected to be ready about March 1. This is the second Wiley offering of geology visual aids; slides are now in use for Longwell, Knopf and Flint's Physical Geology.

Dr. Dunbar is Professor of Paleontology and Stratigraphy and also Director of the Peabody Museum at Yale University.

****

CORRECTION

In "Luncheon Notes" for December 23, 1948, the statement was made that Lotus Simon will receive her Master's degree in June, and it appears that she already has it in her pocket, by golly, and is well on her way toward becoming a Doctor. Her father says that the University has found that she really means business and that she is doing the same work that is required of men in the same course. This means that she has a trap line of about twenty-five traps, and drives a car when necessary, besides seeing personally just how the various little creatures in her neighborhood are put together.

(We hope that this is a closer approximation to the truth than some of our former statements. Ed.)

****

NEWS OF MEMBERS

Letters from the Baldwins who are spending the winter among the citrus groves of Florida, and apparently trying to drink all the juices that other folks don't need, indicate that Ray has at last found his ideal place in St. Petersburg, for there they have benches for the weary on the sidewalks and ramps over the gutters at the corners so that he "has hardly to lift his feet when walking." (And how we do envy him!)

* * * * *

Dr. John Eliot Allen, Director, Mineral Industries Summer Camp, 103 Mineral Industries Building, Pennsylvania State College, State College, Pennsylvania, sends greetings and an invitation for any member of the Geological Society of the Oregon Country to make a side trip to State College on his way to Florida or other eastern points. He says that he can show enough Paleozoic geology and fossils in a day to keep a person busy for a month. Furthermore, he says that the museum of minerals at the Pennsylvania State College ranks with the best in the country. He enclosed literature on the summer courses in geology which are open to a few students from other colleges. He says that the past winter has been an exceptionally open one with spring weather for nearly all of February, resulting in a touch of spring fever for the doctor.

****

LUNCHEON NOTES

February 10, 1949

Vice-President Leo Simon occupied the chair in the absence of President F. W. Libbey who was attending a convention of mining engineers in California. ....Wieners and sauerkraut caused the reporter's nose to wrinkle to the extent that he was served a roast beef luncheon.....Mr. Elder had some samples of black sand from the northern California beaches.....Rudolph Erickson and Earl Minar had interesting specimens which were not properly recorded in the reporter's notes. For shame! ....M. H. Calef and K. N. Phillips were present after long absences.

* * * * *

February 17, 1949

There was little discussion at this meeting other than the preparations for the Annual Banquet. Service was slow, and apparently the reporter was completely out of sorts. Can the guy! We gotta have news.

* * * * *

February 24, 1949

The distaff side of the membership was in strong evidence when the President arrived. Somewhat tardily a few males appeared. In all there were seventeen present and rather crowded the small room off the main dining room of the Chamber of Commerce.

Specimens included volcanic tuffs from Detroit and Dorena damsites brought by Paul Howell of the Corps of Engineers. He also showed part of a drill core taken from either a concrete abutment or pier of the Celilo bridge. It appears that the Army Engineers are sampling concrete structures in order to check whether or not deterioration is showing up caused by reaction between the aggregate and high-alkali cements.

Earl Minar had a circular sent by his son from the New Mexico School of Mines which described fluorescent phenomena. Mr. Minar also showed a bronze plate made in Portland for the Salem Geological Society and which will mark a large erratic on the campus of Willamette University.

Mr. Libbey had a few small specimens of the rare josephinite and a sample of diamond drill core sent for inspection to the Society by Ray C. Treasher. This drill core showed the character of granite of one abutment foundation of the Folsom damsite in california.

Miriam Shephard had samples of the shells of giant snails from Africa. Also, she circulated a magazine article telling about these snails.

The State Department of Geology was well represented. Mrs. Lillian F. Owen, Miss June Roberts, and Miss Margaret Steere were present in addition to Tom Matthews and the undersigned.

F.W.L.

****

GEOLOGICAL NEWS LETTER

OFFICIAL PUBLICATION OF THE

VOL. 15 NO. 4 PORTLAND, OREGON April 1949

GEOLOGICAL NEWS-LETTER
Official Publication of the
Geological Society of the Oregon Country
421 Morgan Bldg. Portland, Oregon
POSTMASTER: Return Postage Guaranteed

THE GEOLOGICAL NEWS - LETTER
Official publication of the
GEOLOGICAL SOCIETY OF THE OREGON COUNTRY

The Geological NEWS - LETTER is issued monthly.
Yearly subscription: $2.00 Single copies: 20¢
Communications and material for publication should be sent to the Editor.
Change of address and subscriptions are required 30 days in advance of date of change, and should be sent to the Business Manager.

MEMBERSHIP APPLICATION
GEOLOGICAL SOCIETY OF THE OREGON COUNTRY

Qualifications and dues:

Applicant must be sponsored by a member and recommended by the Membership Committee. A knowledge of geology is not a requisite. There is no initiation fee. A Member shall be over 21 years of age; a junior member between 18 and 21. A single membership may be held by husband and wife and their children who are under 18 years of age. The dues are $3.50 per year ($1.50 for Junior members), payable in advance, and include one subscription to the Geological NEWS - LETTER. Dues of members living in counties not adjacent to Multnomah County are $2.50 per year.

Date . . . . . .

I, _____ (please print full name) do hereby apply for membership (junior membership) in the Geological Society of the Oregon Country, subject to the provisions of the By-Laws.

Home address . . . . . Phone . . . . . .

Business address . . . . . Phone . . . . . .

Occupation . . . . . Hobbies . . . . . .

I am particularly interested in the following branches of geology: . . . . . .

. . . . . I enclose $_____
for the year's dues, March 1 to March 1. (Checks payable to the Society)

Sponsored by _____
(member)

_____
(signature)

SOCIETY ACTIVITIES

LECTURES: On the second and fourth Fridays of each month in Public Library Hall, S.W. 10th Avenue and Yamhill Street. Watch the Oregonian and Oregon Journal for announcements. Meetings start at 8:00 p.m.

TRIPS: An average of one field trip is held each month. Suggestions for trips should be given to Leo F. Simon, BE 0300, or LA 0549.

LUNCHEONS: Every Thursday noon at the Chamber of Commerce, 824 S.W. 5th Avenue between Yamhill and Taylor streets. Luncheon 85 cents.

APRIL MEETING ANNOUNCEMENTS

Friday Apr. 8 — "Wave Motion," a lecture by Marion Morris, Electrical Engineer.

Friday Apr.22 — Title of lecture to be announced in local newspapers.

FIELD TRIP ANNOUNCEMENTS

Sunday Apr.24 — A very interesting trip to the Lower Clackamas River area will be held on this date. The trip will be led by G. C. McBride, geologist at Alcoa, and F. W. Libbey.

Meet in front of the Journal Building on Front Avenue at 9:00 a.m. equipped with lunch. Transportation will be provided for those without cars.

NEWS OF MEMBERS

Norris B. Stone's portrait appeared in the Oregonian of March 30 under the heading: "The Gourmet Touch." He is as good looking in a chef's cap as in a ten-gallon sombrero, and doubtless many people will be influenced to try one or more of his salad recipes.

Mr. and Mrs. R. L. Baldwin write from El Paso, Texas, that they have traveled 22,000 miles since leaving Portland last July. While we realize that it is highly improper to be envious, we find difficulty in suppressing that emotion on hearing this news.

A telegram received from the Baldwins on the day of the banquet got mislaid. We reprint it here:

REGARDS TO GEOLOGICAL SOCIETY OF OREGON COUNTRY ON OCCASION OF ANNUAL BANQUET. TUESDAY WE FINISHED SCOUTING FIELD TRIP FOR THE SOCIETY PORTLAND TO KEY WEST.

RAY BALDWIN

****

THE PAGEANT OF OLD OREGON*

by

A. W. Hancock

Let us turn our clocks backwards, not to the beginning, but to one of life's most fateful and trying periods known to geologists as the Mesozoic, and from that point of vantage let us chart our course and set our sails for a voyage across the following sixty millions of years.

We are selecting this particular point in time for very definite reasons. Revolution after revolution is shaking the planet. Nature has seemingly grown weary of the old order. Change - radical change is the compelling spirit of the day. The ancient seas of Mid-continent have long overstayed their welcome and are being evicted from every place. Low-lying land masses are lifted skywards - the highest elevations of the Rockies were but recently ocean deeps.

This unrest appears to be universal and the western portion of the continent is in the midst of profound adjustments. Not only is it expelling its expansive Cretaceous sea but is feverishly trying to blot out all traces of its marine past under floods of rhyolitic lavas, sands, and tuffs. Out of this disorder, turmoil, and confusion Old Oregon emerges; not the Oregon we see today, but the Oregon whose thrilling and dramatic story is so beautifully written and so wonderfully preserved in laminated strata of stone.

The revolutions we refer to are not peculiar to land features alone but extend to all life as well; both plant and animal. The great forests of Calamites, cycad, and fern are rapidly fading from the picture. The animals - that strange reptilian horde, the dinosaur, is stubbornly giving way to the mammals.

From out of the northlands across Oregon's newly formed land surface, migrating forests of hardwoods move; trees which have but recently abandoned their evergreen habits and seasonally drop their leaves. Also at this time we are to witness one of life's grandest miracles. As a result of two brand-new inventions, geologically speaking, the earth suddenly bursts into blossom and song. Flowering plants and feathered songbirds make their initial bow and join the parade of life. Along shadowy trails 'neath sweet-gum and ash, persimmon, walnut, and oak move animal forms mysterious, strange, unique - horses no larger than a sheep or a dog, deer no larger than a cat. There are rhinos, tigers, wolves, and bears according to the records of the rocks.

Countless generations come and go in this seemingly timeless land. But change must come, it is nature's law, and so the picture is altered. Oregon's erstwhile level lands are twisted, squeezed and broken; and through a thousand weakened zones an invader pours his frenzied, maddened forces - the Columbia River basalts. At first the lowlands or basins are occupied, then the higher elevations, and finally the hills and low mountains are submerged. Life practically disappears. Three hundred thousand square miles of territory, the garden spot of the earth, becomes blackened, silent desert - truly one of Oregon's darkest hours.

Time heals all things we are told. New soils are forming on the cooled and hardened surface and life returns, but much different from what we have seen before. No palms, no cinnamons, no redwoods. Where once immense rain forests grew are now dry and sodded plains. Animal life also returns but is greatly changed. The trim and speedy little three-toed horse is with us again though much larger. With longer and sharper teeth he has changed his diet from the tender plants and leaves of trees to the more nutritious but tougher grasses.

*Speech delivered at 14th annual banquet, March 11, 1949.

As we observe Time's changing panorama Nature is busily experimenting with a new project. From North to south across the Oregon Country she has thrown a belt of fire. From belching smoke-stacks a new material, the andesites, is being poured in prodigious quantities. The great mountains of the Cascade Range are coming into being. Hood, Jefferson, Three Sisters, Mazama, and probably a hundred other volcanoes are in action at the same time. Mount Mazama, the giant of them all in one terrific explosion lifts its summit skyward. Many cubic miles of material falls on the surrounding country as pumice; the walls of this great volcano collapse and tumble back into its own cauldron - this cauldron finally fills to the brim with cold, clear water and becomes known as "the sea of silence" - Crater Lake.

Possibly to compensate for areas lost beneath these newly formed mountains the Oregon Country moves her shore lines westward, retrieving from the floor of the Pacific hundreds of square miles of valuable lands which later become known as Western Oregon.

While still bathed in the red shimmering light of volcanic beacons Old Oregon is bracing herself for an impact with another invader. From out of the north an ice sheet, thousands of feet in thickness, is slowly bearing down upon her. As a precaution she has already capped her highlands with heavy shields of ice lest erosion from excessive moisture sculpture her shapely mountains into blackened piles of rubble. Much of her life, both plant and animal, has already migrated to warmer climes.

The immense drainage system of this section of the continent is already loaded beyond its normal capacity. The good friend to the north - Canada - lies sprawled in helpless paralysis beneath the ice and so the Oregon Country is forced to take over the waters of the great Frazer and add those to her own. Farther to the east Montana is in the grip of the same monster which has already beheaded the Missouri and so another refugee is knocking at her door - to escape the ice the beautiful Yellowstone pours her waters westward into the tributaries of the Old Columbia.

These combined floods surge across northern Idaho, eastern Washington, spread out over central Oregon until their outlying borders lash over into Nevada and northern California; but the bulk of the waters pours down the Columbia Gorge, and the Willamette valley becomes a great inland sea.

The menacing ice flood is finally halted almost within the shadows of Mt. Hood; and as the Frost King retreats life returns to the Oregon Country, with it comes a new master. Out of Asia, across the temporarily dry floor of the Bering Sea, down the Pacific's widened strand, moves this conqueror, Aboriginal Man.

History, we are told, repeats itself and here we witness a classic example on the same stage with a similar act except that the performers are new. From out the east daring spirits have arrived in search of wealth and adventure and through a series of fabulous discoveries are rewarded beyond their wildest dreams. Amalthaea's cornucopia, the horn of plenty, is found to be more than overflowing. Nature has planted gold under the hills in this land of the sunset, she has clothed her mountains with the finest timber, she has covered deep valleys under heavy soils.

Stories of this magical land spread like wild-fire. Legions of land-hungry peoples begin moving westward. Of all the migrations of history this is one of the greatest and possibly the last. Old ties are broken, old traditions are

forgotten as these numberless hordes push across their own frontiers into perils and hardships undreamed. The doors of hope are closing behind, the gates of promise are opening ahead.

Every obstacle that fate can muster is thrown across the path. Desert lands, mountain ranges, swollen streams, and savage tribes are encountered and subdued. Onward, ever onward moves this surging human sea until the spirit of the great Pacific seems to lift its hand and say: "This far shalt thou come and no farther."

The aborigine and the frontiersman are seen stacking their arms, the forests are falling before the axe, the fields are golden with grain, the ships - those white-winged seraphs of the seven seas - are crowding the harbors, the giants of the rails are feeling their way through the mountain passes, the hum of the motor plane is in the air. Civilization has arrived.

And so the curtain rings down on the Oregon that was, and the pageant of her past is ended.

****

RETROSPECT*

By

F. W. Libbey

In the time I have I shall review some of the high lights of the past Society year which stand out in my memory. Since time is of the essence tonight, Al Vance's fine poem "Seven Days" comes naturally to mind. Many of you will recall the opening verse:

This is the measure of time
In the everlasting plan
An instant of eternity
Is a billion years to man.

Perhaps you should not try to trace too closely the connection between this poem and my talk - just think about the beauty of the poem.

As I think back over the early part of my tenure of office, I remember the lecture night when Ford Wilson did a Sheridan's ride from Umatilla at the time of the big flood to keep a G.S.O.C. lecture engagement and arrived only a few minutes late, surprising his wife as much as he surprised the rest of us.

I should certainly mention the contribution to Oregon geology under the subject of "The Age and Relationships of the Eugene and Fisher Formations" by H. E. Vokes and Parke Snavely in the May News-Letter. Two other articles in the News-Letter stand out in my memory. They are "Will-o'-the-Wisp" and "The Pleiades" by Hugh Pruett. These articles all mark the high character of News-Letter material under our able editor.

It is with sadness that we record the passing of two of our members, Dr. Booth and Dr. Anderson. Dr. Booth was a charter member and was a close friend of all of us. He was extremely interested in the Society, was active up to the time of his death and is irreplaceable as a member. Dr. Anderson was one of the newer members but had joined eagerly in our activities. He was a regular attendant at our luncheons and lectures.

---

* Speech of retiring President, 14th annual banquet, March 11, 1949.

The annual picnic lived up to its best traditions, as the saying goes, and as always was satisfying from an epicurean as well as, shall we say, educational standpoint. Both high finance and social science studies were pictured in the plays by Bates and Stanley describing the promotional activities of some characters in an oil well "discovery" at Mount Tabor, (The moral to this play was somewhat obscure, but I've no doubt there was one.); and by Ada Henley showing life at a high-class boarding house and giving conversational flights of fancy by some of our intellectuals, and what intellectuals! The sterling actors and actresses, Hancock, Simon, Erickson, Stone, Davis, Ruff, Schminky, Helen Haven, Carol Ann Schminky, and Miss Ada Henley herself gave remarkable performances. They did not get curtain calls only because there was no curtain.

I remember a field trip into the Upper Nehalem area led by Al Vance, and strangely my memory of this trip is much clearer concerning the good food furnished by Miss Hughes, Miss Dodge, and Miriam Shepard than it is about geology. On another field trip led by Leo Simon to the leaf locality at Molalla the rains descended and the floods came, almost. Drs. Gilchrist and Stauffer were very enthusiastic in their search for fossil leaves until Dr. Gilchrist discovered how plastic is Molalla clay. To the layman this means it is slick as all get out. In making his discovery Dr. Gilchrist slid gracefully but suddenly down the clay bank into a very wet pool of water.

There are many other events which warrant mention but I must not wander on and on because I might be closer to that hook, mentioned before, than I think. I could speak about Mr. Bates' very narrow escape from catastrophe on Highway 101; I could mention the Baldwins' cross-country trek to join the millionaire colony in Florida; the museum activities of Lloyd Ruff et al; Rudolph Erickson's discovery of gold in the crop of a turkey; the "pick-up" story by our editor in the May News-Letter; the "John Day Country" talk by Lon Hancock; and my enjoyable visits to the Salem Geological Society. These are only a few of the interesting events which have made membership in the Society during the past year something for me to cherish.

In closing I want principally to urge you to give real support to your new President. You know how enthusiastic he is and how eagerly he wishes to promote the welfare of the G.S.O.C. Please get behind him and help push.

Before finally closing I want to introduce members of the outgoing Executive Board and to express the Society's gratitude for their service: Leo Simon, Miriam Shepard, Grace Poppleton, Dr. Arthur Jones, Dr. John Allen, Dean Butler, Mildred James, and Chester Wheeler.

****

PROSPECT*

By

Leo F. Simon

Dear Members and Friends:

I am very thankful to you for having elected me your 15th president, the highest honor you could bestow upon me. I hope I can serve you as well as my predecessor Mr. Libbey did.

President Truman received about 48 percent of the national votes and claimed it was a mandate. I received about 60 percent so what would he call that - a supermandate? But rest assured I won't be autocratic. I appreciate the high honor bestowed upon me but fully realize the hard work ahead, and will do my best,

---

*Speech of new President, 14th annual banquet, March 11, 1949.

as work is not new to me. Although geology is our main interest we are also interested in the other natural sciences and thereby increase our knowledge of the world around us.

First of all I hope we can increase our membership and especially enlist more young people in the study of geology and help us in our work. I believe the attendance at meetings could be increased if we had a smaller hall to meet in, which would help us become better acquainted with each other.

We have some very interesting meetings and trips scheduled for the coming year.

1. Old Timers' night, to review the movies taken on the early trips of the Society when we were all younger - remember?
2. Columbia Gorge trip from Cascade Locks to The Dalles, Dr. E. T. Hodge leading.
3. Sandy River buried forest.
4. Geology of the north coast of Oregon.
5. Tenino mounds in Washington.
6. The coal beds in Washington.
7. Upper Clackamas River area.
8. Eugene area.
9. Oregon State College and surroundings.
10. Clarno.
11. Kodachromes in three dimensions by the inventor of the View Master (an extraordinary treat).

We will have mineral and geological exhibits at the meetings with Mr. A. W. Hancock in charge. I believe if we had a work night we could study basic geology and help the amateur get started. An occasional social evening (with refreshments) would help the members become better acquainted. And of course our Thursday luncheon meetings at the Chamber of Commerce with fine comradeship and specimens will continue.

Very soon the temporary "Oregon Museum of Science and Industry" will open after several years of concerted effort headed by our own Dr. J. C. Stevens. Mr. John Ripley Forbes of Hornaday Foundation is in charge of pledging money and material for this project which our society has fostered since its beginning in 1935. An interested group of members of this and other societies has worked hard to help; first, salvaging and classifying specimens of birds, mammals, etc. from the old Portland Museum which had been stored in the basement of the Civic Auditorium and Forestry Building, moving same to the work shop, and finally installing them in the present temporary location. Mr. Rett, taxidermist from San Diego Museum, collected and mounted over 100 native birds and created several beautiful habitat groups. Mr. J. R. Sewell, from Los Angeles County Museum, who is with us tonight, has been painting backgrounds for the elk and other habitat groups which he is doing. There will be rooms for minerals - fossil fluorescent rocks - Indian lore to mention a few, and last but not least, a live animal room for the children, all in colorful rooms. This will indeed be a feather in our hat and again thanks to our Jack Stevens who worked against great odds to accomplish this. We have been given a city block for the permanent museum so let's all get behind the final drive for funds to finish this worthwhile project.

With 17 committees, each needing a chairman and other members to serve on them, I am also making a plea for help to make the coming year a success, so I will not fall short of your supermandate. This is your society and you only get out of it what you put into it, and I would appreciate your cooperation and opinions on program outlined. Thank you all.

****

THE FOURTEENTH ANNUAL BANQUET

The Fourteenth Annual Banquet was held at Lewis and Clark College March 11, 1949. Mr. John R. Savage, manager of the dining room, and Miss Ardis Ellingson, hostess, were most cooperative in arranging and serving a good dinner for a nominal price, complete with flowers from the campus. Mrs. Kurtichanoff and Mrs. Frank Smith arranged other decorations surrounding prehistoric animals especially made for the occasion by Mrs. Barney Macnab and Mrs. Kurtichanoff. "Originals" drawn by Dorothea Minar during the past several years, for banquet covers, added to the geological transformation of the dining room. Mr. and Mrs. Bartow had arranged a host and hostess for each table.

Mr. Phil Brogan, in his inimitable manner, kept the program moving. He had previously voiced his conviction that "the mind can only grasp what the seat can endure," no doubt inspired by his experience of some years ago when he was the main speaker on our program at about 11:30 p.m. This year at 10:00 p.m. our incredulous members found themselves free to go home. Some lingered in a dazed manner as though they could not believe it, and besides they had had such a good time they were loath to leave.

Mr. Libbey recalled many delightful events of the past year, and the retrospect made us aware of much accomplished.

Mr. Simon's guardianship for the coming year is enough to warrant a prospect of solid enjoyment of worthwhile trips and meetings. Besides, we are all behind him.

Mr. Hancock's talk, "The Pageant of Old Oregon" is printed in this News-Letter. Cold letters cannot convey to you who missed the banquet, the warmth and inspiration of Mr. Hancock's talk, but they will pass on to you the scholarly presentation of the story of Old Oregon.

Mr. Libbey, Mr. Hancock, and Mr. Brogan were presented with Estwing geology picks.

Mr. Brogan was thrown clear off program by an eruption from the depths - the resurrection of a song dedicated to him a number of years ago, sung in appropriate Eastern Oregon costume by Ken Phillips, Clarence Phillips, Norris Stone, and Arthur Jones. We think he liked it anyway, since he has requested a copy of the song.

Dr. Hodge transported us on a magic carpet on a trip around the world. It is odd how nothing more than a crab cocktail can release inhibitions and make a dignified professor reveal his true self. We all enjoyed the trip.

The "Inside Story" of the Museum was touchingly told in word and deed by Lloyd Ruff, Mildred James, and Johanna Simon. It is lucky that Mr. Forbes had a previous film-showing engagement, since the funds of the Geological Society have never been enough to reckon with damage suits. Or he might have liked it, who knows?

If you missed the banquet and would like to pick up a bit of its flavor, call Mrs. Lloyd Ruff, TR 6980, or Mrs. Leo Simon, BE 0300, asking them to let you know when the complete recording, taken by Mr. Ruff, will be heard, together with a complete showing of the pictures taken by Mr. Orrin Stanley.

------#------

The foregoing account of the banquet was written by Mrs. Arthur C. Jones whose becoming modesty forbade the mention of the fact that much of the success of the function was due to the masterful management of all arrangements by the co-chairmen, Dr. and Mrs. Arthur C. Jones. To their insistence that the various features should be limited in time to pre-determined lengths, the members are indebted for the extra hours of sleep they enjoyed the following night. It looks to the Editor as if these charming people have elected themselves to a perennial job.

O.E.S.

****

LUNCHEON NOTES

March 3, 1949

J. C. Stevens was back from Mexico with a bottle of sand from the unfinished volcano, Paracutin. He says that the accepted pronunciation is Par-cu-teen, and that the display of fireworks put on by the mountain is well worth seeing. He also fished at Acapulco but refrained from bringing to the luncheon a specimen that he caught there. He said that the sailfish that he shipped home was very beautiful when he caught it, but that it had developed qualities enroute that made it far from attractive. He also caught a large marlin.....Miss Hughes also had samples of sand but no fishes. Her specimens were from the Hawaiian islands and from McGregor, Iowa. Coral also from the islands.....Leo Simon reported on the basement field trip and showed specimens of petrified palm wood, algae, and dinosaur bone, and a banded agate from the Renton collection.....Mr. and Mrs. F. Wilson had specimens of concrete from the Umatilla bridge and the Bonneville dam..... Dr. Arthur Jones and Mrs. Jones, cochairmen of the banquet committee, reported that the arrangements for the banquet were well under way.

* * * * *

March 10, 1949

Noted among the 20 people at this luncheon meeting were Viola and Mary Lou Oberson, and Arthur Greenhall who was the guest of Dr. Stevens.....Earl Minar had a specimen from the Renton basement. Looks as if there must have been pretty good pickings on that trip.

* * * * *

March 17, 1949

Pres. Leo Simon brought a specimen of andesite with augite phenocryst from Pandemonium Creek near Mt. St. Helens.....Earl Minar had a polished specimen of red agate. If he said whose basement it was from the reporter failed to catch the name.....W. Claude Adams had a collection of mineral specimens from desert area near Palm Springs, California.....Orrin Stanley had his pictures of the banquet and a grouch about the crowded condition of the dining room which limited his photographic activities (but saved him several films and flash bulbs).

* * * * *

March 24, 1949

The group again demonstrated the impracticability of trying to crowd 18 people around "King Arthur's Round Table" so Miriam Shepard separated herself from the main group and sat with her face to the wall in the corner of the room, and was later joined by Mrs. Arthur C. Jones. They did, however, have the advantage of more elbow room than those who faced the center of the room.....H. E. Richardson was guest of Mr. and Mrs. Thos. E. Palmer. They had a lava cast from Bend which showed clearly the fluidity of the lava at the time it squeezed into the crevices. ....K. N. Phillips had some fulgurites from the Palouse hills and a report of the Knik River flood, which, for the size of the river, compared with the Columbia River flood of last year.....Rudolph Erickson had a slab of fern-wood from the Greenhorn mountains.

O.E.S.

****

MENU

STALK-EYED CRUSTACEAN

CRYPTOZOON ALGAE with CRINOID SECTIONS

OOZE A'LA ARCHIPELAGO

AUROCHS

TUFF MUD FLOW

OÖLITES

CONCRETIONS AMORPHOUS SULPHUR SILICA GEL

NÉVÉ NUMMULITES

GROUND WATER

*****

PROGRAM
FOURTEENTH ANNUAL BANQUET
GEOLOGICAL SOCIETY OF THE OREGON COUNTRY

1949

Greetings	President F. W. Libbey
Master of Ceremonies	Mr. Phil Brogan
OUR Guests	Mr. Phil Brogan
Song: De Re Geologica	Sung by all

RETROSPECT and PROSPECT

President	President-elect
F. W. Libbey	Leo F. Simon

"PAGEANT OF OLD OREGON"
by
Mr. Alonzo W. Hancock

Volcanic Eruption	? ? ? ?
Geology Prefabs	Dr. Edwin T. Hodge
A Woman's Touch	Mildred James Johanna Simon Lloyd Ruff
Auld Lang Syne	Sung by all

FOURTEENTH ANNUAL BANQUET COMMITTEE

1949

Dr. and Mrs. Arthur C. Jones	Chairmen
Mr. Lloyd Ruff	Speaker Committee
Mr. and Mrs. Leslie Bartow	Hospitality
Mrs. L. E. Kurtichanof	Decorations
Miss Dorothea Minar	Program Design
Mr. Kenneth Phillips	Entertainment
Dr. Arthur C. Jones	Songs
Mrs. A. W. Hancock	Accompanist
Mr. and Mrs. Leo Simon	Tickets
Mr. E. N. Bates	Gifts
Mr. H. Bruce Schminky	Transportation
Mr. Orrin E. Stanley	Photography
Mr. Lloyd Ruff	Recording

O F F I C E R S

PRESIDENT

1948	1949
F. W. Libbey	Leo F. Simon

VICE-PRESIDENT

Leo F. Simon	Franklin L. Davis

SECRETARY

Miss Miriam Shepard	Miss Miriam Shepard

TREASURER

Miss Grace Poppleton	Norris B. Stone

DIRECTORS

Dr. Arthur C. Jones	F. W. Libbey
Chester A. Wheeler	Chester A. Wheeler
Dr. John Eliot Allen	Mrs. Mildred P. James
J. Dean Butler	Mrs. Leslie W. Bartow
Mrs. Mildred P. James	Dr. Arthur C. Jones

DE RE GEOLOGICA

The Oregon Country ain't What She Used to Be

(Tune: "The Old Gray Mare")

1. Oh, the Oregon Country ain't what she used to be
   Ain't what she used to be, ain't what she used to be,
   The Oregon Country ain't what she used to be
   Many long years ago.

Cho: Many long years ago! Many long years ago!
   Oh, The Oregon Country ain't what she used to be,
   Ain't what she used to be, ain't what she used to be,
   The Oregon Country ain't what she used to be
   Many long years ago.

2. So we take our books and study geology
   Study volcanology, geomorphology
   To learn this country's geochronology
   Of many long years ago.

3. And we take our picks and dig in the Eocene,
   And the Oligocene, into the Miocene.
   We look for fossils in the Pliocene
   Of many long years ago.

4. Now when Doctor Hodge from the state institution
   Speaks of the Laramide Revolution
   It helps to remove our mental confusion
   Of many long years ago.

5. And he tells us of intrusive diorites,
   Ancient rhyolites, Cascade andesites.
   And leads a trip to search for zeolites
   Of many long years ago.

6. And when we sing of the ichthyosaurus,
   Or Rex tyrannosaurus, who lived long before us,
   We want everyone to join in the chorus
   Of many long years ago.

7. Now if you're a person of slight notoriety,
   And sing this song with complete sobriety,
   You ought to be a member of our Society
   With many long years to go.

8. For the Oregon Country ain't what she used to be
   (repeat first verse and chorus)

AULD LANG SYNE

Should ancient sea shores be forgot
And never brought to mind?
Should Mount Mazama be forgot
And days of auld lang syne?

Should fossil bones of Condon's Lake
Be left to rot unseen?
And shells and leaves we fail to take
From ancient Eocene?

So now the fossils we have plucked
Are once more brought to mind
As Geesock diggers reconstruct
The days of auld lang syne.

Chorus:
For auld lang syne, my friends
For auld lang syne,
We'll take a pick and dig it up
For auld lang syne.

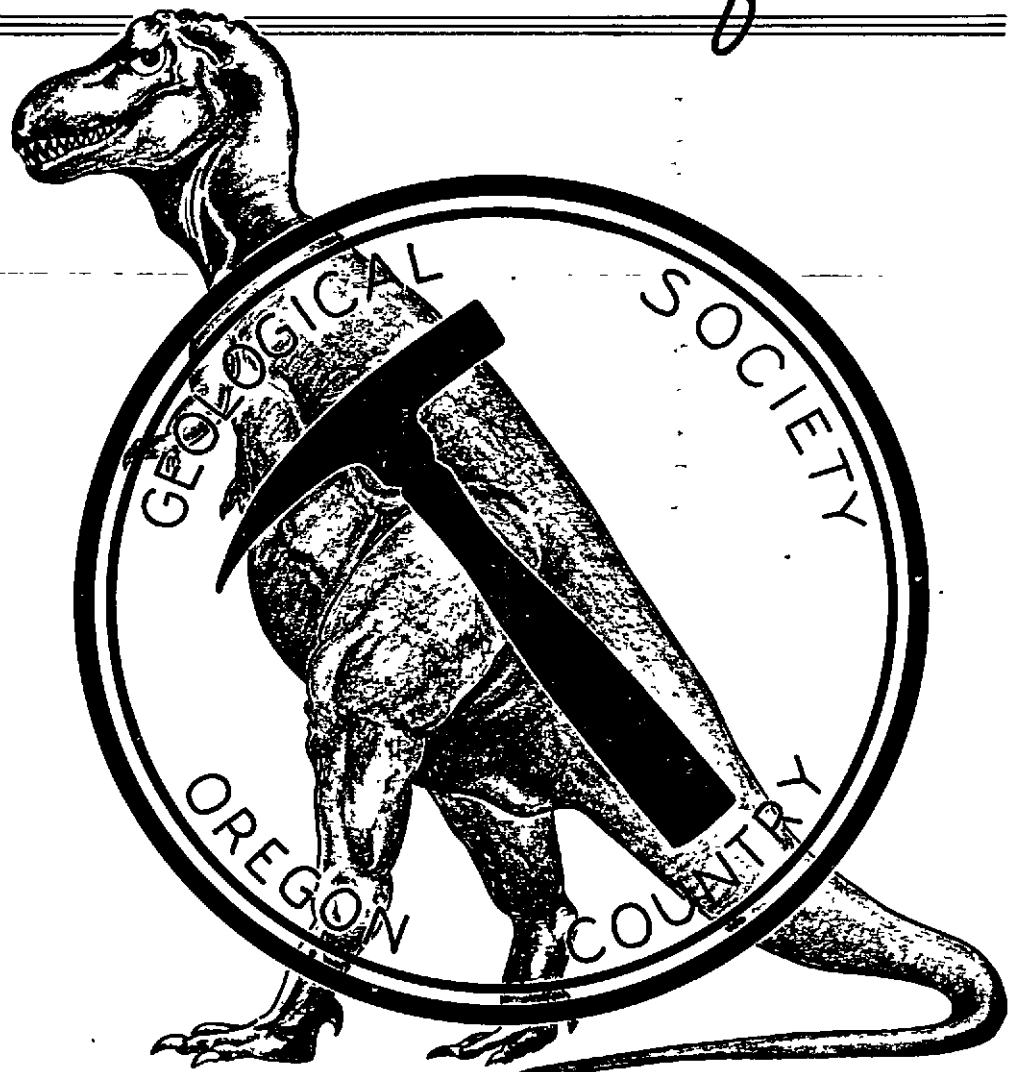
FINAL UPLIFT

Our banquet now is at an end
  Goodbye, Rock Hunters
    Goodbye
We'll work a year and meet again
  Goodbye, Rock Hunters
    Goodbye

Geodes and Fossils
Banquets and Wassails
Campers with "Tossles"
Goodbye, Rock Hunters
  Goodbye.

(Tune: "Goodbye, my Lover, Goodbye")

Annual Banquet



DOROTHEA MINAR

March 11, 1949.

1949

14TH ANNUAL BANQUET

GEOLOGICAL SOCIETY OF THE OREGON COUNTRY

GEOLOGICAL NEWS LETTER

OFFICIAL PUBLICATION OF THE

VOL. 15 NO. 5 PORTLAND, OREGON May 1949

GEOLOGICAL NEWS-LETTER
Official Publication of the
Geological Society of the Oregon Country
421 Morgan Bldg. Portland, Oregon
POSTMASTER: Return Postage Guaranteed

THE GEOLOGICAL NEWS LETTER
Official publication of the
GEOLOGICAL SOCIETY OF THE OREGON COUNTRY

****

****

****

MEMBERSHIP APPLICATION
GEOLOGICAL SOCIETY OF THE OREGON COUNTRY

Qualifications and dues:

Applicant must be sponsored by a member and recommended by the Membership Committee. A knowledge of geology is not a requisite. There is no initiation fee. A Member shall be over 21 years of age; a junior member between 18 and 21. A single membership may be held by husband and wife and their children who are under 18 years of age. The dues are $3.50 per year ($1.50 for Junior members), payable in advance, and include one subscription to the Geological NEWS LETTER. Dues of members living in counties not adjacent to Multnomah County are $2.50 per year.

Date _____

I, _____ (please print full name) do hereby apply for membership (junior membership) in the Geological Society of the Oregon Country, subject to the provisions of the By-Laws.

Home address . . . . . .Phone . . . . . .

Business address . . . . . .Phone . . . . . .

Occupation . . . . . Hobbies . . . . . .

I am particularly interested in the following branches of geology: _____

_____ I enclose $_____
for the year's dues, March 1 to March 1. (Checks payable to the Society)

Sponsored by _____
(member)

_____
(signature)

SOCIETY ACTIVITIES

LECTURES: On the second and fourth Fridays of each month in Public Library Hall, S.W. 10th Avenue and Yamhill Street. Watch the Oregonian and Oregon Journal for announcements. Meetings start at 8:00 p.m.

TRIPS: An average of one field trip is held each month. For questions and suggestions concerning trips call Dr. F. G. Gilchrist, BR 7375.

LUNCHEONS: Every Thursday noon at the Chamber of Commerce, 824 S.W. 5th Avenue between Yamhill and Taylor streets. Luncheon 85 cents.

MAY LECTURE ANNOUNCEMENTS

Friday May 13 — Colored motion pictures of the scenery, natives, and the wild animals of South Africa. These pictures will be shown by Mr. H. H. Logan, Logan Engineering Company, Chicago, Ill., who has made this adventuresome type of photography a hobby. Members of the Society are reminded that the meeting will start promptly at 8:00 p.m.

Friday May 27 — Illustrated lecture: "The Elephant Invasion," by Prof. E. L. Packard, Head of the Department of Geology, Oregon State College.

MAY FIELD TRIP ANNOUNCEMENT

Week End May 28-30 — This month's geology treck will be a three-day trip over Decoration Day to the Newport area. The trip will be led by Parke Snavely, geologist with the U.S. Geological Survey, who has recently co-authored a report and geological map of the region.

Our rendezvous will be at 11:00 a.m. Saturday, May 28th, at Weaver's agate shop on the Road's End Road. To get there follow the Salmon River cutoff through Otis to the coast. About one mile beyond Neotsu, where the highway meets the coast, a sign saying Road's End points to a gravel road on the right. Take this about one-half mile to the agate shop. (At Widow Creek on the Salmon River cutoff there is a rock quarry of Eocene basalt. Look at the rosettes of pillow lava.) After eating our lunches we will study the coast section south from Road's End to Newport. Here we shall spend the night. The next day we shall be under the direction of Mr. Snavely, who has planned a most enjoyable and instructive program. After a second night at Newport we shall return to Portland by way of Tillamook. The committee in charge (Gilchrist, Erickson, Vance, and Simon) will be glad to assist in the making of reservations for accomodations. Full announcement will be made at the meetings of the Society on May 13th and May 27th.

****

NEWS LETTER ITEMS

New members:

Mr. and Mrs. Harris Higgins, R.R. 1, Box 3, Parkdale, Oregon. Tel.: 2309.
Mr. Higgins is an orchardist who has been a News Letter subscriber for the past year.

Dr. Lester T. Jones, 3149 S.W. Fairview Blvd., Portland, Oregon, BE 2063.

Carol Waack (Junior Member), 404 N. Alberta St., Portland, " , MU 6607.
Student at Jefferson High School.

Change of address:

Mr. and Mrs. Ray E. Mackenzie, to: 1504 S.E. Oxford Lane, Portland 22, Oregon.

New telephone number:

Miss Margaret Hughes' newtelephone number is: BR 8894; same address: 1524 SW 10.

Note: Mrs. John H. Hershey has requested that Dr. Hershey's News Letter be sent in his memory to Mrs. Hilda Peterson, c/o Veterans Hospital, Roseburg, Oregon. Dr. Hershey was in charge of the department of surgery at the hospital.

****

OREGON MUSEUM OF SCIENCE AND INDUSTRY OPENS THIS MONTH

By

John Ripley Forbes

We are happy to announce that Portland and the State of Oregon will soon have its own museum - one of which the entire state may well be proud. This museum will open in its temporary home at 908 N. E. Hassalo Street during the early part of May. The new museum will exhibit some of its most attractive displays but because of its limited space, will have only a small number of its some 60,000 exhibits on display at one time. The most spectacular exhibit in the collection is the beautiful elk habitat group which is a life-size group of Roosevelt Elk against a background of Mount Hood. This group contains four beautiful elk, some fourteen native birds, various insects, plants, and other material native to the region.

Two other attractive features of the new museum will be the William L. and Irene Finley Hall of Bird Life, a tribute to Oregon's great naturalist team. This exhibit contains some 12 cases of beautifully mounted birds, including some five cases mounted against a natural habitat.

There is also a very beautiful fluorescent mineral display known as the Dr. Courtland L. Booth Memorial. Dr. Booth was a former Vice President of the Foundation, a strong advocate for the museum, and a loyal supporter and worker in its behalf. This exhibit features three cases of beautiful fluorescent minerals from the collection of Dr. Booth, made available by his widow and family.

Also prominent in the museum's exhibits is a very valuable collection of mammals of the west which includes the elk, the mountain goat, mountain sheep, prong-horned antelope, and caribou which were presented by the Hornaday Foundation to the Oregon Museum of Science and Industry.

The entire collection from the old Municipal Museum, formerly housed in the City Hall, has been turned over to the Oregon Museum Foundation. Numerous items from this collection will be on display when the new museum opens.

Many of the members of the Geological Society and the Oregon Agate and Mineral Society are loaning private collections to the beautiful mineral room which will be featured during the various months. It is planned to change these exhibits frequently in order that the many remarkable private collections may be viewed.

As soon as the museum is formally opened the hours will be from 9:00 to 5:00 each day, except Monday. It will also be open Sunday from 2:00 to 6:00 p.m., as well as two evenings during the week (Tuesday and Thursday) for the benefit of many adults who might not otherwise be able to visit the museum.

Children's special activities, such as clubs, museum games, story hours, and numerous outdoor activities will be featured; and a regular school program will be initiated, with many schools coming regularly to the museum with their teachers for educational programs. One of the unique features of the children's wing of the museum will be the live native animals such as the raccoon, skunk, fox, etc.

It seems appropriate at this time to pay special tribute to the many volunteers from the Geological Society, the Oregon Agate and Mineral Society, and the Audubon Society without whose help the museum could never have been opened at this time. The official opening date will be announced in the Portland papers.

****

G.S.O.C. TRIP TO THE ESTACADA COUNTRY
April 24, 1949
By May R. Dale

Even though daylight saving had just gone into effect at 2 a.m., the regular meeting hour, 9 a.m., found some 14 persons in fine fettle for a long-awaited field trip. One young lady arriving late, by taxi, proclaimed loudly that her watch was one-half hour slow, but that it had nothing to do with the shift ahead in time. After forming a caravan of 8 cars in Gladstone, noses counted were 23.

Just after leaving Gladstone, the Clackamas valley widens out all at once. Mt. Scott is to the North and Mt. Hobart to the East. A gorgeous day presented Mt. Hood in all its gleaming white glory; and the Cascades were sketched dark against the sky line except for a few odd lingering patches of snow.

The writer had the pleasure of riding with the Simons and Leo spilled the beans on all the old timers. And we learned that "ginsing" had been grown in this part of the country by the Chinese who sold it for its medicinal value. It seems our fellow Americans grabbed at the chance to make money out of this product too, and it came as quite a shock to them when they learned that the root did not always grow in the same shape, and that it was the particular shape that brought the fabulous price. However, this gets to be quite technical, and further questions regarding same should be directed to "botanist Leo," himself. Estacada should be "Estacado" (long, broad 'a') and means "staked claim." This is just a sample of the extra information we got by riding in this particular car. We gave the town of Estacada the brush-off and drove east toward Squaw Mt.

About 2 mi. east of Estacada, we made our first stop. And here let us introduce the speaker of the day. We were very fortunate in having Mr. George McBride with us to explain the geological points of interest of this trip. He, himself, had drawn up and processed sufficient charts to give one to each person making the trip. His comments were vivid and his wording couched in the language a layman could understand. Although he is a geologist with the Alcoa Company, he was not representing that organization on this trip, but giving us the advantages of his own personal opinions.

At this stop, just outside of Estacada, we studied an outcropping of pisolitic laterite. It is made up of small, irony concretions which are magnetic. The laterite at this place occurs in a 20-inch layer with silt and clay above and below. Approximately 300 feet east along the road, another outcrop can be seen in the ditch on the north side of the road. This laterite runs about 20% silica and 40% alumina, while most of the laterite in Oregon runs about 34-38% alumina, 20-23% iron and 9% silica. Silica is the important thing in testing laterite. Low silica content is required for aluminum ore. Controversial questions arose: Is this laterite transported material, or is it in place? The layering feature indicates 'non-transportation', while silt and clay are both river materials.

About a mile and a half farther east, we came to some terrace gravels. These deposits were probably deposited by the Clackamas River and form the broad plains through which we had been driving. They are probably "reworked Troutdale" which formation is identified by the presence of quartzite cobbles. Quartzite cobbles however are relatively scarce in the Estacada area. Here the cobbles are mostly andesite and basalt pebbles from the Cascades. We drift into the quartzite-bearing gravels as we get nearer the Willamette River. Sometimes it is difficult to tell the difference between andesite and basalt, so terms "basaltic andesite" and "andesitic basalt" have arisen.

Proceeding to the next point of interest, we were simply fascinated by a sway-backed mule. This probably has nothing to do with geology unless they had loaded him with laterite in the hopes they might make a fortune out of aluminum. However, if he had been any more sway-backed, one would have had to sit on his head to keep one's feet off the ground. He was really an animated caricature!

Heading in the direction of Cazadero, we stopped at a bridge over the Clackamas River. The geology here was explaine by Mr. McBride as follows:

> "Here we see the relationship between the volcanic agglomerate and the overlying andesitic flows. It is possible to trace the agglomerate, beginning a few miles downstream, along the river as far as the North Fork of the Clackamas River. The agglomerate will be seen again at our next stop where we will see the relationship between the agglomerate, the andesitic flows, and the laterite.
>
> "The agglomerate was first mapped as 'Boring Agglomerate'; however, it is my opinion that it should be placed at a lower level in the geologic column. I believe the rock we see here to be a member of the Rhododendron formation and is probably Lower Pliocene in age."

Looking across the river just beyond the falls above Farraday Dam, one sees the quarry which we visited. Here along the roadside is a wonderful example of jointed columnar basalt. The peculiarity of the outcrop is the result of concentric weathering of the basalt columns. Leo Simon expressly described it as a "petrified waterfall." To most of us, these columns looked like stacks of plates which might tumble at any moment. Volcanic agglomerate is seen in the river bed and at the base of the dam. It overlies the Columbia River Basalt. It consists of cobbles of basalt and porphyritic andesites in a tuffaceous matrix. The agglomerate occurs in the Rhododendron formation which may be dated Lower to Middle Pliocene. It is on top of the Miocene deposits. The contact with Miocene Columbia River Basalt can be seen near the North Fork of the Clackamas River. Rhododendron formation is also found in the Mt. Hood vicinity.

In lava flows, the deciding factor is feldspar. Generally speaking, if the feldspar is a basic plagioclase (labradorite), the rock is basalt; if the feldspar is andesine, the rock is andesite. Usually the basalts are the dark flows and the andesites light colored. The upper layers of andesite weather first. The silica is leached out in this process; the alumina, iron, and titania are concentrated. The resulting product is called laterite.

The oldest rock here is the Columbia River Basalt. The next flow is volcanic agglomerate. Above that is andesite, and then weathered andesite and the laterite mantle. On top of the laterite is our youngest rock: porphyritic andesite. The Columbia River Basalt has been uplifted and broken up. After these rocks were eroded, there came another period of lava flows. These flows were of the explosive variety which resulted in ash beds, agglomerate beds, and layers of andesite, and are called the "Rhododendron formation." Then after the Rhododendron formation, no volcanism took place for a while. Erosion set in again. There was not much faulting taking place. At Clear Creek there is one exception to this. On one side of the bank, there is andesite only; on the other bank, agglomerate overlain by andesite. During the Rhododendron period, laterization occurred. Following that, there was volcanic eruption again. This was the beginning of the Cascan andesites. It is hard to tell the difference between Cascan and Rhododendron - so we call the Rhododendron rocks the agglomerate, and the andesites Cascan. The Cascan dates from Pliocene time to Pleistocene.

This was the age that produced Mt. Hood, Mt. Shasta, Mt. St. Helens, etc. - the Cascade Range. The Cascan formation in this section makes geological analyses difficult. We know that the Columbia River Basalt has been folded. We believe that the Cascan andesites are essentially horizontal.

The dip of the Columbia River Basalt is to the northwest. Rhododendron was deposited on this gently sloping surface. The Rhododendron pyroclastics and flows apparently came from Squaw Mt. Then the Molalla, Clackamas, and Troutdale formations were deposited. There is no Columbia River Basalt found between here and Butte Creek. So, apparently, a basin or small synclinal fold exists in which the Molalla and Troutdale formations were deposited. Between here and the Willamette River the regional structure appears to be a broad, flat syncline, complementary to the Portland and Mehama anticlines.

On the way to Kiggins property the topography shows the definite breakthrough of the river from the Cascades. Arriving at the Kiggins property, we learned that the initial discovery of laterite was made here, that is, as far as the Estacada area is concerned. We had a hike of about one-half mile to the quarry. Cuts along the road expose slightly weathered andesites, pisolitic laterite, weathered andesite, and andesite. The geologic section exposed by the river at this point may be explained best by the table below:

Age	Elevation	Outcrop
Pleistocene	1145 feet	Cascan andesite (slightly weathered)
(Lower	1065 "	Pisolitic laterite*
(to	1045 "	Weathered basaltic andesite
(Middle	970 "	Basaltic andesite
(	935 "	Quarry floor
(Pliocene	640 "	Volcanic agglomerate

Mr. Libbey defended his use of the term "ferruginous bauxite" by explaining that gibbsite is left from the laterization process - and gibbsite is true bauxite. A bauxite section would be a section high in gibbsite and should be differentiated from a laterite section.

*Editor's note: The importance of laterite deposits in the development of the cement industry was the subject of an article appearing on the front page of The Oregonian for Monday, April 25 -- the day after the trip in question. The article was based on a report in the April issue of The Ore.-Bin published, as described in the Oregonian: "Laterite is a substance of volcanic origin, rich in alumina and iron, which is found in astronomical quantities in Columbia and Washington counties, and in southwestern Washington state to an extent not yet well determined. Laid down as lava in the Miocene period, it is believed to have been altered by several million years' weathering in the Pliocene period, at least part of which came before the folding that created the hills where it is found."

When used in the manufacture of aluminous cement, the resulting product is superior to regular portland cement on several counts -- one of the most important being that within 24 hrs. after being poured it exhibits the strength attained by the regular variety only after 28 days. Another extremely important characteristic of aluminous concrete - especially for the Northwest - is its resistance to chemical attack by sea water.

Mr. Libbey is to be congratulated on this timely publicity.

But geologists, pseudo-geologists, and would-be geologists are but mortal human beings, so the intellectual was put aside for the sensual - and lunch was partaken. A plane circled overhead a number of times, but after observing that fried chicken and other epicurean fare of certain members of the society were being shared in Lacedaemonian manner with certain other hungry-looking members, its pilot decided that the Geological Society of the Oregon Country was a society sufficient unto itself, and sailed out of that particular heavenly domain.

Revived, we made the loop back to Estacada, taking the main highway (211) north, crossing Eagle Creek and Deep Creek. About 2 miles from this second bridge, we made another stop to study some more weathered gravels. These have completely kaolinized so that the boulders and cobbles can be cut with a pocket knife. Contact with the underlying Troutdale can be seen along the road approximately one mile east of Eagle Creek. There is no distortion in the pebbles and cobbles; the exact shape and texture of the rocks were retained throughout the alteration. These unique weathered gravels are found in a number of localities in the Pacific Northwest.

Being about 4:30, we thanked Mr. Libbey and Mr. McBride for a very enjoyable and worthwhile trip, the caravan disbanded, and all members were on their own to return home as early or as late as their spirits moved them.

- - - - - - - - - - - - - - - - - -

It might be mentioned in closing that during one of our short stops on the street of a small town, a little boy rushed over to inquire: "Is this a funeral?" Upon being informed that it was an official trip of the Geological Society of the Oregon Country, he was polite - but a little disappointed, I thought. Members of the Society, I would suggest that we all adopt spirits, manners, and actions that would suggest our going forward -- not under.

* * * * *

Note: After lunch at the quarry, our President and botanist gave us a short lecture on the flora of the region. Below are some of the specimens presented and identified.

	Local Name	Technical Identification	Remarks
1.	Oregon Grape	Berberis aquifolium	Oreg. State flower
2.	Long-leaved Oregon Grape	Berberis nervosa	
3.	Red-flowering Currant	Ribes sanguineum	
4.	Trillium (or Wake Robin)	Trillium ovatum	
5.	Giant Lamb's Tongue (or Fawn Lily, or Dog-toothed Violet, or Adder's Tongue)	Erythronium oreganum	
6.	Western Dogwood	Cornus Nuttalli	
7.	Spring Beauty	Dentaria tenella	
8.	Western Bleeding Heart	Dicentra formosa	
9.	Johnny-jump-up	Viola sempervirens	A dwarf, an evergreen, and a creeper
10.	Long-spurred Violet	Viola adunca	
11.	Yellow Wood Violet	Viola glabella	
12.	Douglas Fir (a false hemlock, not a fir)	Pseudotsuga taxifolia	Western Oregon's important lumber tree
13.	White Pine (5 needles in a group; 5 letters in "white"; easy, isn't it?)		
14.	Little Wind Flower	Anemone Lyallii	
15.	Western Service Berry (or Shad-bush)	Amelanchier florida	

	Local Name	Technical Identification	Remarks
16.	Western Strawberry	Fragaria cuneifolia	
17.	Spring Queen	Synthyris reniformis	
18.	Red Elderberry	Sambucus callicarpa	
19.	Broadleaf Maple	Acer macrophyllum	
20.	Manzanita	Arctostaphylos patulo	
21.	Bitter Cherry	Prunus emarginata var. erecta	
22.	Drops of Gold	Disporum Smithii	

****

REPORT OF FIELD TRIP COMMITTEE
For period March 1, 1948, to February 28, 1949

We submit the following report on field trips during the past season:

1948

1. April 25 - Columbia River Gorge to Cascade Locks; Leo F. Simon - Dr. E. T. Hodge, lecturer; 88 attending; round trip, 210 miles.

2. May 23 - Scappoose-Pittsburg Bluff - Vernonia and Keasey Shales Area; A. D. Vance, leader - 57 attending - 91 miles round trip.

3. June 20 - Molalla Formation area and Leaf Fossil beds; Leo F. Simon, leader - 8 adults and 2 small children. Rain, rain, and more rain.

4. July 3-5 - Upper McKenzie River - Clear Lake Trip; Dr. Warren D. Smith, Ray Boals, and Hugh Currin (Eugene Obsidians) leaders; some returned through Redmond - 43 attended - 28 from Portland - 450 miles round trip.

5. August 22 - Silver Creek Falls State Park and Evens Valley, Mammoth and Mastodon Fossil location; Leo F. Simon, leader - 19 attending - 181 miles.

6. November 28- Basement Trip; A. E. Rockwell, Anton Schneider, A. W. Hancock - 20 from Portland - 5 from Salem attending; 3 very fine collections of polished agates, rocks, fossils, and minerals were enjoyed. Leo F. Simon, leader.

7. December 12- Molalla Fossil Beds; Leo F. Simon, leader - 10 attending - 45 miles round trip - Rain, mud, and more rain. Some fine Gingko leaves and nuts were found.

1949

8. February 27- Basement Trip; 33 attending - Leo F. Simon, Leo Haven, Harri Jennison, leaders. The very fine collection of minerals and agates of Mr. J. L. Renton were viewed, after which everyone was invited to take some cut slabs of agate and petrified Arizona wood. Dr. and Mrs. W. C. Adams had arranged a large display of historical and geological material, some collected by Dr. Thomas Condon. P. E. Dyck also had a fine display and workshop for cutting and polishing agates.

Weather conditions and gas shortage caused the cancellation of these three trips: September, gas shortage; October, fire hazard; and January, ice and snow.

The outstanding trip of the year was the McKenzie River - Clear Lake trip. The committee from Eugene headed by Dr. Smith worked out a very instructive and enjoyable trip. Mr. Currin and Mr. Boals and other Obsidians spared no effort to accommodate our members and all were made comfortable and happy. We wish to thank everybody that helped make our trip so enjoyable.

Respectfully submitted,

/s/ Leo F. Simon, Chairman
Norris Stone
Rudolph Erickson

****

ANNUAL REPORT OF THE TREASURER YEAR 1948-1949

March 1, 1948 Balance on hand			$ 422.74
INCOME - March 1, 1948, to February 28, 1949			
Memberships 1948-1949		422.50	
1949-1950 Prepaid		186.00	608.50
Detail as follows:			
97 renewals @ $3.50	$339.50		
7 new @ 3.50	24.50		
13 renewals @ 2.50	32.50		
3 new @ 2.50	7.50		
1 new @ 2.00	2.00		
3 Jr. ren. @ 1.50	4.50		
2 back dues @ 2.50	5.00		
2 back dues @ 3.50	7.00		
	$422.50		
1949-1950 Prepaid			
44 renewals @ $3.50	$154.00		
2 new @ 3.50	7.00		
10 renewals @ 2.50	25.00		
	$186.00		
News Letter Subscriptions		10.00	
1948 Banquet receipts		312.00	
Refund on banquet expenses-1948 (Bal. $50.00 check issued 2/27/48)		11.10	
Oregon Museum Fund		1.50	334.60
			$1,365.84
EXPENSES			
News Letter		186.02	
1948 Banquet Expenses		321.00	
Lecture Expenses		26.10	
Stationery, Printing & Postage		19.83	
Misc. Expenses		33.89	
Refund to Oregon Museum Fund		1.50	588.34
Balance on hand February 28, 1949			$ 777.50

RECONCILIATION

March 1, 1948, Check book balance	$ 422.74
Deposits March 1, 1948 - February 28, 1949	943.10
	1,365.84
Less Checks drawn March 1, 1948 - February 28, 1949	588.34
Check book balance February 28, 1949	$ 777.50

February 28, 1949

Pre-Closing Trial Balance

	Debit	Credit
United States National Bank	$1,365.84	$ 588.34
Memberships		608.50
News Letter	186.02	10.00
Lecture Expense	26.10	
Banquet Expenses	321.00	323.10
Stationery, Printing, and Postage	19.83	
Misc. Expenses	33.89	
Multigraph	239.54	
Furniture and Fixtures	35.05	
Oregon Museum Fund	1.50	1.50
Surplus		697.33
	$2,228.77	$2,228.77

Post-Closing Trial Balance

ASSETS		LIABILITIES	
United States National Bank	777.50		
Furniture and Fixtures	35.05	None	
Multigraph	119.77	Surplus	$932.32
	$ 932.32		$932.32

Respectfully submitted,

/s/ Grace M. Poppleton, Treasurer

****

REPORT OF AUDITING COMMITTEE

Examined the books of the Geological Society of the Oregon Country and found them correct and in good order.

/s/ Leslie W. Bartow, Chairman of the Auditing Committee

****

NEWS OF MEMBERS

Dr. and Mrs. J. Dean Butler figured prominently at the garden show and display of antique silver held on April 20th for the benefit of the McLoughlin House. Dr. Butler is President of the McLoughlin House Association. The club section of the Sunday Oregonian for April 24th carried a charming picture taken on this occasion, showing Dr. and Mrs. Butler in the garden of the Henry Cabell home. If you keep a scrapbook, you won't want to miss adding this picture to your collection.

* * * * *

And speaking of scrapbooks, another "must" is a picture, taken in hilarious mood, of Mildred Stockwell modelling some of her own hand-woven articles. The occasion is the Handweavers' Fashion Show on April 14, at the YWCA (Oregonian, Apr.18, 1949). By the way, what has become of Mildred lately? We're still waiting to hear

LUNCHEON NOTES

March 31, 1949

Twenty of the "faithful" gathered in Room "B" at the Chamber of Commerce for a feast of sauerkraut and wieners and sparkling conversation interspersed with fossils and other geological specimens....Mrs. Mildred Alcorn was a guest of Eliza Stevens....Mrs. Sam Brace and Mrs. Blanche Quigley, members, were attending their first luncheon meeting. The reporter hopes that they will not assume that our group specializes in sauerkraut and wieners. Mrs. Brace had specimens of fossil wood and "fools gold." Mrs. Quigley brought a piece of fossil fern from a location not specified....Dr. J. C. Stevens and John Ripley Forbes represented the Museum Foundation. Mr. Forbes made an impassioned plea for "hammer carpenters" for Thursday evenings....R. Erickson had an "F.R.D.K." from Kansas for identification and a reprint of pages 168 to 191 of University of Utah Bulletin, Vol. 38, No. 20, "The Great Basin, with Emphasis on Glacial and Post Glacial Times" by Ernst Antevs....Dr. Ruth Hopson brought her wonderful enthusiasm for nature study, backed up by fossils, barium roses, and literature on nature subjects. As Secretary of the Western Section of the American Nature Society Dr. Hopson secured a half dozen or more applications for membership after the meeting adjourned....President Leo F. Simon exhibited a nice slab of travertine from Death Valley, and a specimen of rock bearing crystals of copper sulphate....Letters from Phil Brogan to R. Erickson and Past President F.W.Libbey were read. They sounded as though our Society had made a favorable impression upon the Bend editor....Mr. Libbey spoke of a proposed trip to the location of the Clackamas County bauxite deposits....Dr. Hopson suggested that our Society sponsor the erection of markers along the highways of the State explaining the geology of the immediate vicinity on each sign.

O.E.S.

*Funny rock. Don't know.

* * * * *

April 7, 1949

Past President F.W.Libbey saved the day for the luncheon group of fourteen members by bringing three mineral specimens. They were a cinnabar concretion and a piece of silica boxwork from the Nesbet mine, Oak Grove Fork, Clackamas River. The boxwork is a honeycomb structure of silica in which the silica is thin and flat with the walls intersecting each other at various angles. He asked the members to guess the percentage of graphite in a sample of graphitic schist, after stating that he had been surprised at the small amount. Estimates varied from Dr. Stevens' 2 percent to Mr. Elder's 25 percent. The answer was 1 percent. Does this show the value of a doctor's degree?...Miriam Shepard brought a paper on "Mt. Hood's Latest Eruption and Glacier Advance" by Donald O. Lawrence, Department of Botany, University of Minnesota. It is a reprint from Mazama, vol.30, no.13, 1949....Tom Matthews brought several circulars entitled "El-Tronics" from "Patten Engineering Company." Some of them had to do with Geiger counters.... Rudolph Erickson had a letter from Dr. John Eliot Allen bragging mildly about the climate of Pennsylvania....Mr. Libbey announced coming meeting and field trips. ...President Leo Simon doesn't seem to be worrying about getting a new editor as much as he should. Or is Leo one of those strong, silent men who keep their troubles to themselves?...Dr. J. C. Stevens, president of the Oregon Museum Foundation, announced that the office of the museum has been moved to 908 N.E. Hassalo Street. Volunteer help in getting furniture and fixtures into place will be accepted - a union card is not required....Leo Simon presided at the meeting and Miriam Shepard collected dues from the reporter. The food was highly satisfactory, but there was anxiety expressed lest the C. of C. be expelled from the Restaurant Keeper's Union for serving edible meat.

O.E.S.

****

GEOLOGICAL NEWS LETTER

OFFICIAL PUBLICATION OF THE

VOL. 15 NO. 6 PORTLAND, OREGON June 1949

GEOLOGICAL NEWS-LETTER
Official Publication of the
Geological Society of the Oregon Country
421 Morgan Bldg. Portland, Oregon
POSTMASTER: Return Postage Guaranteed

THE GEOLOGICAL NEWS LETTER
Official publication of the
GEOLOGICAL SOCIETY OF THE OREGON COUNTRY

****

****

****

MEMBERSHIP APPLICATION
GEOLOGICAL SOCIETY OF THE OREGON COUNTRY

Qualifications and dues:

Applicant must be sponsored by a member and recommended by the Membership Committee. A knowledge of geology is not a requisite. There is no initiation fee. A Member shall be over 21 years of age; a junior member between 18 and 21. A single membership may be held by husband and wife and their children who are under 18 years of age. The dues are $3.50 per year ($1.50 for Junior members), payable in advance, and include one subscription to the Geological NEWS LETTER. Dues of members living in counties not adjacent to Multnomah County are $2.50 per year.

Date _____

I, _____ (please print full name) do hereby apply for membership (junior membership) in the Geological Society of the Oregon Country, subject to the provisions of the By-Laws.

Home address . . . . . .Phone . . . . . .

Business address . . . . . .Phone . . . . . .

Occupation . . . . . Hobbies . . . . . .

I am particularly interested in the following branches of geology: _____

_____ I enclose $_____
for the year's dues, March 1 to March 1. (Checks payable to the Society)

Sponsored by _____
(member)

_____
(signature)

SOCIETY ACTIVITIES

LECTURES: On the second and fourth Fridays of each month in Public Library Hall, S.W. 10th Avenue and Yamhill Street. Watch the Oregonian and Oregon Journal for announcements. Meetings start at 8:00 p.m.

TRIPS: An average of one field trip is held each month. For questions and suggestions concerning trips call Dr. F. G. Gilchrist, BR 7375.

LUNCHEONS: Every Thursday noon at the Chamber of Commerce, 824 S.W. 5th Avenue between Yamhill and Taylor streets. Luncheon 85 cents.

JUNE LECTURE ANNOUNCEMENTS

Friday June 10 — No meeting.

Friday June 24 — Lecture to be announced in local papers and at luncheon meetings.

JUNE FIELD TRIP

Sunday June 26 — Dr. Edwin T. Hodge of Oregon State College will lead our June field trip in a study of the geology of Columbia River Gorge from Cascade Locks eastward to Hood River and as far beyond as the day will permit.

The date is Sunday, June 26. Cars meeting at the New Journal Building should leave not later than 8:30 in order to assemble as a caravan at Cascade Locks at 10:00 a.m., Daylight Saving Time. From there on we shall be under the direction of Dr. Hodge. Any who are without transportation should contact the Service officer of the Society, Mr. Rudolph Erickson, 808 Equitable Bldg., as soon as possible.

Members who have Dr. Hodge's work "The Geology of the Lower Columbia River" which is contained in vol. 49, no. 6 of the Geological Society of America Bulletin, will do well to review his discussion of the area from the Locks eastward to The Dalles. A few copies of this bulletin are available from the Publication Department of Oregon State College at a price of $1.50. Anyone interested should contact Mr. Erickson.

Those who participated in the 1948 trip up the Gorge with Dr. Hodge will know what an extremely interesting and informative trip this will be. It is hoped that we shall have a turnout equally as good as at the 1948 trip.

****

MEMBERSHIP LIST IN PREPARATION

The list of members of the Society is to be published soon, and in order that the roster can be as complete as possible check your membership card to see that your dues are paid to the end of our fiscal year, February 28, 1950. Please send your checks to the secretary, making them payable to the Society. If your address or telephone number has been changed since the list was published last year, it would be appreciated if you would notify the secretary so that a correction can be made.

****

NEW MEMBER

Mary Foley (Mrs. M. J. Foley) 7 - 10th Street, Hood River, Oregon.

****

OUR CELESTIAL NEIGHBOR -- MARS*

By
Carl Price Richards

The city dweller is under considerable handicap when he seeks acquaintance with the splendors of the heavens. His expanse of view is restricted by buildings and trees, and the smoky, dust-laden atmosphere, illuminated by hundreds of artificial lights, creates a pall of haze which materially reduces the luminosity of the starry host above. He becomes accustomed to it and is apt to take for granted that the points of light actually are only as bright as the haze allows. Then comes a vacation, or some other good fortune which takes him up to the mountains, or out on the desert, and there, away from the smoke and baffling lights which afflict a city, the entrancing beauty is unveiled and the marvel of a clear starlight night is revealed as he beholds the myriad points of light sparkling with a brilliance and beauty which surpass description.

But the splendor of the scene is not encompassed solely by one's vision. A mental conception of the vastness of the structure one sees, of the harmony, the order and the rhythm of it all, adds much to the thrill and inspiration of the spectacle. At times there is one object amidst the twinkling host which commands special attention. When the moon is in the field of view its calm and eerie light holds the appeal, but when it is absent a veritable multitude seemingly compete for the honor.

At irregular intervals one or more of the five planets which are visible to the unaided eye become prominent objects in the celestial scene. Each one of them varies considerably in brilliance and appears in different parts of the sky relatively to the "fixed" stars. The ancients, unhampered by city lights as they observed the ever changing aspects of the heavens, recognized these neighboring worlds as "wanderers" - a description from which the word "planet" is derived.

Every two or three years there is one of them which appears as a bright, ruddy star and is an unusually striking sight as its steady, colored glow shines out in contrast to the twinkling points of light around. It is our celestial neighbor, the planet Mars, which, to us is probably the most interesting member of the planetary family of the sun. That we may have a better appreciation of this fascinating orb as it wanders among the constellations, let us review briefly a few of the facts concerning it.

Mars is 4215 miles in diameter, or only a little more than half that of the earth, but its mass is a mere tenth of the earth's. The density is 3.96, whereas the earth's is 5.52, water being 1.00. These differences in size, mass and density account for the gravitational attraction on the Martian surface being only 38 percent of what we experience here.

In two respects, however, Martian conditions closely resemble earthly ones. The siderial day of Mars, which is its period of axial rotation, is 24 hours 37 minutes 22 seconds, compared with the earth's 23 hours 56 minutes 4 seconds; and the inclination of its equator to its plane of revolution about the sun is 23 degrees 50 minutes, whereas the similar figure for the earth is 23 degrees 27 minutes 8 seconds. This very close similarity in equatorial inclination causes the Martian seasons to be comparable to ours, and telescopic observation of the planet shows definite evidence that this is so. The seasons are, however, of longer duration, as the year on Mars is nearly twice the length of ours.

---

*Mr. Richard's article was originally published in The Geode, vol. 4, no. 2, and has been revised by him for this publication.

Mars is the first "superior" planet, which means that it moves around the sun in an orbit next beyond that of the earth. It makes the circuit in 687 days, following an elliptical path which approaches to 128.3 million miles of the sun and recedes to 154.8 million miles; thus its mean distance - 141.55 is very close to one and a half times that of the earth, which, according to The American Ephemeris, is 92,897,416 miles. It is the elipticity of the orbits of both the earth and Mars that accounts for the difference in brightness of the planet at succeeding oppositions, as the position is called when it is due south at midnight, or opposite the sun. The two orbits are not concentric, causing the distance between them to vary from 34,600,000 to 62,900,000 miles, and oppositions are termed favorable or otherwise according to the distance between the two bodies on such occasions.

At the times of the least favorable oppositions the apparent diameter of the disc, as we see it from the earth, is only 13 seconds of arc, whereas during a favorable opposition, the planet's disc subtends an arc of 24.5 seconds, or nearly twice as much. These dimensions can be appreciated by recalling that the moon's disc has an average size of 1886 seconds; hence, at unfavorable oppositions the disc of Mars is only one-145th the diameter of the moon, and even when most favorably situated, it is only one-77th the apparent size of the moon. This means that, at a poor approach of the planet, it requires a telescope with a magnification of 145 to bring Mars to the size of the moon as seen with the naked eye, but at its best situation such a magnifying power would show the planet nearly twice the size of the moon - which is about how one sees the moon through an average field glass. But it must be remembered that Mars is about twice as large a sphere as the moon, hence the scale of the detail one could see on Mars would be only half that seen in a view of the moon of the same apparent size.

This problem of "seeing"is well nigh fundamental when it comes to the interpretation of the features of the moon and planets. Seeing varies to a very great extent according to the condition of the earth's atmosphere; high magnifications are possible only on rare occasions. The value of photography is severely limited by the tremor of the image caused by the earth's atmosphere through which the light rays from Mars have to pass, as the exposure cannot be short enough to destroy the motion. It is said that with the large light-gathering ability of the new 200 inch telescope it may be possible to obtain photographs of the moon, Mars, and possibly, other planets, with so short an exposure as to "freeze" the tremor, in the same way that high-speed photography "stops" a fast moving object. It is hoped this may be the case; it may settle the correctness or otherwise of certain details of the Martian surface attributed by different astronomers solely on the basis of visual observation.

Let it be said in passing that observing is a matter of patience, skill and experience; the keenness of one's eyes increases with practice. By persisting night after night in observing the same object, one's mind becomes acute to perceive and interpret the finer and more obscure detail. Expert observers in different parts of the world have noted certain features which have been lost or disputed by less practiced astronomers. Of course, the expert observers, if they are to accomplish this "super-seeing," must be equipped with the best instruments and use them under ideal atmospheric conditions.

Photography has made great contributions to the interpretation and understanding of Martian conditions, in spite of the limitation to its use mentioned above. By using different emulsions, and by photographing the planet in various kinds of light with the aid of the spectroscope, much has been learned which otherwise must have remained obscure. It is well known that photographs in the infrared penetrate a haze of thin vapor or cloud, whereas in violet light the nature

and extent of clouds and mist is rendered apparent. Thus, photographs of Mars in violet light lack the surface detail shown by infrared ones, indicating that the planet is enveloped in a thin, but deep, atmosphere. Careful measurements indicate this haze to be about sixty miles deep, but of extreme rarity. By spectroscopic analysis and other means, it has been estimated that the atmosphere of Mars is only one twentieth the density of the earth's and that its oxygen content is only about one thousandth that of our atmosphere.

Much importance is attached to the color of surface markings for the purpose of interpreting the nature of that surface. Color photography has contributed something there, but the greatest reliance is placed on the visual appraisal of color values. Great precautions have been taken to ensure that no physical or psychological factors should swerve the observer from recording the true colors and comparing them under similar conditions, with those of natural objects and substances on earth. The evaluation of these colors from time to time in terms of the indicated seasonal changes and other observed phenomena on Mars has amassed undeniable evidence concerning its climate and the nature and condition of its surface.

Mars is attended by two satellites; they are named Deimos and Phobos after the mythological horses which drew the chariot of the god Mars. Both are exceedingly small bodies, Deimos being only about ten miles in diameter and Phobos slightly larger. The former revolves at a distance of 14,600 miles from the center of the planet, and the latter at a distance of only 5,800 miles. So close is Phobos that, owing to the curvature of the planet's surface, it is invisible from latitudes on Mars greater than 69 degrees, but the outer one is visible up to latitude 82, or to within 8 degrees of the poles. In spite of their closeness to the surface of the planet, they appear to the Martians much smaller than our moon does to us. The nearer one, seen from the planet's equator, is only a third the size we see our satellite and only a fifth the size if viewed from latitude 69, while the outer one is less than one-tenth the apparent diameter of the moon. Both of them are too small to give the Martians the spectacle of a total eclipse of the sun, as our moon does to us.

Being close, their time of revolution about their primary is exceptionally rapid. In the case of the outer one, it makes a circuit every 30 hours, 18 minutes, while Phobos romps around in only 7 hours, 39 minutes. This is the only known instance in the heavens where a satellite revolves around a planet more quickly than the planet rotates on its axis. When one considers that Mars itself turns on its axis in a little more than 24 hours, it will be seen that the apparent motions of the satellites as seen by the Martians are indeed strange. Phobos crosses the sky from west to east in 5 hours, but Deimos moves in the orthodox direction, east to west, and nearly 66 hours elapse between its rising and setting, during which time it twice changes from new to full and back again to new. Moreover, during every revolution about its primary, each satellite undergoes total eclipse in the same manner as our moon does on much rarer occasions. The inner one is immersed in the planet's shadow, and hence totally eclipsed, for 54 minutes during every one of its speedy revolutions, while the outer one has its light similarly extinguished for 1 hour, 22 minutes every time it makes the circuit.

The chief interest in this fascinating world during recent years seems to have centered in speculation as to the likelihood, or even the possibility, of life, especially intelligent life, on this neighboring planet. Some leading authorities and observers maintain that there is much to support the contention that there are inhabitants on Mars and that they are beings of great intelligence. If that is true, they are our nearest celestial neighbors, for the moon, it is certain, cannot support life.

What are the prime requisites of life? These may be summed up as (1) oxygen, (2) water, (3) an equable temperature, (4) a reasonable amount of gravity, and (5) suitable food. Let us very briefly consider each in turn and in the light of Martian conditions.

The atmosphere of Mars, as stated above, is probably only about one-twentieth the density of the earth's and its oxygen content has been estimated to be as low as about 0.1 percent of the oxygen in our atmosphere. The scarcity of oxygen is thought to be due to the formation of iron oxide, to which the ruddy appearance of Mars is attributed, with the consequent depletion of the planet's atmosphere. But, even so, it is believed by some that there is enough to support specially adapted forms of living creatures.

With regard to water, all observers for the past two centuries have agreed as to the white areas at each pole being polar ice or frost caps. These wax and wane with the seasons and are conclusive evidence of the existence of water vapor, but the absence of oceans implies a very limited supply.

Highly developed instruments in our astronomical observatories have enabled astronomers to measure temperatures on heavenly bodies with considerable certainty and it is known that, although the temperature ranges on Mars are extreme, the limits are such as not to preclude the presence of life. The intensity of solar radiation at the distance of Mars is less than half that on the earth, but the rarity of the atmosphere allows more ready absorption, and the relative shortness of the nights prevents too great a dissipation of the heat stored during the day.

The gravity on the surface of Mars, as already stated, is 38 percent of terrestrial gravitation, which is well within reasonable limits of conditions to which forms of life could adapt themselves.

Food of living creatures, as we know such, consists almost exclusively of the substance of other living creatures, including vegetation. Hence, if life exists at all, the last mention requisite for its existence is at hand. But, apart from such inference, there is fairly certain observational evidence of extensive vegetational growth. The changes in color and appearance of certain areas of the planet undergo a definite and regular cycle of seasonal changes. Patches of green develop with the passing of winter, and these gradually change to a brownish hue as the season advances. The north and south hemispheres each undergo these changes in turn following the melting of their polar frost caps.

Thus, there appears to be ample evidence of the possibility of life in the Martian world and, if it does exist, it is certain that it must be very differently constituted from the forms of it with which we are familiar here on earth. The atmosphere of so low a pressure, with so small an oxygen content, Would necessitate a breathing mechanism of highly specialized form. The temperature range would demand a resistance to extremes, such that even the combination of the physiques of an Arab and an Eskimo in one person would be far from sufficient with which to combat it. And the muscular and cellular adaptation to the low gravity would entail differences in form and figure from any with which we are familiar.

The specialized form of physical life required to meet the particular conditions does not necessarily preclude an associated intelligence. On the contrary, certain observers claim to see on the surface of Mars indication of outstanding intelligent effort in meeting adverse conditions. More than half a century ago certain markings were detected which wore erroneously termed "canals." Subsequent

observation with better instruments have confirmed their presence and added to their number, and now more than 500 are definitely known and mapped. These markings consist of straight lines, which, to be visible at so great a distance, must be at least 16 miles in width. The changes in their form and color indicate, according to certain authorities, that they are bands of vegetation created by extensive systems of irrigation, engineered by the inhabitants. If that is the case, it bespeaks the exercise of a high degree of intelligence in the design and construction of so vast a scheme, with all the organization and subsidiary works which it would entail.

A great deal more could be written concerning this exceedingly interesting little world. It has been the subject of as intensive study and research as any other celestial body, with the probable exception of the sun and the moon. Many problems concerning it yet remain to be solved and it is certain that, on the occasion of each succeeding opposition, scientists the world over will direct every effort, aided by the ever improving instrumental equipment in astrophysical observatories, to the wresting of further information from the realm of the unknown.

****

In order that everyone may be in the proper frame of mind to reap full benefit and enjoyment from this second portion of the trip up the Columbia River Gorge, following is the write-up and log of the first section (Portland to Cascade Locks) which was covered in April 1948:

GEOLOGY OF THE COLUMBIA RIVER GORGE TO CASCADE LOCKS

By

Norris B. Stone

The G.S.O.C. field trip, under the able leadership of Dr. Edwin T. Hodge, started at 8:00 A.M. from S.W. Front Ave. and Yamhill St. on Sunday morning, April 25, 1948. Dr. Hodge, who is the Professor of Economic Geology at Oregon State College, was right in his element, as he personally has probably done more work in the lower Columbia Gorge area than any other one geologist. His personal explanations, combined with having the various formations right in front of us, made the geology of this interesting gorge very clear. Possibly one of the most surprising features to some was the youth of the Columbia River - figured, of course, in geological time. He was able to show us very convincingly that the Columbia has eaten its way (its channel) back through not only Columbia River basalt but also the andesite lava which forms the top or peak covering of the Cascade Range. In other words, our Columbia River, as we know it now, is younger than the andesite flow on top of the Cascades.

The north bank of the Columbia Gorge was shown as being an area of numerous immense slides - some of them coming down with such momentum that they actually were shoved up onto the south wall of the canyon. Very little sliding has been done from the south wall. However, Rooster Rock is not Columbia River basalt, as most of us have thought, but a monolith which was part of the andesite crown which has slid down to river level, remaining in its upright position. The circular valley between it and the main wall of the Gorge attest to the proof of the slide.

The Geesockers also had the privilege of visiting and inspecting Bonneville dam through the eyes of the geologist who actually placed the dam for the U.S. Engineers - none other than our own Dr. Hodge. The main power building rests on the solid rock of a sill-dike-sill which outcrops on the Oregon side in what is

known as Bonny rock. This is a case in which a sill has been extended straight up to form a dike, then turned over and down to form another dike, and then another turn at right angles forming the sill on which the power plant rests. Another case of this odd formation was found in a rock at Eagle Creek Park and was ably explained to us at the request of Dr. Hodge by Miss Ellen James, a former pupil of his.

The June 1938 issue of the Geological Society of America Bulletin contains the article "Geology of the Lower Columbia River," by Dr. Hodge. It should be read by everyone, and particularly those who went on this very interesting trip. We understand Oregon State College still has a few of these bulletins available. A log of the various stops made is given below, so that any of our readers may make the trip at any time and, together with Dr. Hodge's book, come back with a better understanding of the geology of this most interesting area.

LOG ON TRIP UP COLUMBIA GORGE - PORTLAND TO CASCADE LOCKS

By

Leo F. Simon, Trip Chairman

Start at S.W. Front and Yamhill St; over Burnside Bridge to Sandy Blvd; out N.E. Glisan to 12 Mile Road; turn left to Halsey St; right to Troutdale. Our mileage starts at:

0.0 Sandy River Bridge. Cliffs across river are Boring lavas (so named by Ray Treasner) resting on cemented gravels.

1.3 Cemented gravels overlaid by sandstone.

2.2 Crossbedding. Cemented gravels and sandstone.

2.6 Auto Club Bridge. Overhanging beds of sandstone. All these formations make up the Troutdale formation of Lower Pleistocene time. Drive straight ahead.

4.1 Springdale.

6.3 Corbett. Larch Mt. (Elev. 4,045'), an andesite volcano, is in middle distance; and Mt. Hood (11,245'), on the right, is also a dormant volcano.

Turn off highway to left at monument of Sam Hill.

8.2 Chanticleer Point (Elev. 925'). From here an awe-inspiring view of the Columbia Gorge is to be had. Across the river to the northeast is Mt. Zion (Elev. 1,658'), one of the younger andesite volcanoes. To the north is Silver Star Mountain (Elev. 4,304'). At the river's edge stands Rooster Rock; and looking east we see Crown Point (Elev. 725') and the Vista House. The large amphitheater between the road and the Vista House was caused by landslides.

Back again on highway. As you drive downhill to Crown Point:

8.9 Note Troutdale formation overlaid by Cascade andesite lavas and a bed of red bauxite (an ore of aluminum lying in between).

9.4 Crown Point and Vista House. Stop here and view the Columbia Gorge east and west.

9.8 Driving down watch for pillow lavas in right-hand wall - black lavas surrounded by yellow outlines.

11.8 Latourell Falls (294' high) named for a pioneer settler, Joseph Latourelle. The water tumbles over Columbia River basalt. Note columnar jointing in lower part of cliff.

13.1 Shepherd's Dell and Falls, a very scenic feature. Beyond is Mushroom Rock, a massive exposure of columnar basalt. Note the bluffs across the river.

14.1 Bridal Veil Falls are under the highway. The next point of interest is the high point to your right - Angel's Rest - also called Fort Rock, 1,500 feet above the river and capped with andesite. Coopey Falls are also seen here (117' high).

16.5 Fletcher Flat, with Archer Mountain across river. Not the many flows of Columbia River lava (Middle Miocene age).

17.3 Waukeena Falls (242' high), the most beautiful cascade on the highway. From here we drive about $\frac{1}{8}$ mile and come to

17.8 Multnomah Falls (620' high). These falls drop over a cliff composed of several flows of Columbia River basalt. If we were to leave our cars and walk up the trail from here toward Larch Mountain, we would pass several beautiful falls on Multnomah Creek before it drops over the cliff to form the falls.

18.5 Here we cross a landslide that covered the highway and the Union Pacific R. R. in 1946. Evidence is still seen in the river where the slide debris moved a light beacon built of pilings.

20.1 Oneonta Gorge and Bluff. This bluff is composed of two massive basalt flows, each about 100 feet thick. There had been a time of weathering, or layers of pumice fell on the lower flow, and formed soil. For evidence of this you can walk up Oneonta Gorge to your right and find logs (silicified, or petrified) from one to three feet in diameter embedded between these flows. This is a beautiful, narrow gorge with a clear, cold creek flowing in it and a falls. Oneonta Falls, about 100 feet high at the upper end.

20.5 Horsetail Falls (208' high) shoots and tumbles over a basalt cliff.

From here on, for about 4 miles to Warrendale, the south wall of the Gorge is visible to its full height of over 3,500 feet above the Columbia River. Protruding ridges have been whittled to jagged points, isolated turreted pinnacles stand out, castellated towers and terraced battlements are in the foreground.

22.1 St. Peters Dome (over 2,000' high) and Katani Rock are the two towering rocks in the foreground, standing out sufficiently from the high bluffs and apart to appear as sentinels guarding the gorge. Note the numerous lava flows exposed here. Have these sentinels slipped away from the great bluffs, or are they erosional remnants?

24.0 Near Warrendale, high up on the cliff, we see a series of beds alternating in color from red to light gray, or even almost white, composed of andesitic lavas, scoria, ash, lapilli, and fragmental rock; and cutting across these beds are several dikes of harder lava. All this is seen on a dissected

Beacon Rock, across the Columbia, is an andesitic dike (840' high and 500' in diameter) with a trail 4,000 feet long zigzagging up its side.

25.0 McCord Creek. To the right is Elowah Falls (289' high). Here we get our first view of the material that underlies the Columbia River basalt - beds of pebbly, gray, volcanic tuff filled with angular blocks of andesitic lava and other boulders, a tuff conglomerate. This material is easily eroded, and the overlying basalts, being undercut, break off and maintain their steep walls.

Across the bridge, in the tuffaceous bluff, is the petrified stump of a tree that was buried during the eruptions of the volcanoes.

26.1 Moffett Creek. At the mouth of this creek are tuffaceous beds containing fossil leaves and other plant remains.

Hamilton Mountain (2,432' high) is across the Columbia.

More tuffaceous bluffs on the way to Tanner Creek.

28.0 Tanner Creek; State fish hatchery; Bonneville and dam on the left of highway.

29.0 Eagle Creek and U.S. Forest Service Recreation Area. The Eagle Creek formation is exposed along this creek, famous for its plant fossils of Lower Miocene time. This is the oldest formation exposed in the Columbia Gorge. Dr. Thomas Condon first collected here in 1868.

From here on, the beautiful and turbulent Cascade Rapids were visible before Bonneville Dam was built - its pent-up waters now drowning the rapids. Across the river is flat-top Table Mountain, the fabled north abutment of the "Bridge of the Gods," of the famous book by Balch.

30.8 Cascade Locks and bridge. The locks, now almost under water, were used by steamboats to ascend the river around the rapids in days before the dam.

****

February 25, 1949

Report of the Secretary on LETTER BALLOT FOR OFFICERS OF THE SOCIETY FOR THE YEAR BEGINNING MARCH 1, 1949

As provided in Article VIII Section 1 of the Constitution of the Society, there was sent to each member in good standing a letter ballot containing the names of the regular ticket of nominees for offices in the Society for the year beginning March 1, 1949.

Prior to this annual meeting, 80 marked ballots had been returned to the Secretary. As no other names were submitted, according to our By-Laws the vote was unanimous in favor of the regular ticket of nominees as follows:

President	Mr. Leo F. Simon
Vice-President	Mr. F. L. Davis
Secretary	Miss Miriam Shepard
Treasurer	Mr. Norris B. Stone
Director	Mrs. Leslie W. Bartow

Respectfully submitted,
/s/ Miriam Shepard, Secretary

****

REPORT OF PROGRAM CHAIRMAN
Lectures - March 13, 1948-February 25, 1949

Saturday, March 13, 1948	Annual Banquet.
Thursday, March 25, 1948	Hollis Dole: "Geology of the Medford Area, Oregon."
Thursday, April 8, 1948	Leo Simon: "The John Day trip."
Thursday, April 22, 1948	Auction.
Friday, May 14, 1948	Dr. W. D. Wilkinson: "Preliminary report on the geology of the Dayville area of the John Day Valley."
Friday, May 28, 1948	Ford E. Wilson: "Geology of Hells's Canyon."
Friday, June 11, 1948	Audubon Screen Tours lecture.
Friday, June 25, 1948	W. A. Rockie: "The Palouse country."
Friday, July 9, 1948	Louis E. Rydell: "Travelog of U.S. Engineer projects."
Friday, July 23, 1948	Dr. Ruth Hopson: "Geology and other natural history of the McKenzie River region."
Friday, Aug. 13, 1948	Annual Picnic.
Friday, Aug. 27, 1948	Dr. Ewart Baldwin: "Geology of the Lost River Range, Idaho."
Friday, Sept. 10, 1948	Orrin E. Stanley: An illustrated travelogue of eastern Washington and Oregon.
Friday, Sept. 24, 1948	Tom Matthews: "Geology and geography of Kodiac Island."
Friday, Oct. 8, 1948	Dr. Henry P. Hansen: "Postglacial forest succession, climate, and chronology in the Pacific Northwest."
Friday, Oct. 22, 1948	Dr. George F. Beck: Joint meeting with Agate and Mineral Society - "Fossil woods."
Friday, Nov. 12, 1948	Audubon Screen Tours lecture.
Friday, Nov. 26, 1948	A. W. Hancock: "The John Day Country, Oregon's lost world."
Friday, Dec. 10, 1948	Dr. Olivia McHugh: "Geology of Utah."
Friday, Dec. 24, 1948	No meeting.
Friday, Jan 14, 1949	Audubon Screen Tours lecture.
Friday, Jan 28, 1949	Parke D. Snavely, Jr.: "Igneous rocks in the Coast Range of Oregon."

Friday, Feb. 11, 1949 — Leo F. Simon: "A visit to Mt. Ranier's Paradise Park area."

Friday, Feb. 25, 1949 — Annual Business Meeting.

****

COMMITTEE CHAIRMEN FOR THE YEAR 1949-1950

Program	Mr. Ford Wilson
Trips	Dr. F. G. Gilchrist, Chairman
	Mr. R. Erickson
	Mr. A. D. Vance
Membership	Mrs. M. P. James
Research	Mr. A. D. Vance
Service	Mr. R. Erickson
Publicity	Mrs. May Dale
Social	Mrs. L. Bartow
Historian	Miss Ada Henley
Librarian	Miss Margaret Hughes
Museum	Dr. J. C. Stevens
Public Relations	Mr. C. D. Phillips
Auditor	Mr. Leslie Bartow
Exhibits	Mr. A. W. Hancock
Annual Picnic	Miss Myrtice Fowler
Annual Banquet	Mrs. L. Bartow
Nomination Chairman	Mr. Franklin L. Davis

****

TRIP INFORMATION WANTED

In order that the trip committee may have as much information as possible with respect to places of geological interest that may be made the objectives of field trips, all members are requested to compile as thoroughly as possible a list of locations of fossil leaves, rocks, and other items that would, in their judgment, be of interest to the Society and to forward this list in to anyone of the three members of the trip committee. This information when received will be catalogued and cross-indexed and also mapped by the committee and should be most helpful in providing for interesting and instructive trips of the Society.

Your trip committee members are:

A. D. Vance, 5516 N. E. Rodney Avenue, Portland, Oregon.
R. Erickson, 808 Equitable Building, Portland, Oregon.
Dr. F. G. Gilchrist, Chairman, 304 S. W. Hamilton Avenue, Portland, Oregon, or c/o Lewis and Clark College, Portland, Oregon.

****

NEWS OF MEMBERS

News Letter readers will remember an article and map on the Hart Mt. Meteor, by J. Hugh Pruett, which appeared in March 1948. It is interesting to learn that reprints of this article and map were used by the astronomy instructors at both Pasadena Junior College and Phoenix Junior College as the basis for a class exercise in meteor tracing - the students being given the data, and then required to construct the map before seeing it.

We now have promise of a new article by Mr. Pruett on the Red Meteor, which appeared over Utah last fall. This will be printed in the News Letter sometime within the next few months.

Word has been received that Miss Margaret Hughes started on a trip east on May 23, flying by United Airlines first to Buffalo, New York. Her plan is to make a leisurely tour of the eastern states. We shall miss her at luncheons and on trips, but are happy she is having this opportunity.

* * * * *

A letter from Phil Brogan dated May 25, 1949, reads in part:

"Our geology club this past Sunday spent a most enjoyable day in a strange land of mud volcanoes - the Fort Rock country. We also found time for a trip over the bed of ancient Fort Rock Lake, where we collected arrowheads.

"My most enjoyable visit with your sociable group earlier this year will long be remembered. Regards to the 'gang.' "

* * * * *

The Oregonian of May 17, 1949, carries the news that Mr. E. Newton Bates was called to Washington, D. C., by the U.S. Dept. of Agriculture to receive a superior service award for meritorious service through the years. Awards were presented on May 16, 1949, by Secretary of Agriculture Charles F. Brannan.

Members of the Society who were at the June 2nd luncheon had the pleasure of seeing Mr. Bates' medal.

****

FOSSIL IN WASHINGTON IS IDENTIFIED AS RHINOCEROS

A strange formation found in central Washington in 1935 was revealed yesterday to be the fossil of a rhinoceros which lived there about 10,000,000 years ago.

It was trapped in molten lava.

How it escaped instant and complete cremation has bothered scientists ever since its discovery. Some experts figured this could not be, and accordingly claimed that the rhino was no rhino at all.

At Berkeley, however, Drs. W. M. Chappell, J. Wyatt Durham, and Donald E. Savage reported that it was definitely a prehistoric rhinoceros.

Further investigation of the fossil, they told the Paleontological Society, showed bone material, part of the animal's jaw, marks of its right front foot, and apparent skin folds.

A sudden cooling of the lava just as it reached the animal, they said probably spared it from turning into smoke.

From San Francisco Chronicle, April 16, 1949.

****

LUNCHEON NOTES

April 14, 1949

An even dozen members of the G.S.O.C. with no guests or specimens met to discuss the big earthquake of just twenty-four hours before the time for this meeting. There were as many versions of what happened as there were members present, and while they were from a dozen viewpoints by the same number of observers, each with his own personality, we find it impossible to make an intelligible report of the discussion. Perhaps one or more of the Society members may feel moved to put his observations on paper for the benefit of the rest of us.....A. D. Vance who sometimes rides a Portland Traction Company bus, when he is not driving his car to the office to make a quick dash to his "Back Acher" where he is starting his 1949 garden to eclipse all gardens, called attention to

the fact that our former member, Dr. E. E. Osgood, has been named "Citizen of the Week." In following up this news lead the reporter learned from the Portland Traction Company that since Dr. Osgood's picture appeared in the busses the former landlady of a Chinese doctor who studied under Dr. Osgood and was continually telling her what a wonderful man the doctor is asked the Traction Company to send one of the posters to this Chinese doctor who is now practicing his profession in his native land. Do you suppose that Mr. Vance will now think that his duties as associate editor have been discharged for the current volume of the Geological News Letter?

O.E.S.

* * * * *

April 21, 1949

Miriam Shepard reported that Ruth Coates had attended a geological society meeting in San Francisco where she had seen Dr. Staples and Dr. Baldwin..... Miss Shepard also called attention to an article on the Willamette Meteorite in a recent issue of Natural History. Dr. and Mrs. Arthur C. Jones had been to Eugene to testify in an automobile accident case which they had witnessed when they were on the McKenzie River trip last Fourth of July.....Mrs. Jones reported that their son, Irving, will be confined to his room at the Good Samaratin Hospital for several more weeks.....A. W. Hancock had been in the John Day country again and had a lower jaw of an oreodon with a bone of another animal across it - a sequel to a mystery "Who done it" of a million years ago. Detective Hancock digs up the facts!

O.E.S.

* * * * *

April 28, 1949

The luncheon meeting on April 28th progressed to a very satisfactory and uneventful conclusion, despite the thirteen members attending. On second thought, maybe the absence of guests could be blamed on the suspicious number. Miss Henley passed around a copy of the April 1949 issue of Desert magazine, as well as an excellent photo of rock formation at Terrebonne, Oregon, (taken by Mr. H. H. Sheldon, prominent local photographer of wild life and scenic views). Mr. Simon identified this formation as the "Smith Rocks," which were tunneled through in the construction of the canals which now water the Madras area. Mr. Elder submitted "just a rock" which, it was decided, possibly had some shell formations embedded in it; and Mr. Schminky, a specimen of metamorphosed volcanic rock from Copper Creek, Spirit Lake (Mt. St. Helens region). Mr. Schminky also called attention to an interesting article in the current issue of Truth magazine on a discovery of pitchblende in Canada. By this time it was one o'clock, and those of us who had to return to our jobs on time (among whom "ye ed" counts herself) were forced to take our leave.

* * * * *

May 5, 1949

Funny, isn't it, how the lack of some one presence can sometimes make itself more felt than the actual presence of a roomful of people? That's the way it was at the luncheon today, when we learned Bruce Schminky was in the hospital. A "get-well" card was procured and signed by the twelve members present. Getting down to actual business, Mrs. Jones made the excellent suggestion that regular notices be sent to interested persons in the educational field in order to enlist the active participation of geologically-minded young people in trips and lectures. She told also of plans to leave the following night for Los Angeles where Dr. Jones is to preside as Chairman of the Western Congress of Physical Medicine. Specimens included a radio-oscillator quartz section; a specimen of volcanic tuff from Pueblo Mts. (good building stone if it could be transported without too great expense); bauxite from the Estacada area, secured by Mr. Simon on our trip to the lower Clackamas River region on April 24; a sample of perthite from Galena, Oregon, brought by Mr. Erickson; and a "guesser," by Mr. Matthews that turned out to be lead and slag from the Department furnace.

* * * * *

May 12, 1949

"We are twelve" seems to be the theme song at the luncheons lately. John Robinson reported that the specimens of foraminifera found by the Society on the Hood Canal, Olympic Peninsula trip in a locality mapped as Oligocene have been definitely identified as Eocene in age. Discussing the recent earthquake, he said that the severity of the destruction in the Tacoma area was due to the weakness of the underlying alluvium, and did not necessarily mark the location of the fault. Specimens passed around were: spherosiderite from Boring lava at Canemah, Oregon, by Mr. Simon; vesuvianite from Butte County, California, by Miss Henley; and a pyrite concretion belonging to Helen Haven and sent over in Mr. Stanley's pocket. Mr. Simon announced that Bruce Schminky was in room 332 Providence Hospital where cards and, later on, visitors would be welcomed.

M.L.S.

* * * * *

May 19, 1949

Eleven members met for luncheon on Thursday, May 19, with Miss Miriam Shepard ably presiding in Mr. Simon's absence. A short note received from Mr. Schminky indicated he is progressing nicely, although there is still no definite plan at this date for his leaving the hospital. Dr. Stevens reported on the formal opening of the new temporary museum, and told of the recent installation there of a memorial to Dr. Booth in the form of an automatic light-changing device for the fluorescent mineral exhibit. Two interesting publications were passed around by Mr. Libbey: (a) "The Floods of May-June, 1948, in the Columbia River Basin," -- Geological Survey Water-Supply Paper 1080; and "Radioactive ores the prospector should know," Short Paper 18 published by the State Department of Geology and Mineral Industries. Anyone interested may secure the former from the Superintendent of Documents, U.S. Govt. Printing Office, Washington 25, D.C. -- price $1.25; and the latter from Rudolph Erickson (BE 7191). Regular price, 20¢; to Geesockers, 16¢.

* * * * *

May 26, 1949

An even dozen members, augmented most pleasantly by a guest in the person of Mr. Larry Newlands, met in the Chamber of Commerce dining room on May 26. After being introduced by Dr. Stevens, Mr. Newlands (who is connected with the Portland Cement Company) told of fossils frequently turned up during operation of their quarry near Dallas. Interesting specimens were brought in by some of the members as follows: An agate nodule (which had been turned up in a wheat-field near Eugene) by Ada Henley; pyrite and chalcopyrite (Medford area), Tom Matthews; and some samples of copper from Eocene rocks near New Era.

****

FIELD TRIP PLANNED FOR JULY

A trip to the buried forest on the Sandy River is planned for the latter part of July. The trip will be led by Paul Howell, geologist with the U. S. Army Engineers. Date to be announced in July meetings and News Letter.

****

GEOLOGICAL NEWS LETTER

OFFICIAL PUBLICATION OF THE

VOL. 15 NO. 7 PORTLAND, OREGON July 1949

GEOLOGICAL NEWS-LETTER
Official Publication of the
Geological Society of the Oregon Country
421 Morgan Bldg. Portland, Oregon
POSTMASTER: Return Postage Guaranteed

THE GEOLOGICAL NEWS LETTER
Official publication of the
GEOLOGICAL SOCIETY OF THE OREGON COUNTRY

****

Executive Board of the Society
Officers - 1949-1950

			Zone	Phone
President:	Leo F. Simon	7006 S.E. 21st Avenue	2	LA 0549
Vice Pres.:	F. L. Davis	7114 S.W. Corbett Street	1	CI 8975
Secretary:	Miriam R. Shepard	Box 164, Route 2	10	AT 7141-
Treasurer:	Norris B. Stone	Rt. 1, Box 179-A, Oswego,		Oswego 6531

Directors

Dr. Arthur C. Jones (1950)
Mrs. Mildred P. James (1950)
Chester A. Wheeler (1951)
F. W. Libbey (1951)
Mrs. Leslie W. Bartow (1952)

****

Staff of Geological NEWS LETTER

Editor:	Mrs. Leo W. Haven	2932 N.E. 47th Avenue	13	GA 2426
Asst. Editor:	Margaret L. Steere	6205 S.E. Scott Drive	16	BR 2276
Assoc. Editors:	Lloyd L. Ruff, A. D. Vance, H. B. Schminky, Kenneth N. Phillips, F. W. Libbey, O. E. Stanley			
Business Manager:	Chester A. Wheeler,	2944 N.E. 47th Avenue	13	GA 8243

****

MEMBERSHIP APPLICATION
GEOLOGICAL SOCIETY OF THE OREGON COUNTRY

Qualifications and dues:

Applicant must be sponsored by a member and recommended by the Membership Committee. A knowledge of geology is not a requisite. There is no initiation fee. A Member shall be over 21 years of age; a junior member between 18 and 21. A single membership may be held by husband and wife and their children who are under 18 years of age. The dues are $3.50 per year ($1.50 for Junior members), payable in advance, and include one subscription to the Geological NEWS LETTER. Dues of members living in counties not adjacent to Multnomah County are $2.50 per year.

Date _____

I, _____ (please print full name) do hereby apply for membership (junior membership) in the Geological Society of the Oregon Country, subject to the provisions of the By-Laws.

Home address . . . . . .Phone . . . . . .

Business address . . . . . .Phone . . . . . .

Occupation . . . . . Hobbies . . . . . .

I am particularly interested in the following branches of geology: _____

_____ I enclose $_____
for the year's dues, March 1 to March 1. (Checks payable to the Society)

Sponsored by _____
(member)

_____
(signature)

SOCIETY ACTIVITIES

LECTURES: On the second and fourth Fridays of each month in Public Library Hall, S.W. 10th Avenue and Yamhill Street. Watch the Oregonian and Oregon Journal for announcements. Meetings start at 8:00 p.m.

TRIPS: An average of one field trip is held each month. For questions and suggestions concerning trips call Dr. F. G. Gilchrist, BR 7375.

LUNCHEONS: Every Thursday noon at the Chamber of Commerce, 824 S.W. 5th Avenue between Yamhill and Taylor streets. Luncheon 85 cents.

JULY LECTURE ANNOUNCEMENTS

Friday July 8 — "Utah and its Parks" - Movies and kodachrome slides of Bryce Canyon, Zion, and Cedar Breaks, by Ford Wilson.

Friday July 22 — SOMETHING DIFFERENT IN MEETING NIGHTS. A basket supper around the outdoor fireplace at Lewis and Clark College at 6:30 p.m. Come earlier if you wish and enjoy the campus. Coffee will be served for which a small charge will be made. If it rains we'll eat indoors.

At 8:00 p.m., Dr. James Stauffer, geologist on the faculty of Lewis and Clark College, will speak on "The development of river valleys," illustrated by a very fine set of slides.

Bus leaves Trailways Bus Depot, 520 S.W. Salmon St., at 5:45 p.m.

****

Friday Aug.12 — Annual Picnic at Mt. Tabor Park at 6:30 p.m., Friday, August 12. Chairman May Dale says that, although plans are in progress, she is open to further suggestions; and she hopes her telephone wires will be kept hot by people offering to help. Call her at FI 3361 (business), or CA 2123 (home).

FIELD TRIP ANNOUNCEMENT

Sunday July 24 — There will be a field trip to the Buried Forest on the Sandy River on Sunday, July 24. The trip will be led by Paul W. Howell, geologist with the U.S. Corps of Engineers. Mr. Howell has prepared a map and log which are published on pages 58 and 59 of this issue of the News Letter. Both map and log will be very helpful in following the route and interpreting the geology of the area, so be sure to bring along your News Letter on this trip.

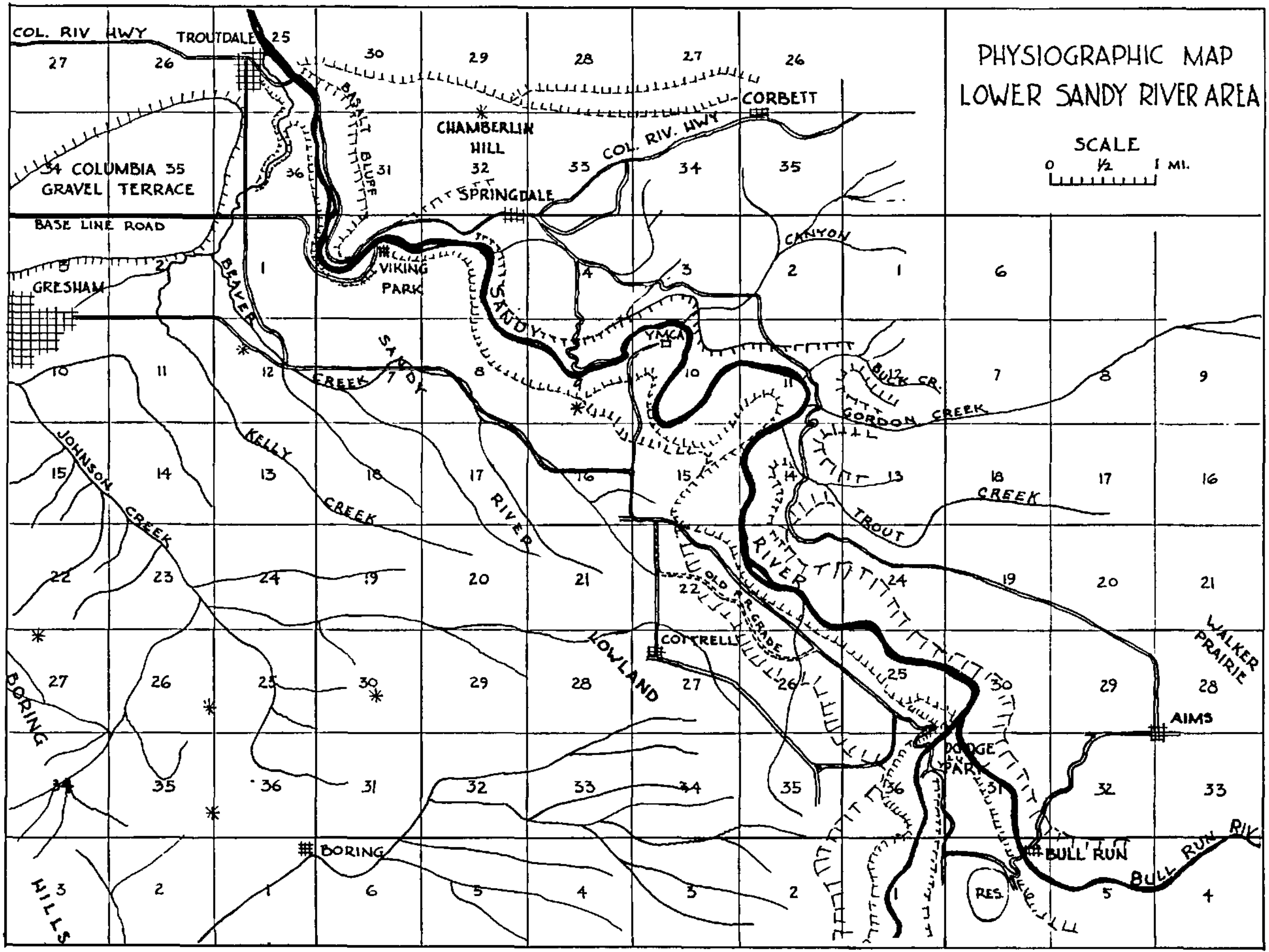
Those desiring transportation should call Mr. Rudolph Erickson BE 7191, or Oswego 8782. Bring lunch and meet at the Journal Building on Front Street at 8:30 a.m. The group will then proceed to Viking Park on the Sandy River, and from there will follow the schedule of the trip log.

****

REPORT CHANGE OF ADDRESS

If you change your address, even temporarily, please report such change promptly to the Business Manager (Chester A. Wheeler, 2944 N.E. 47th Ave.). Otherwise your News Letter may land in the dead letter office instead of reaching you at your new location. The reason for this is that second class mail will not be forwarded by the Post Office unless additional postage is affixed.

****


PHYSIOGRAPHIC MAP
LOWER SANDY RIVER AREA
SCALE
0 1/2 1 MI.
COL. RIV. HWY
TROUTDALE
BASALT BLUFF
CHAMBERLIN HILL
CORBETT
COL. RIV. HWY
COLUMBIA GRAVEL TERRACE
SPRINGDALE
BASE LINE ROAD
CANYON
GRESHAM
BEAVER
VIKING PARK
SANDY
YMCA
SANDY CREEK
BULL CR.
GORDON CREEK
JOHNSON CREEK
KELLY CREEK
RIVER
TROUT CREEK
RIVER
OLD R.R. GRADE
COTTRELL
LOWLAND
WALKER PRAIRIE
AIMS
BORING
DODGE PARK
BULL RUN
BULL RUN RIV.
RES.
BORING
HILLS

SANDY RIVER BURIED FOREST TRIP

July 24, 1949
Approximate time schedule subject to necessary deviations

9:00 AM Assemble at Viking Park on Sandy River. Briefing on objects of trip.

9:20 AM Leave Viking Park and proceed to Buried Forest on Sandy River. Forest is best exposed along section of river passing through section 9, SE of Springdale. Stop here for a half an hour. Longer if desired.

10:30 AM Leave Buried Forest area and proceed to Buck Creek. Stop here for lunch. Those desiring to do so can hike to fossil leaf area and do a little digging.

1:00 PM Leave Buck Creek and proceed eastward to rim of canyon in section 24. Short discourse on physiography of the region.

2:00 PM Proceed southward via Aims to Bull Run (Road is graveled from Clackamas County line to Bull Run), thence northward to Dodge Park at junction of Sandy and Bull Run rivers (road is paved; has many pot holes). Short stop here.

3:00 PM Cross Sandy River and proceed northward approximately 1 mile to junction with graveled county road on the left. Turn left and proceed to top of bluff. At junction with Bluff Road a short stop and discourse on the physiography.

3:30 PM Proceed northward to Cottrell. Turn right and proceed to Lusted Road (approx. 2 mi.). Turn left on Lusted Road and proceed ¼ mile. Turn right on Hossner Road and follow pavement on down Beaver Creek almost to junction with Section Line Road. Stop to examine glacial outwash. (Distance from Lusted Road to this stop is approximately 4.5 miles).

4:00 PM Proceed westward on Section Line Road ½ mile to Kane Road. Turn right on Kane Road and proceed to junction with Base Line Road. If time is available and the gang still energetic enough a short stop will be made here to inspect the Columbia Flood Gravels in the old county gravel pit. This is the eastward extension of these immense terraces or bars in the Portland area.

The trip will be disbanded here and members will proceed on their own.

****

REMINDER!!!

Don't forget to forward to any one of the three Trip Committee members all bits of information concerning places of geologic interest. This information, when assembled, catalogued, and mapped, will be of immense help in planning future trips.

Trip Committee: Dr. F. G. Gilchrist, Chm., c/o Lewis & Clark College, or
304 S.W. Hamilton Avenue
A. D. Vance, 5516 N. E. Rodney Avenue
R. Erickson, 808 Equitable Building

****

August field trips planned: On Sunday, August 28, a field trip, led by Parke Snavely, to the Centralia, Wash., area is scheduled. Also a short trip to Lake Oswego and Tonquin, Oreg., to see erratics may be arranged on another date.

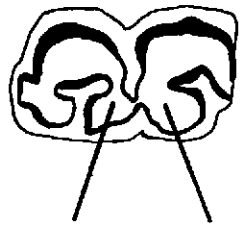


Figure 1

Plesippus lower molar
from Taunton, Washington

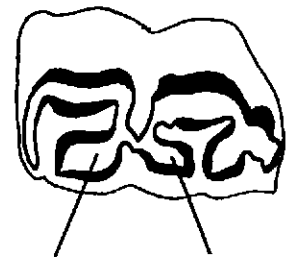


Figure 3

Plesippus lower molar
from Moses Lake, Washington
(Courtesy of Wesley Kerving)

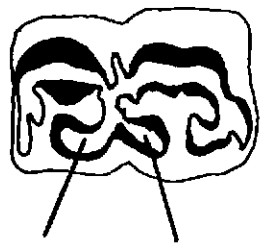


Figure 2

Plesippus lower premolar
from Moses Lake, Washington
(Courtesy of Wesley Kerving)

Figure 4

Pliohippus tooth from
Post, Oregon (Courtesy of
Mr. and Mrs. A. H. Hoffman)

Reproductions by Mary Hunter

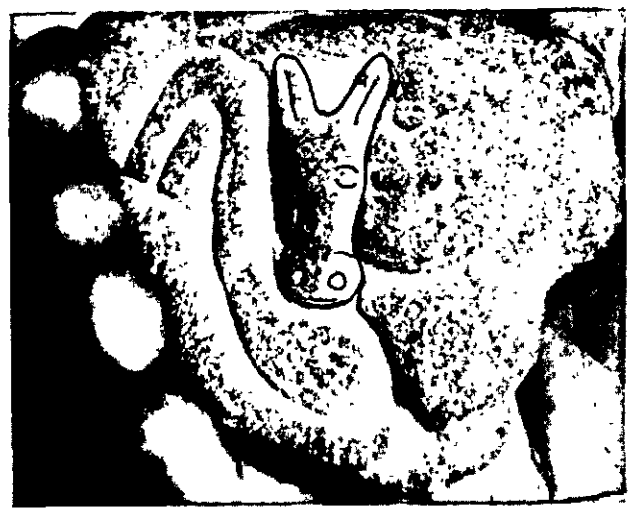


Figure 5 - Fred Ogden's Animal Stone

MODERN AND EXTINCT HORSES OF THE COLUMBIA BASIN

By
Dr. George Beck

Few people realize that the modern (European) horse was introduced into the Columbia Basin as recently as 200 years ago. The range soon became populated with these descendants of the Spanish horses, which took so well to the sage and grassy plains that portions became known as "Horse Heaven." Fossil bones, often well-petrified, indicate that central Washington was once well stocked with native horses, which for some unexplained reason passed out of existence a few thousands of years before the advent of the European horses.

These fossil horses of the Columbia Basin are confined, according to present knowledge, to the interval of time that has elapsed since the outpourings of the great sheets of Miocene Columbia basalt. There can be little doubt but that ancestral, smaller, 3-toed horses preceded the relative modern 1-toed forms, but no fossil remains of these primitive 3-toed horses have as yet been found in the basalts or in the sediments below.

In the late 70's Chas. Sternberg was digging for elephant and bison bones, and what-not, in the swampy areas on Pine Creek, Washington, when word arrived from his brother at Fort Walla Walla, that petrified bones had been found in the sand dunes south of Lind by members of the Federal land survey. The two brothers met in the area and found innumerable bones of supposed Ice Age animals, among them teeth that represent the first trace of fossil horse to be discovered in the Columbia Basin. These teeth were not to be distinguished, without difficulty, from the modern range horse, Equus.

Much later, in 1917, Drs. J. C. Merriam and J. P. Buwalda paid the White Bluffs a visit and found to their surprise that the horse bones present indicate a large 1-toed animal which they failed to distinguish from the modern Equus. This is in sharp contrast to the Yakima valley where 3-toed hipparions commingle with the primitive 1-toed form Pliohippus.

About 1935, Prof. Horner's boys of Othello called my attention to the vertebrate bed at Taunton some ten miles west of that town. This new locality has furnished some whole jaws of horse teeth and many isolated teeth and other skeletal remnants. The best of these materials was advanced to another institution where it has been lying dormant; but what I have on hand provides us with a typical lower molar (figure no. 1). Similar horse teeth have been found northward beyond Othello, and within the last few years Wesley Kerving and his friends have encountered equivalent horse grinders on the shores of Moses Lake. Some of these were seen through ice on the lake. Two of these (lower grinders) are represented by figures 2 and 3.

All of these fossil horses represented by petrified teeth and bones (which can not therefore be confused with the domestic horse of post-Columbian time) belong to a single type near or equivalent to Plesippus shoshonensis in the opinion of the writer. This includes the collections of Sternberg, and Merriam and Buwalda as well as those made by us in the same localities. It also includes the horses from localities in the Columbia Basin north of Saddle Mountain. Supporting evidence for a late Pliocene age is found in the camelids, which large and small, carry five grinders.

Nothing more primitive than the "almost horse" Plesippus has been found in the Basin, but for comparison a Pliohippus grinder from near Post, Oregon, is included as figure no. 4. This was found by Mr. and Mrs. A. H. Hoffman. Pliohippus grinders

are apt to be smaller, more curved, and with less crinkling of the enamel pattern, than typical Plesippus or Equus teeth. In the lower Pliohippus grinders the "double loop," indicated by lines, is less well aligned, and the individual "loops" more nearly circular than in the Plesippus teeth.

These native "almost horses" and true horses of the Columbia Basin were so near the size and configuration of the Spanish stock that the more recent unpetrified remains can seldom be distinguished from the present animals. Sometimes one has to fall back upon the age of the deposit as indicated by association with elephants, camels, and giant bison. Several of the late Ice Age or postglacial deposits occur in the Basin, notably along Lind Coulee north of Warden.

Whatever became of the later true horses of the Columbia Basin, the Indians arrived on the scene in time to help finish them off. They ate them, they made at least one artistic representation of them, but they did not succeed in riding them. Why - since modern Indians are helpless afoot on the plains - didn't they break these potential steeds to the saddle, thereby saving themselves as well as the horses? Undoubtedly they tried. Young animals are everywhere brought in by youngsters and fondled. If these immature game animals fall in with the advantages of association with man, good and well. If not domestication is scarcely worth the effort. I suspect that the Columbia Basin native horses, like the zebra, proved intractable.

That they looked asslike is almost assured. The horse head reproduced on the animal stone found at Vantage by Fred Ogden in 1935, or so, is donkeylike in its proportions. One stone face showing the horse, a man, a snake, and the profile of a lion is represented by figure no.5.

The extinction of the native horses could not have preceded the landing of Columbus by more than ten thousand years, and probably less. The reintroduction of horses 200 years ago created a greater change in the Indian way of life, perhaps, than has the automobile. Horses soon populated the hills, and the fur traders found them waiting as beasts of burden and food. Horse meat was a staple article of diet as the annual brigade struggled up the Columbia. The horses were driven up the left bank, from camp to camp, and slaughtered as needed. Ross Cox, in about the year 1816, was apparently the first white to ride across the Columbia Basin, horseback.

In the closing decades of the last century the Basin in the hands of white stockmen became a horse range, and I myself as a boy saw the transition from the roundup to the 36-horse combined harvester.

Horses took a terrible beating in the process of reducing the sage to farms. In large teams they suffered for air and water, choked on dust, and often dragged an overload - a veritable horses' Siberia. Fortunately a few decades were sufficient to evolve and test out the caterpillar tractor and relieve the horses from this terrible bondage. Today a person can cross and recross the Columbia Basin without seeing a solitary horse.

Nothing is left, to speak of, of the modern and ancient horses of the Columbia Basin, except their bones lying commingled in its waste areas. Only when petrified bones are found can one be sure that he is dealing with the earlier "almost horses" that preceded the Ice Age.

****

GEOLOGIC FIELD TRIP TO THE NEWPORT AREA
May 28, 29, and 30, 1949

By
May R. Dale
(With technical advice of Parke D. Snavely, Jr.)

A geologic field trip along the coastal area of central Oregon was led by Parke D. Snavely, Jr., geologist with the U.S. Geological Survey. Mr. Snavely was one of the geologists who mapped this area for the Fuels Branch of the Survey during the summer and fall of 1946 and the spring of 1947. A part of this work has been published as a preliminary map which is titled, "The Geology of the Newport-Waldport Area, Lincoln and Lane Counties, Oregon" by H. E. Vokes, Hans Norbisrath, and Parke D. Snavely.* The area north of Cape Foulweather was mapped by Snavely and Vokes, but this work as yet has not been published. This report is titled "The Geology of the Coastal Area between Cape Kiwanda and Cape Foulweather."

The group met at Weaver's Agate shop along the Roads End road, two miles north of Ocean Lake. The caravan proceeded to the first stop at Roads End about 11:30.

Stop I was at Roads End, just south of the mouth of the Salmon River. Here we saw an excellent exposure of upper Eocene shale and siltstone, both of which contain much ashy material. The name which is being proposed for these sedimentary rocks is the Nestucca formation, but to date this name has not appeared in the literature. The Nestucca formation in this area is in fault contact with volcanic breccias which form the headland and the numerous sea stacks (small islands) at Roads End. Also present here are dikes of pyroclastic material and dark basaltic sandstone which cut the Nestucca formation. It is believed by Snavely that these dikes intruded the Nestucca formation in a manner similar to implacement of sandstone dikes, by a forceful injection. Large landslides are common in this area, as they are all along the Oregon coast. A large 4-unit motel was destroyed by landslide at Roads End in 1947.

Stop II was at Boiler Bay, which is a beautiful embayment located 1¼ miles north of Depoe Bay. From our vantage point on Government Point, now called Boiler Bay State Park, we could view the westward-dipping middle Miocene Astoria formation which in this area is largely sandstone. Overlying the Astoria formation and forming the headland of Government Point a thick series of water-lain pyroclastic material appears. Many small faults cut the rocks here and we were standing near the edge of a fault scarp which forms the north boundary of Government Point. A rather thick sill-like body consisting of pyroclastic material and fragments of Astoria sandstone cuts the Astoria formation near the old ship boiler from which Boiler Bay gets its name.

Stop III was at Depoe Bay where we examined a 100-foot thick pillow basalt flow which now forms the straight shore line along the eastern part of the outer bay. Small joints, or breaks, are common in this flow, and many of them have been enlarged by erosion. We were told that the pillow basalt flow seen at Depoe Bay was interbedded with the Astoria formation. The Astoria formation contains many well-preserved fossils where it outcrops within the small boat harbor. The headlands both north and south of Depoe Bay consist of volcanic breccia and tuffs and contain some carbonized wood fragments.

---

*This map, "The Oil & Gas Investigations Preliminary Map #88", may be secured from the Director of U.S. Geological Survey, Washington 25, D. C. (Price 75¢). The area covered is from 44° 45' to 44° 15' -- or, roughly, from Devil's Punch Bowl south to Cummins Creek (near Yachats).

Stop IV at Otter Crest Lookout on top of Cape Foulweather afforded us an excellent view of the coast line south towards Newport. The origin of sharp-pointed Iron Mountain was discussed and it appears to be a neck of a volcano which was active during middle Miocene time. Snavely said that the reported magnetic attraction of Iron Mountain might be due to the high magnetite content in the basalt.

Stop V was at Devil's Punch Bowl, a large basin formed by the collapse of a large sea cave. Nodules of iron sulfide were collected out of the Yaquina formation which forms this headland. The Yaquina formation is in fault contact with the Astoria formation along the south side of the headland.

Stop VI was made for the paleontologists in the group and those who enjoy collecting fossils. We stopped along the new road cuts on U.S. Highway 101 about 1½ miles south of the little town of Otter Rock. Here many nice fossils were collected out of the Astoria formation. Mr. Snavely tentatively identified some of the megafossils as species of Spissula, Anadara, and Crepidula; however, he did not want to be mistaken for a paleontologist. He expressed a wish that Dr. Vokes, a bonafide paleontologist, were present to identify the many excellent fossils collected by the group.

The caravan met at Otis Junction at 9 a.m. the second morning and several more members joined the trip at that time. Snavely introduced a former classmate of his, Mr. Harold Billman, Division Micropaleontologist for the Union Oil Company. Mr. Billman explained to some of the group how he uses foraminifera (or bugs) in guiding the search for new sources of petroleum.

Stop I was at the Widow Creek quarry, which is about 5 miles east of Otis Junction. Here we saw the oldest rocks in the Coast Range of Oregon. These rocks have been named the Siletz River volcanic series by Snavely and Baldwin, and the rocks consist chiefly of pillow lavas with minor marine interbeds. The fossils in the sedimentary beds contain a fauna which indicates a middle Eocene age for these rocks. The pillow structures in these lavas are due to the extrusion of the basalt under water. Zeolitic minerals and calcite are abundant in these lavas.

Stop II was a short stop along the Salmon River highway, about one-half mile east of Otis Junction, to study one of the marine interbeds in the Siletz River volcanic series. Corals and large foraminifera were collected at this location.

Stop III about one mile west of Otis, along the Three Rocks road, was made to examine some olivine basalt float from a nearby sill or dike. The olivine in this basalt makes up about 30 percent of the total rock. A few hundred feet west of this stop we saw a basalt dike of similar composition cutting the Nestucca formation.

Stop IV was near the end of the Three Rocks road and here a large dike of basalt cuts the shaly Nestucca formation. Many poorly preserved forams were seen in the shale, but none were collected. A large mudflow which contains a mixture of basalt, carbonized wood, and pyroclastic material in a muddy matrix crops out in this same area.

Looking towards the east from our vantage point along the Three Rocks road we saw the flat upland surfaces of Saddleback Mountain, which is over 3,000 feet in elevation. The tablelike appearance, we were told, was due to the fact that this mountain is capped by a thick sill. (Baldwin and Snavely are now writing a paper which will discuss the sills in the central Coast Range of Oregon.)

Stop V was just north of Neskowin near Proposal Rock, which is composed of upper Eocene volcanic material. The tide was in so we were not able to see the many tree trunks that are visible at low tide. Snavely believes that a forest has been drowned in this area by an eustatic change in sea level. He pointed out that in the South Pacific there are many submarine terraces which were probably cut when the sea stood at a lower level than it is today. He suggested to some members that they read the interesting history of the drowning of the mouth of the Hudson River along the Atlantic coast. One of the reasons he gave for a rise in sea level is the melting of the continental glaciers. The drowning in this area appears to be quite recent, maybe less than 200 years, as the wood in the stumps is almost unaltered.

Stop VI was just above Winema Beach where a dark fossiliferous basaltic sandstone crops out along U.S. Highway 101. The material from which this sandstone was derived was the upper Eocene volcanic series we saw at Proposal Rock. Very few fossils were collected from this outcrop by the group. A basalt sill has intruded the sandstone in this area and has been mined for road metal.

Stop VII, on the highway along the north side of Nestucca, was made to see a "textbook" example of a high angle normal fault. This fault has off-set thickly bedded pyroclastic rocks and may have a vertical movement of 100 feet.

Stop VIII at Pacific City afforded us an excellent view of both Haystack Rock and Cape Kiwanda. Haystack Rock is composed of middle Miocene volcanic rock and Cape Kiwanda consists of Astoria sandstone. Snavely believes that the volcanic rocks that form Haystack Rock have helped to protect the soft sandstone at Cape Kiwanda from erosion by wave action. However, there is evidence of recent undercutting by the sea at Cape Kiwanda which could be testified to by looking through the several pairs of field glasses in the party. The area east of Cape Kiwanda and along the coast here is covered by large photogenic sand dunes.

The official trip was ended at this point, and "Thank-you's" were extended to Mr. Snavely for a well-led trip filled with interest and geologic information.

Random Reflections on the Geologic Field Trip to the Newport Area, May 28-30, 1949, from a Non-technical Viewpoint by May R. Dale

After an early morning ride to the coast, we joined the caravan at Otis Junction for a field trip which retained one's interest from the start to the finish. The weather favored us too, especially for the first two sunny days. Our first stop was at "Gem City Museum" where Mr. and Mrs. Weaver have been original in displaying their specimens. A model town with buildings painted in gold, decorated with thousands of "gems," glitters quite royally. Later in the day one car was spotted by an "eager beaver" State Highway policeman who reminded the driver that the owner of a car must carry his identification and handed him a warning ticket. This driver rewarded the "cop" with a brief lecture on the Geological Society of the Oregon Country. A few of us visited the Spencer Creek marine fossil location (Astoria Miocene), just south of the little town of Otter Rock. We did find some fossilized teredo-bored wood, although it was not abundant. That first evening, after a cabin-cooked fresh fish dinner, we gathered around a bonfire on the beach, sang songs, and enjoyed a brand new moon.

On Sunday morning our particular party made a brief stop at Boiler Bay where, at low tide, one could get an excellent view of the breccia sill - and cameras went into action. Noon found us at Neskowin Beach where lunch took first place

over geology for awhile. The warm sun on the sands was enjoyed but, evidently, was too much for this reporter for she was chagrined to find herself a half-hour late at the next talk. Sunday night a few of us got together for a memorable crab feast (with all the trimmings); then sang songs around a camp fire on the beach, and there was that new moon again - only one night older.

Monday morning our car with its three passengers headed for Yaquina Head to explore the Marine Gardens. There we met Mr. Stanley, a lone figure braving the dull, rainy morning for a few glimpses of more of Nature's surprises. I was thrilled when I first saw these marine wonders for I had never seen them before. There were clear pools with nests of purple sea urchins honeycombing the rocks; delicate sea anemone with "petals" open for receiving food, or closed, ready to spout water when pressed upon; hundreds of purple or orange starfish; chitons (sluglike animals with butterflylike shells on their backs to protect them from the rocks, yet flexibly joined for easy movement); boring clams (or rock oysters) which have burrowed into the rocks to spend the rest of their lives entombed there, having grown shells over only the unprotected parts of their body. There were shore crabs, kelp crabs, and the hermit crab with his second-hand housing; turbin shells, and limpets (Chinese Hats). And sponges created gorgeous splurges of red.

Mr. Simon and Mr. Stanley were capturing, by film, fragments of this beauteous fairyland whenever the sun shone through. It had rained when we climbed the high rocks out from shore, and the slippery algae made climbing hazardous - but a lot of fun. One algae reminded me of a bunch of grapes attached to a flowing corded ribbon. So I took some of it along with me. Believe me, however, after one week in the apartment, it was so odoriferous that my eyes could no longer appreciate its beauty, and out it went. We captured an eel-like creature, about 7 inches long (hiding under the rocks in very shallow water) which we later identified as a "blenny."

Up to now I had been talked out of carrying home star fishes and purple sea urchins because in the drying-out process, it was thought I would be very unpopular with other tenants. But when I found a large specimen of the red sea urchin, no one could dissuade me from taking this beauty along. He kept his spikes up and remained very much alive. Urchins are well-named "sea porcupines" too, because the shells are covered with spines which fit into protuberances of the shell and form a ball and socket movement that becomes the locomotion of the animal. The shell is more accurately called a "test" for it was not formed by secretion as a true shell is. Many tests with the spines and skin removed can be picked up. They show 5 double bands of perforated plates, each with a narrow zone of rounded knobs down the center, separated by 5 broader areas covered with similar knobs. Numerous sucker feelers protrude from the test and are said to be the sense of smell. The large circular mouth is closed by 5 triangular, valvelike flaps. The hour we had planned to stay had run into four, so we reluctantly returned to Newport for "brunch" and packed for the return trip.

In Tillamook we intended to visit a short while as guests of Ruth Coates, conchologist, and her mother, but we remained some 3 hours. A visit to Ruth's "Hobby House" is really a wonderful experience. All of you folks who missed it, missed a treat! I left Ruth the red sea urchin, and received two star fish and a purple sea urchin test with the spines nicely preserved. Besides a superb collection of shells, Ruth collects some geological specimens. Some of her lighted displays make one envious. There is also quite an extensive library on scientific subjects for easy reference. I was especially fascinated by one series of shells showing progressively advanced stages from the infant to the mature adult of Buscycon perservum (left-handed whelk). They show how the color intensity fades during the lifetime. These particular specimens are from Florida. Ruth is busy with the task of classifying the shell collection of the Oregon Museum of Science and Industry.

From the hobby house, with its collection of now lifeless specimens, one looks out on a garden of gorgeous rhododendrons, azaleas, and other flowers, and an enchantingly planted lily pond - all of these very recent and alive, I assure you. The garden is Mrs. Coates' hobby. We bid our gracious hostesses good-bye and, on the last trek home, we reviewed the happy experiences and knowledge we had obtained from the trip, all of us agreeing that it was one of the best, and giving thanks to all those who made it possible.

- - - - -

To illustrate how impressive an introduction to the study of geology can be, one of our guests on this trip exclaimed, and with reverence, "From now on whenever I see a rock, I shall tip my hat."

****

LUNCHEON NOTES

June 9, 1949

Four of the eleven members present at the June 9th luncheon were past-presidents. Does this indicate that we should have more past-presidents if we are to keep the luncheon attendance up to par? .....Mr. Elder had some nice calcite crystals from the southwestern corner of Montana, more than a mile above sea-level.....Rudolph Erickson brought leaf impressions and a section of opalized wood; and A. W. Hancock, who had been in the John Day country again, had specimens of fossil nuts. He said that he found a piece of fossilized palm very close to a fossil walnut. This statement started a discussion which lasted till after adjournment about how trees having such different characteristics as palm and walnut could grow in the same place at apparently the same time; for Mr. Hancock said the fossils were found in one horizon.....Dr. Hodge suggested that this matter would be a splendid subject for a study and a paper.

O.E.S.

* * * * *

June 16, 1949

The capacity of Room 5 at the Chamber of Commerce was reached on June 16th when 22 people gathered for the weekly luncheon meeting.....Carl P. Richards, the Salem astronomer-geologist, etc., brought four guests. They were James H. Karle, T. P. Martin, and Margaret Edgar from Salem and H. J. Caruthers of Portland, all astronomers.....Several of our school-teacher members were also present. They brought a guest, Alda Overstreet.....Rose Jennings transacted some business with the secretary.....Miriam Shepard exhibited a book: "Natural History of Marine Animals" by McGinitie.....Orrin Stanley had borrowed a booklet on "Prospecting for Uranium" which he brought to the meeting.....G. V. Elder had specimens of bismuth and gold.....F. W. Libbey showed specimens of fluorescent calcite crystals from Arizona and pitchstone from New Mexico.....Dr. Hodge discussed Mr. Elder's sample of gold ore and explained Carl Richard's photograph of the end of a lava tunnel.

O.E.S.

* * * * *

June 23, 1949

The meeting on June 23 was highlighted by the return of H. B. Schminky, looking very fit in spite of several weeks in the hospital. Orrin E. Stanley displayed his photographs taken on the trip to Newport in May; Ada Henley brought a hanksite crystal from Searles Lake in the Mojave Desert region; and Rudolph Erickson told of receiving a report from Dr. Chaney to the effect that the fossil leaves which Mr. Erickson exhibited some weeks ago from Big Boulder on the middle fork of the John Day were Clarno fossils. This is the first report of Clarno specimens in that locality.

****

GEOLOGY OF THE DORENA DAM SITE

On June 24, at Library Hall, Mr. McCabe of the U.S. Staff at Dorena Dam, Oregon, lectured before the Geological Society of the Oregon Country on the subject, "Geology of the Dorena Dam Site." The lecture was illustrated by more than 100 kodachrome slides which combined beauty with their usefulness in making the subject matter more easily absorbed.

Dorena Dam, on the Rowe River, 6 miles from Cottage Grove, is being built for flood control and will control the drainage of 265 square miles. It is a part of the Willamette Basin Project and should be completed in 1950. Some idea of the size may be obtained from these facts:

The dam is 3300 feet long, 615 feet thick at the base, 33 feet wide at the top, and 140 feet in height. There were 160,000 cubic yards of concrete used and 3,000,000 cubic yards of earthwork. The lake will be 5.3 miles by 1.0 mile. Depth of water at spillway up to overflow section will be 215 feet.

It is an earthwork dam with a concrete spillway with gates built into it. Cement has been pumped into all the holes and cracks. A typical slide was the one that showed how the "sheep-foot" roller packed the earth.

Geological Facts: The rocks are mainly stratigraphic volcanic tuffs, conglomerates and andesite flows. The spillway is built on andesite. There is a fault zone which passes through the earthwork but not through the concrete part of the dam. Age of rocks: Oligocene. The sandstone contains marine shell fossils.

This summarized account is to give all those who could not attend this fine lecture a slight intimation of what they missed.

M.R.D.

****

NEW MEMBER

	Phone
Ruth Grey Gooch, 8637 S.E. Alder Street, Portland 16, Oregon.	KE 6897

ADDRESS CHANGES

Mr. and Mrs. E. C. Johnson, 12311 S.E. Stark Street, Portland 16,	KE 1024
Mr. and Mrs. Arthur W. Schmidt, 9945 N.E. Shaver St., " 20,	LI 2797
Mr. and Mrs. T. C. Matthews, 4014 N.E. Flanders St., " 14,	EM 6759

NEWS OF MEMBERS

Mr. and Mrs. Howard E. Bowers, who have been studying at Oregon State College this winter, have returned to 1033 S.E. 84th Avenue, Portland, for the summer.

* * * * *

A newspaper clipping tells about a professor at Penn State who is so absent-minded that he leaves a chair below his office window so that he won't have too long a drop should he exit through his window instead of through the door. Is it possible that the Eastern climate can have had such an evil influence on our Past President, Dr. John Eliot Allen?

Editorial note: All scientific research to the contrary, we now have definite proof of the existence of psychic force. The very first mail delivery after the above had been prepared brought Dr. Allen's promise of an article to appear in in the August News Letter; and as evidence of good faith he enclosed the following:

"Ostracods so little be,
You cannot tell the he from she.
But he can tell, and so can she!

J.E.A."

****

GEOLOGICAL NEWS LETTER

OFFICIAL PUBLICATION OF THE

VOL. 15 NO. 8 PORTLAND, OREGON August 1949

GEOLOGICAL NEWS-LETTER
Official Publication of the
Geological Society of the Oregon Country
421 Morgan Bldg. Portland, Oregon
POSTMASTER: Return Postage Guaranteed

THE GEOLOGICAL NEWS LETTER
Official publication of the
GEOLOGICAL SOCIETY OF THE OREGON COUNTRY

****

****

Staff of Geological NEWS LETTER

Editor:	Mrs. Leo W. Haven	2932 N.E. 47th Avenue	13	GA 2426
Asst. Editor:	Margaret L. Steere	6205 S.E. Scott Drive	16	BR 2276
Assoc. Editors:	Lloyd L. Ruff, A. D. Vance, H. B. Schminky, Kenneth N. Phillips, F. W. Libbey, O. E. Stanley			
Business Manager:	Chester A. Wheeler, 2944 N.E. 47th Avenue		13	GA 8243

****

MEMBERSHIP APPLICATION
GEOLOGICAL SOCIETY OF THE OREGON COUNTRY

Qualifications and dues:

Applicant must be sponsored by a member and recommended by the Membership Committee. A knowledge of geology is not a requisite. There is no initiation fee. A Member shall be over 21 years of age; a junior member between 18 and 21. A single membership may be held by husband and wife and their children who are under 18 years of age. The dues are $3.50 per year ($1.50 for Junior members), payable in advance, and include one subscription to the Geological NEWS LETTER. Dues of members living in counties not adjacent to Multnomah County are $2.50 per year.

Date _____

I, _____ (please print full name) do hereby apply for membership (junior membership) in the Geological Society of the Oregon Country, subject to the provisions of the By-Laws.

Home address . . . . . .Phone . . . . . .

Business address . . . . . .Phone . . . . . .

Occupation . . . . . Hobbies . . . . . .

I am particularly interested in the following branches of geology: _____

_____ I enclose $_____
for the year's dues, March 1 to March 1. (Checks payable to the Society)

Sponsored by _____
(member)

_____
(signature)

Society Activities

LECTURES: On the second and fourth Fridays of each month in Public Library Hall, S.W. 10th Avenue and Yamhill Street. Watch the Oregonian and Oregon Journal for announcements. Meetings start at 8:00 p.m.

TRIPS: An average of one field trip is held each month. For questions and suggestions concerning trips call Dr. F. G. Gilchrist, BR 7375.

LUNCHEONS: Every Thursday noon at the Chamber of Commerce, 824 S.W. 5th Avenue between Yamhill and Taylor streets. Luncheon 85 cents.

LIQUID HYDROGEN OXIDE TO BE SAMPLED

Friday Aug.12 — A group of scientists and laymen are making plans to sample some unusually pure hydrogen oxide which has been located near the top of an old volcanic cone in northwestern Oregon. Scientists and laymen alike have long been interested in hydrogen oxide, since it is one of the essential components found in mineral deposits. In the liquid state hydrogen oxide is a clear, volatile, chemically neutral substance. In the solid state it forms varied crystals belonging to the hexagonal system. Hydrogen oxide crystals assume an infinite variety of forms, many of them having great beauty.

Arrangements for the tour of investigation are being handled through the Geological Society of the Oregon Country. Since the actual sampling process will require but a short time, a picnic dinner followed by a program has been planned. The time of the inspection has been set for August 12 at 6:30 p.m. The site can be reached by following the road to Mt. Tabor Park. SEE PAGE 76 FOR DETAILS OF THE INVESTIGATION.

LECTURE ANNOUNCEMENT

Friday Aug.26 — A special treat is in store for Friday, August 26, when Mr. Orrin Stanley will show some of his very excellent kodachrome slides. These will cover a variety of subjects and places of interest to all.

AUGUST FIELD TRIP

Sat.& Sun. Aug.27-28 — A 2-day trip to Centralia area in southwestern Washington. Trip to be led by Parke D. Snavely, Jr., of the U.S. Geological Survey. Call Mr. R. Erickson BE 7191 (Bus.) or Oswego 26422 (Home) for information about hotel reservations and transportation. Trip itinerary is as follows:

Saturday, August 27, 1949:

11:30 AM - 12:00 noon	Assemble at the Centralia Post Office, in the office of the U.S. Geol. Survey, for a brief review of the geology of southwest Washington.*
12:00 noon - 1:00 PM	Lunch in city park.
1:00 PM - 2:00 PM	Packwood Creek fossil locality in the Cowlitz formation.
2:00 PM - 2:45 PM	Trip to Belle Slope Mine and strip operation.
2:45 PM - 4:00 PM	Tono coal strip pit and agate locality.
4:00 PM - 5:00 PM	Visit diamond drill rig in the Thompson Creek area.

* List of publications which describe the geology of the area on page 77.

(Log continued on page 77.)

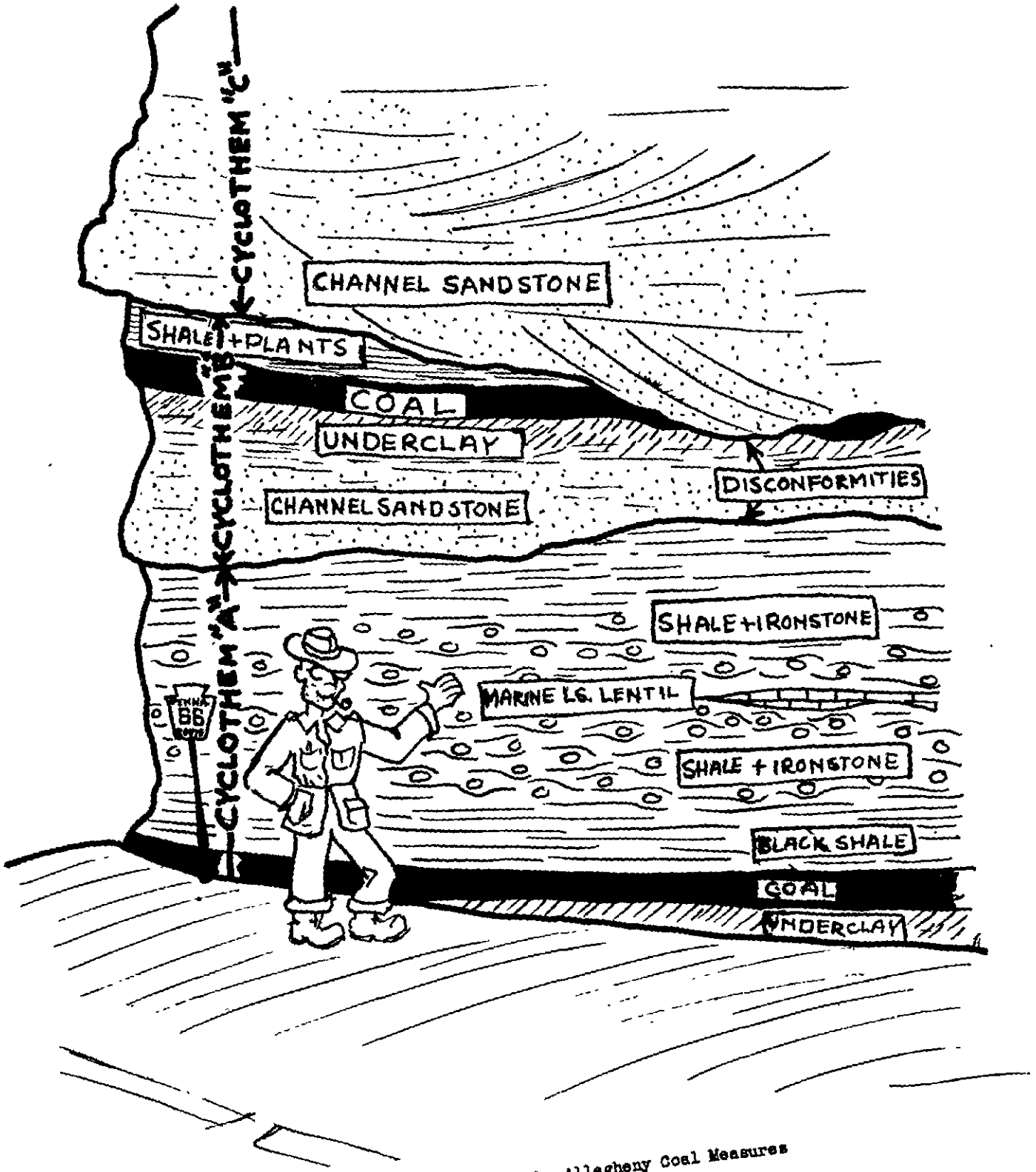


Figure 2 - Cyclothems in the Allegheny Coal Measures

PENNSYLVANIA COAL
through
WESTERN EYES

By John Eliot Allen

This is the informal saga of a 4-day caravan through the soft (bituminous) coal fields of western Pennsylvania, a trip taken and operated in typical GSOC style, comprising two station wagons, and three cars, leaving the Mineral Industries Summer Camp (located 20 miles due north of Huntington) at 8:00 o'clock sharp, Friday, July 15; and getting back in a bedraggled condition at 5:30 p.m. on the following Monday, after having driven over 500 miles.

There are twenty boys enrolled in the 8-week course (for seniors in geology) and after 6 weeks of hard work, we decided to take a breather and see how coal, the chief resource of the State, was taken out of the ground, and how the coal-bearing Carboniferous rocks appear. By letting down the tail gates to the wagons, we managed to pack all the grub and gasoline stoves and sleeping bags plus five boys in each wagon, the rest riding in the cars owned by some of the boys. Since one cannot depend on local streams for pure water, and since the weather at this time of year is so humid and warm that a water bag will not sweat, we took along 15 gallon thermos jugs.

The boys were supplied with a complete stratigraphic column of the rocks to be seen, which, abbreviated about 200 percent, is as follows:

Permian
- Greene group - 800 feet siltstone, shale, limestone.
- Washington group - 350 feet shales, sandstone, thin coals.

Pennsylvanian
- Monongahela group - 370 feet sandstone, shale, several workable coals, beds of nonmarine limestone.
- Comemaugh group - 640 feet sandstone, siltstone, red and gray shale, thin coal, limestone, clay.
- Allegheny group - 300 feet many workable coals, clay, sandstone, shale, limestone.
- Pottsville group - 200 feet largely sandstone, some shale and thin coals and clay.

Mississippian
- Mauch Chunk red shale - 200 feet.
- Greenbrier fossiliferous limestone - 30 feet.
- Loyalhanna sandy limestone - 60 feet.
- Pocono sandstone - 300 feet.

Devonian
- Catskill red beds - 2500 feet.
- Chemung shale and sandstone - 2500 feet.
- Naples group of shales - 2075 feet.
- Hamilton shale - 1200 feet.
- Marcellus black shale - 200 feet.
- Onandaga shale and limestone - 80 feet.
- Oriskany group - 240 feet.
- Helderberg group - 60 feet.

Silurian
Keyser limestone - 140 feet.
Tonoloway limestone - 650 feet.
Wills Creek shale - 500 feet.
Bloomsburg red beds - 120 feet.
McKensie shale and limestone - 350 feet.
Clinton group - 1000 feet (Rocks around Summer Camp).
Tuscarora Sandstone - 600 feet (The chief ridge-maker in Pennsylvania).

Cambrian and Ordovician rocks occur in Nittany Valley, around State College, and throughout the folded Appalachians, but were not seen in this trip, which was largely within the Allegheny Mountains and the Allegheny Plateau.

Each of the above "groups" is divided into 6 to 20 subdivisions, each coal and thin limestone bed having been given a name. We were able to recognize a few of these on the basis of fossils or peculiar associations, but for the most part a stranger had trouble telling in which group he was, unless he had the geologic atlas or quadrangle folio along with him.

But on to the trip. We started off in beautiful clear weather, but by the time we had reached Blue Knob (1)* (see fig. 1, p. 73) the second highest elevation in the State (3136 feet) the fog had closed in and we could make out the view on only one side, where the level crest-line of the Allegheny Plateau stood out blue in the northwest distance. All the straight ridges of the folded Appalachians, composed of the outcrops of the resistant Tuscarora sandstone, were hidden. We had lunch in the State Park on top of Blue Knob, where the rainfall is over 50 inches, and the vegetation is like that of the Oregon Coast Range, with bracken fern and huckleberry underbrush that made one feel quite at home. Blue Knob is a resistant part of the Allegheny Front, separated from the rest by erosion; so we had to go down a thousand feet before we could climb up to the plateau to the northwest. Climbing up a stiff grade we left the red Upper Devonian (Catskill) shales, and before reaching the crest were well into Carboniferous rocks. The plateau is a rolling upland, part of the "rolls" being due to wide gentle anticlinal and synclinal folds, since eroded of course, and part to the early mature stage of erosion of this upland surface. Much of it is under cultivation, but it is not as rich as the lower limestone valleys. The towns are nestled down in the bottoms of the valleys, and are mostly located with respect to adjacent coal operations. Some of the towns like Windber (2), are typical coal towns, with row upon row of dreary company houses, great waste piles rising above the roof tops, a constant smell of burning waste in the air, with its accompanying haze, and everything covered with soot and grime. Other towns, like Somerset (3), have no adjacent mining and are pleasant villages, not unlike some of the lateral towns along the Willamette, except that each has its town square, and nearly all the older houses are of red brick. In the region east of Somerset we visited a number of coal stripping pits, where the overburden has been dug off to depths of up to 40 feet, and the coal is mined by diesel shovel. These are now inactive since the wartime demand has slackened, and we could dig for fossils (ferns, lepidodendrons, sigillaria, calamites) to our hearts content. One of the boys found what we all thought was a trilobite, which would be extremely unusual, for so high in the Paleozoic, but it turned out to be a primitive type of horseshoe crab (Euproops danae; look it up in Shimer and Schrock, page 708, and you won't blame us for the mistake!). It began to rain during the latter part of the afternoon, and when it rains in Pennsylvania it is likely to come down in buckets, so we were unable to see all the features planned that day, and went on to a very lovely state park (Kooser Park) located a few miles west of Somerset. We rented a cabin for $4.00 and 19 boys stayed in the cabin! Yes, there were two bedrooms with double bunks (4) and two on the floor in each (4), and six on the floor in the kitchen, and five on the flagstones on the front porch. Anyway, we didn't get wet that night!

*Numbers refer to key numbers on route map (fig. 1).

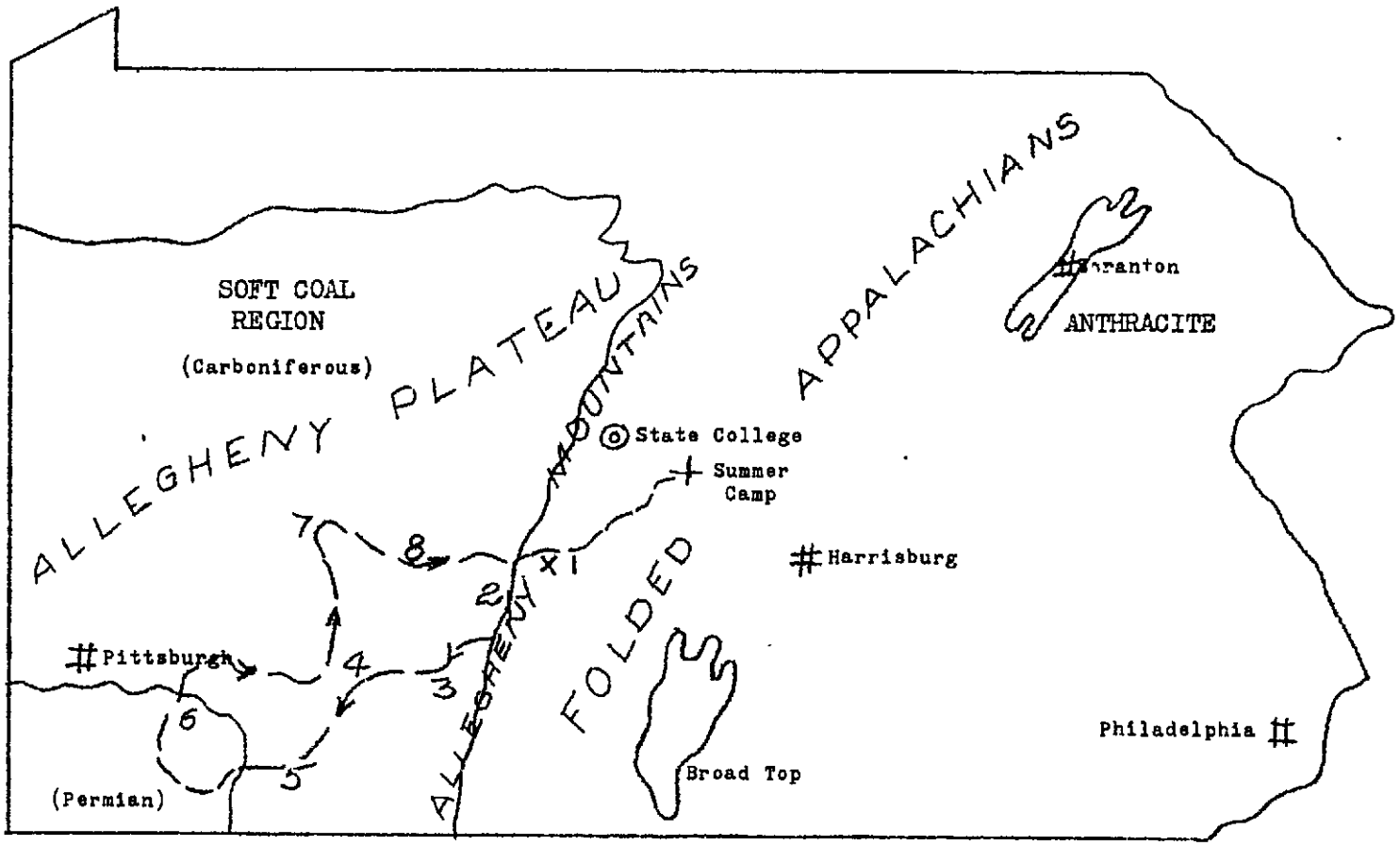


Fig. 1 - Route of the caravan.

Our first stop the next morning, after a breakfast of bacon and eggs and fried potatoes and fruit juice, was at a large quarry in the peculiar sandy (40 percent quartz) Loyalhanna limestone. The entire thickness of 60 feet is strongly cross bedded, and the rapid weathering makes the bedding stand out clearly so that good photos could be taken of surfaces that had only been quarried a year previously. It was a highway department quarry, used for road metal; no fossils. Going west from the quarry we climbed up to nearly 3000 feet, over the Laurel Hill anticline and dropped down towards Connelsville and the valley of the Youghiogheny (pronounced Yock-a-gany). This river, like the Loyalhanna and the Conemaugh to the north, cut across this and parallel gentle folds in deep gorges. They are superposed streams, which originally flowed across the Appalachian peneplain and maintained their courses when the area was uplifted; and the valleys were eroded out in the soft rocks while the ridges of hard rock maintained their elevations. We drove south along the valley to Fort Necessity, where George Washington had one of his first battles in the French and Indian War, and then climbed up and over the next anticline, Chestnut Ridge, where we stopped for lunch at a quarry in the Greenbrier limestone, loaded with many varieties of brachiopods, bryozoans, corals, crinoids, etc. In this part of the State limestones are the exception rather than the rule, as the seas of the Paleozoic were retreating and becoming less widespread.

Uniontown (5), a city of perhaps 30,000, is in a coal "basin" or syncline and is surrounded with shaft and strip mines. We bypassed it and went on south to examine the Permian rocks which come up into Pennsylvania in the extreme corner of the State. These are the only rock of Permian age east of the Mississippi River, and are a monotonous series of flaggy sandstones, many of them red beds, with shales in lesser abundance and a few coals. All are strictly continental, and contain only a few plant fossils, fresh-water fish, and extremely primitive reptiles.

Most of the mines in this area are deep shaft mines, as the coal-bearing beds lie mostly beneath the Permian (also known as the "Dunkard Series," from Dunkard Creek, which was visited).

From here we drove on down the Monongahela River towards Pittsburgh (6). It is a stream about the size of the Willamette above Oregon City, but it lies in a canyon 400-500 feet deep, in a great series of sweeping incised meanders. The cities along the river, which carries more freight tonnage on barges than the Suez and Panama canals combined, are slapped against the walls of the canyon, or built on the narrow bars on the insides of the meanders. The highway goes from one grimy town almost directly into the next, or it may climb up a 15° grade onto the upland surface to cross over to the next meander bend and drop down abruptly to the next little mining and manufacturing town. The great Pittsburgh coal seam (at the base of the Monongahela group) is exposed along the banks of the river for miles, and its 8 to 11-foot outcrops appear repeatedly in road cuts. Mines operate directly from underground, across the highways, and into barges. We went down the river as far as Donora, the town where the stifling gases from a smelter killed 36 people in one night last winter. Pittsburgh itself has almost done away with the smoke nuisance; it is a crowded town with narrow streets (like Portland), and we liked it (perhaps because it reminded us of Portland). The buildings are black, but the day we were there the skies were clear and blue.

Turning east from the river, we crossed over the rolling hills to an installation of the old-fashioned beehive coke ovens, which apparently are still in use in many places, in spite of the great waste it entails, in loss of valuable tars and gases. We camped that night in a grove of trees a few miles west of Connelsville, where we dickered for milk with a farmer and broiled T-bone steaks over our fires. It started to rain late that evening, and in spite of "water-proof" sleeping bags and tarpaulins, it was a moist crew that started out in a driving rain the next morning. It actually only let up for a few minutes all day long! We would get out to look at a good exposure in the Allegheny (the town of Kittanning (7) has a wonderful section exposed in road cuts and railroad grades) and walk along for a minute in an "Oregon mist," and then it would begin to come down cats and dogs again, and we would have to make a dive for the cars to keep from getting completely drenched.

An interesting thing about the Allegheny coal measures in this part of the State is the existence of repeated cycles of deposition, known as "cyclothems" (See fig. 2 opposite p. 71). The shallow seas apparently advanced and retreated rhythmically again and again, leaving a series of continental sediments, including coals and massive sandstone "channels"; and marine sediments, including dark shales, thin limestones and more shales. These massive river channel sands cut down disconformably into the underlying members, cutting out sometimes as much as a complete cyclothem, or even more. In addition to this feature, some of the shales and overlying sandstones are highly distorted, broken, standing on end, although both underlain and overlain by horizontal, undisturbed beds! One of the theories attempting to explain these features postulates slumping and sliding of the still relatively unconsolidated sediments into or towards the deep river channels cut in them during the stage of erosion.

To return to our caravan, we pre-empted the porch of a country store (no one there on Sunday) for our lunch in the rain, and as dusk approached we began to worry about our evening camp spot. One of the boys then casually mentioned that his dad's farm was only a few miles from our target for tomorrow, and that they had a barn half full of hay! So we headed for Spangler (8) where we laid out 20 beds in the hay while the rain came down all night.

We were scheduled to arrive at one of the large mechanized coal mines "Barnes and Tucker No. 15" at 9:00 a.m. sharp, and after a hurried breakfast we piled into the cars and drove the 5 miles or so to arrive on time. The superintendant, the engineer, and the maintenance foreman were to be our leaders, and after outfitting the entire party with hard hats and electric lamps, we piled into a train consisting of 5 coal cars, pulled by an electric locomotive, and took off down the slope. Since the portal is nearly on the crest of a very gentle anticline, we went down for nearly a mile, crouching down in the cars to avoid touching the "live" trolley wire, and bouncing up and down on the steel bottom of the cars, every one of which had at least one flat wheel. This liver-jolting trip took us three miles underground, and when we dismounted we were already a bit stiff, and unprepared for the ordeal ahead of us. Imagine a coal seam 38 inches thick. Now bend over so that you can walk, ape fashion, with your vertebra clearing the roof (most of the time!) at that height. Now walk, sidle, stumble, and finally crawl for 1500 feet along a passageway, your legs refusing to function at all every ten minutes, coal dust several inches thick on the floor (when it wasn't inches deep in water). Well, we finally did arrive at the working face of the coal, where all manner of mechanical monsters were chewing out the coal and delivering it to the endless belt which we had followed the 1500 feet from the cars to the face.

Along one passage stood the very latest fashion in coal mining - the "Mole" or automatic miner, which grinds out the coal itself and loads it without the need of cutters, drillers, or powder. This highly vaunted machine (it costs $47,000) has only been in operation for 12 months or so (the machine we saw was No. 7, and only about 35 have been built to date) and consequently there are still so many "bugs" in its operation that it only runs about half of the time. Running full time, it mines 400 tons of coal a day, with a 5-man crew; or 80 tons per man. The entire mine employs 300 men, and mines 3400 tons of coal a day (compare this with Coos Bay's maximum yearly production of only 100,000 tons!) Counting all employees, clerks, maintenance men, secretaries, etc., the mine produces about 8 tons of coal per employee per day.

Most of the actual mining was done by a team of three machines. First there was the coal cutting machine, a device with a long arm, bordered with an endless chain studded with teeth. This arm cut into the coal next the roof, and ate back a distance of nearly 5 feet, freeing the top. Then the powder man came along with an electric drill, bored long holes at the bottom of the coal, filled them with powder enough to lift and break the coal with its explosion. Then came the automatic loader, a duck-billed device with folding arms strictly after Artzybasheff, which shoved its scoop under the coal while the arms pulled the coal up and onto a moving belt, which delivered it to a long loading belt sticking out at its rear. Behind the loader was a shuttle car, about 10 feet wide and 20 feet long, rubber tired, and like all the rest of the machinery, only 30 inches high! This car nosed its way beneath the loader, and as the coal was delivered at the front end of the shuttle, it was moved back on the car by a moving belt within it. When full, the shuttle went dashing off down the passageway for several hundred feet, winding up its electric power cable as it went, and stood over the endless belt conveyor while it poured its load slowing onto the belt leading to the coal train. This series of events moved as though without guidance, the squatting workers clinging to the sides of the machines being so inconspicuous in the semidarkness.

We watched, fascinated, for nearly an hour, and then, our guides taking pity on our unaccustomed muscles (they tell us that even the miners, now that they are on a 3-day work week, get lame muscles the first day underground) we piled face down onto the loading belt, to be moved slowly and bumpily out along the belt to the waiting train. It was nearly one o'clock when we came out, and a blacker bunch was never seen. After taking a set of "after" pictures, we were accorded the privileges of the shower room, and, somewhat refreshed, took off on the 75-mile return trip to camp.

****

ANNUAL PICNIC

Picnic Chairman, May R. Dale, reports arrangements are well underway which foretell lots of good food and entertainment (in the traditional manner) at the Annual Picnic, Friday, August 12, 6:30 p.m., Mt. Tabor Park.

Pot Luck affair this year, with each group bringing one food item sufficient to serve 3 times as many people as there are in that group. If Mrs. Barr has not contacted you, please call her on TA 2459 or May Dale on CA 2123 as a list is being made of the foods promised. If you don't know what to bring, suggestions will be made.

Not only will this picnic be Pot Luck, but it will be served Cafeteria style. This makes it necessary for the food to be there early, so the food table can be arranged. We would appreciate everyone's cooperation or the food will be cold before some people are able to serve themselves. Well-wrapped hot dishes will retain their heat for quite some time. There will be more than one line to expedite service.

Coffee, cream, sugar, rolls, and butter will be provided by the Society, but please bring your own plates, cups, silverware, and napkins.

Any of the men who may find it inconvenient to bring food may contribute 50 cents to the food fund, and bring only their delightful selves, (and dishes). Mrs. Hancock or Miss Fowler will be glad to accept these contributions after the picnic dinner.

There are indications that the program to follow the dinner will be one of interest and merriment. Don't miss it - and bring your friends. Geological facts (never found in a textbook), and news items of members of the Society (that can never be learned at any other time) are discovered at annual picnics and banquets. The truth, or a reasonable distortion of the truth, will "out" at these gatherings. It's a good opportunity for getting to know your fellow Gesockers socially.

Song sheets will be passed out for community singing. Bring your flashlights - they may be useful.

We give the guidance of the events of the evening into the legal hands of our M.C. "Mr. Clarence Phillips."

Members of the General Committee are:	Mrs. Amza Barr	- TA 2459
	Bruce Schminky	- EM 3903
	Orrin E. Stanley	- TA 1250
Stunts Committee Chairman:	Mrs. R. Erickson	- Oswego 2-6422
Food and Coffee Committee Co-chairmen:	Mrs. A. W. Hancock	- SU 5285
	Miss M. E. Fowler	- MU 6385

BE SEEIN' YOU - AUGUST 12, 6:30 p.m. - COME EARLY

M.R.D.

****

NEW MEMBERS

		Zone	Phone
F. M. Fahrion	7223 N. Omaha Avenue	3	UN 4453
Mr. and Mrs. Warren H. Bell	4919 N.E. 86th Avenue	20	WE 6134

Mr. Bell is a petrographer stationed at the U.S. Government Moorings.

****

LOG OF AUGUST FIELD TRIP (cont.)

Sunday, August 28, 1949:

9:00 AM - 10:00 AM	Type section of the middle Oligocene Lincoln formation, fossil collecting. Galven, Wash.
10:00 AM - 11:00 AM	Helsing Junction, Blakely formation, fossil collecting.
11:00 AM - 12: noon	Type section of the Porter formation, Porter, Wash. Fossil collecting.
12: noon - 1:00 PM	Lunch along the Chehalis River.
1:00 PM - 1:30 PM	Tenino sandstone quarry, Tenino, Wash.
1:30 PM - 2:30 PM	Vashon glacial till and type section of the Eocene McIntosh formation.
2:30 PM - 4:00 PM	Mound prairies and glacial geology south of Tenino, Wash.

An evening program of color slides and motion pictures which deal with the geology of SW Washington will be held Saturday between 7:00 PM and 11:00 PM.

* * * * *

SUGGESTED READING FOR CENTRALIA TRIP

The following publications contain information which will be of much interest to those going on the Centralia trip. These publications may be seen at the library of the State Department of Geology and Mineral Industries, 702 Woodlark Building, or in the Technical Room, Portland Public Library. They may also be purchased (if not out of print) from:

Department of Conservation and Development
Division of Mines and Geology
Box 207, Olympia, Washington

Bretz, J. Harlen
Glaciation of the Puget Sound region: Washington Geological Survey Bulletin 8, 1913 (Out of Print)

Culver, Harold E.
General features of Washington geology (with preliminary geologic map in colors); Washington Division of Geology Bulletin 32, Part I, 1936 ($1.00)

Culver, Harold E.
The coal fields of southwestern Washington: Washington Geological Survey Bulletin 19, 1919 (75¢)

Green, Stephen H.
Coal and coal mining in Washington: Washington Division of Mines and Mining, Report of Investigations No. 4-R, 1947 (Free)

****

TRIP NOTICE

Those going on the Centralia trip may make reservations for the night of August 27 at the Lewis and Clark Hotel, Centralia. Rates are: doubles with bath $4.00; singles $3.00. Reservations may be made either directly with the hotel or through Mr. Rudolph Erickson (BE 7191).

****

OREGON AS A FIELD FOR THE STUDENT OF INVERTEBRATE PALEONTOLOGY

By

A. D. Vance*

In Oregon the Tertiary Subdivision of Geologic Time is of major importance to the student of paleontology, be he professional or amateur. The amateur paleontologist who lives in Portland is most fortunate particularly if his interest is in marine fossils. Within a short day's travel excellent specimens may be reached representing all of the divisions of the Tertiary.

In the Coos Bay area, a large variety of Eocene invertebrates may be found. To truly enjoy collecting these one should own and read the Geological Society of America special paper No. 10, "Stratigraphy and Mollusca of the Eocene of Western Oregon" by F. E. Turner.

Right here let me also suggest that it is well worth while to get out your textbook on paleontology and review the chapters on the invertebrates. It is interesting reading if one intends to be a little more than a collector.

One should not leave the Coos Bay area without visiting Fossil Point on the east side of the entrance to South Slough, and the Empire formation just north of Fossil Point. The Empire formation is Pliocene in age and Fossil Point is generally believed to be reworked Empire.

Up the coast from Newport to Astoria the collector finds a rich assortment of fine Miocene fossils which are pictured and described in Weaver's three volumes on the Paleontology of the Tertiary Marine of Oregon and Washington, a University of Washington publication.

Nearer Portland, the Oligocene period is represented in a hundred excellent collecting beds from the Nehalem river to Eugene and at least one good exposure within five miles of Portland. The Oligocene sea, which in Portland probably extended from the present coast to the foothills of the Cascades and from the Columbia River to Eugene, has left its story of the marine life of that age right at our own door. An afternoon is time enough to explore one or more of its fossil beds and be home for dinner.

When you take such a trip let me suggest that, after you have picked away in the sandy shale until you are tired, you lean back against the warm bank, close your eyes and dream a while of that time millions of years ago when the Oligocene sea was writing its story. If you are in the right mood you may see an island-dotted sea warmed by a gentle breeze as its waves lap the shore at your feet. Fleecy clouds drift overhead moving their shadowy pattern across the shallow water. It is a most pleasant picture and all the world is at peace, for you are the only human there.

---

*As this goes to press Mr. Vance is recuperating at Good Samaritan Hospital from a heart attack brought on by over-exertion. We wish him a speedy recovery.

****

MEETING AT LEWIS & CLARK COLLEGE, JULY 22, 1949

An unusual and thoroughly delightful departure from the regular type of meeting was enjoyed by a goodly number of members on Friday, July 22, at Lewis & Clark College. The beautiful campus, with its swimming pool and paths through not only well-kept lawns and flower beds but virgin woods as well, made early comers glad of an opportunity to wander about before undertaking the business of the evening. This began with a supper served picnic-style in a secluded spot; after which all repaired to the Science Building for a lucid and remarkably well-illustrated lecture on the "Development of River Valleys" by Dr. James Stauffer, Geologist on the faculty of Lewis & Clark College. Everyone within the hearing of this reporter voiced the hope that this type of meeting would be repeated.

********** H.M.H.

MEMBERSHIP LIST

As of July 20, 1949

Compiled by Miriam Shepard, Secretary

Name	Address	Zone	Telephone
#Adams, Dr. and Mrs. W. Claude	2614 N.E. Bryce	12	GA 8747
Allen, Dr. and Mrs. John Eliot	School of Mineral Industries Pennsylvania State College State College, Pa.		
Allison, Dr. and Mrs. Ira S.	2310 Harrison Street, Corvallis, Oregon		
Anderson, Mrs. Ward A.	10216 N.E. Skidmore Street	13	WE 5228
Bach, Miss Alwina	7607 N. Fowler Avenue	3	UN 1796
Baldwin, Dr. and Mrs. Ewart M.	1991 Columbia, Eugene, Oregon		
#Baldwin, Mr. and Mrs. Raymond L.	4804 S.W. Laurelwood Drive	1	
#Barr, Mrs. Amza	4830 S.E. 62nd Avenue	6	TA 2459
Bartow, Mr. and Mrs. Leslie W.	6515 S.W. Burlingame Ave.	1	AT 9884
Bates, Mr. and Mrs. E. N.	No. 19 Macondray Lane, San Francisco 11, Calif.		
#Booth, Mrs. Courtland L.	2444 S.E. Clinton Street	2	LA 1450
Bowers, Mr. and Mrs. Howard E.	1033 S.E. 84th Avenue		TA 3847
Boylan, Mrs. Bert C.	4305 S.E. Ramona St.	6	SU 2153
Brogan, Mr. and Mrs. Phil F.	1426 Harmon Blvd., Bend, Oregon		
Bryan, Mr. and Mrs. R. L.	6309 S.W. 32nd Avenue	9	CH 1058
Buck, Mr. and Mrs. Shirley	2730 McLoughlin Blvd., Milwaukie, Oregon,		2-6471
Butler, Mr. and Mrs. J. Dean	4404 S.E. Hill Road, Milwaukie, Oregon		Oak Grove 3-7967
Calef, Mr. and Mrs. M. H.	2405 N.E. 41st Avenue	13	GA 3642
Campbell, Robert M.	1700 S.E. 6th Avenue	14	EA 4633
#Carney, Mr. and Mrs. Thos. A.	7269 N.E. Thorburn Street	16	KE 8192
Chaney, Margaret E.	Route 4, Box 366, Portland	Oregon City	5884
Charlton, Dr. David B.	Post Office Box 1048	7	BR 5875
Coats, Miss Ruth Emily	702 East First Street, Tillamook, Oregon		
Cole, Mr. and Mrs. A. O.	3618 N. Montana Avenue	12	MU 0919
Conner, Mr. and Mrs. Chas O.	Rt. 3, Box 518	22	BR 9270
Crogster, Mrs. Chas.	4246 S.W. McDonnell Terrace	1	BE 1768
#Dake, Dr. and Mrs. H. C.	329 S.E. 32nd Avenue	15	EA 3473
Dale, Mrs. May R.	506 S.W. College Avenue, Apt. 6,	1	CA 2123
#Davis, Mr. and Mrs. Franklin L.	7114 S.W. Corbett Avenue	1	BE 2975
DeWitt, Mr. T. Gail	Bates, Oregon		
Elder, George V.	6922 S.E. Brooklyn Street	6	
Erickson, Mr. and Mrs. Rudolph,	Glenmorrie Park, Oswego, Oregon		Oswego 2-6422
Fahrion, F. M.	7223 N. Omaha Avenue	3	UN 4453
Fenton, Dr. and Mrs. Ralph A.	Rt. 2, Box 551, Oswego, Oregon		
Fischer, Mr. and Mrs. Virlis L.	420 N.W. Skyline Blvd.	1	
Foley, Mrs. M. J.	7 - 10th Street, Hood River, Oregon		
Fowler, Myrtice E.	6116 N.E. Cleveland	11	MU 6385
Gilchrist, Mr. and Mrs. Francis G.	304 S.W. Hamilton Street	1	BR 4227
Gooch, Ruth Gray	8637 S.E. Alder Street	16	KE 6897
Gordon, Mr. and Mrs. Ted, Sr.,	Rt. 9, Box 470, Salem, Oregon		
Gruber, Mr. and Mrs. Wm. B.	2716 N.W. Monte Vista	10	BR 6505

#Charter Members.

Name	Address	Zone	Telephone
Hamburg, Mr. and Mrs. Roy S.	1326 S.E. 14th Avenue	9	BR 4189
°#Hancock, Mr. and Mrs. A. W.	2720 S.E. 84th Avenue	16	SU 5285
Haselton, Mr. G.	1107 S.W. 20th Avenue	5	
Haven, Mr. and Mrs. Leo W.	2932 N.E. 47th Avenue	13	GA 2426
Hazelhurst, Glenn Crawford	818 N.E. Floral Place	13	MU 1042
Henderson, Mr. and Mrs. Dwight J.	838 S.E. Peacock Lane	15	EA 0814
Henley, Miss Ada	2015 S.E. Pine Street	15	EA 1475
Higgins, Mr. and Mrs. Harris	R. R. 1, Box 3, Parkdale, Oregon		2309
°#Hodge, Dr. and Mrs. Edwin T.	2915 N.W. Luray Terrace	10	BE 4821
Hopson, Dr. Ruth E.	Rt. 2, Box 111, Eugene, Oregon		
Howell, Mr. and Mrs. Paul W.	Rt. 2, Box 456, Portland	10	
Hughes, Miss Mary Margaret	1524 S.W. 10th Avenue	1	BR 8849
Jennings, Rose H.	2841 N.E. Sandy		MU 2024
#Jennison, H. L.	1561 S.E. Linn Street	2	LA 5594
#Johnson, Mr. and Mrs. E. C.	12311 S.E. Stark Street	16	KE 1024
Johnson, Mr. and Mrs. Robert C.	6910 N.E. 22nd Avenue	11	WE 3754
#Jones, Dr. and Mrs. Arthur C.	3300 S.W. Heather Lane	1	BE 3955
Jones, Dr. and Mrs. Lester T.	3149 S.W. Fairview Blvd.	1	BE 2063
Kellmer, Mr. and Mrs. Earl B.	6105 N.E. Rodney	11	MU 6002
Kennedy, Mr. and Mrs. Claire A.	2938 S.E. Boyd Street, Milwaukie, Oregon		
#Kimbrell, Mr. and Mrs. Geary	2522 N.E. 57th Avenue	13	GA 9995
Klatt, Joseph F.	7315 S.E. 52nd Avenue	6	SU 4696
#Kurtichanof, Mr. and Mrs. L. E.	8014 S.E. 35th Avenue	2	SU 5416
Lange, Mrs. Nellie V.	1534 S.E. 56th Avenue	15	TA 2288
Latourette, Kenneth Scott	409 Prospect Street, New Haven, Conn. (11)		
Lawrence, Dr. and Mrs. Donald B.	2420 - 34th Avenue, So., Minneapolis, Minn. (6)		
Leonards, Laurie	309 S.E. Union Avenue		LA 3639
Libbey, Mr. and Mrs. F. W.	2259 N.W. Everett Street	10	BR 2145
Lindeman, Mr. and Mrs. B. J.	1110 Washington St., Oregon City, Oregon		
McCoy, Miss Sallie E.	3511 S.E. Alder Street	15	EA 2023
#Mackenzie, Mr. and Mrs. Ray E.	1504 S.E. Oxford Land	22	EM 7892
Macnab, James A.	2703 Hemlock Street, Longview, Washington		
Marshall, Miss Emily	3471 S.W. Patton Road	1	BE 6720
Mattern, Dr. and Mrs. Alfred E.	2214 N.E. 39th Avenue	13	GA 0511
Matthews, Mr. and Mrs. Thomas C.	4014 N.E. Flanders Street	15	EM 6759
Neikirk, Miss Jessie	5231 S.E. Lincoln Street	15	LA 8961
Nelson, Miss Clara A.	9529 N. Edison Street	3	UN 0869
Nelson, Mrs. Coralie S.	Maplewood, Oregon	AT 0123, ext. 408	
#Norton, Mr. and Mrs. Russell R.	Box 364, Seward, Alaska		
Oakes, Mr. Alva	218 N.W. Flanders Street	9	BE 5435
#Oberson, Mr. and Mrs. Louis E.	3569 N.E. Stanton Street	13	WE 3685
Palmer, Mr. and Mrs. Thos. E.	1640 S.W. Sunset Blvd.	1	BR 3077
#Phillips, Mr. and Mrs. Clarence D.	7630 S.E. 30th Avenue	2	SU 5655
#Phillips, Mr. and Mrs. Kenneth N.	2213 S.E. 52nd Avenue	15	SU 0029
#Poppleton, Miss Grace M.	Route 2, Oswego, Oregon		CI 7222
#Poppleton, Mrs. R. R.	Route 2, Oswego, Oregon		CI 7222
Pruett, Miss Jeanne	3203 S.E. Gladstone	2	
Quigley, Mrs. Blanche	2642 S.E. Tibbetts Street		EA 8442

°Honorary life members.

Name	Address	Zone	Telephone
#Reichen, Mr. and Mrs. Sam	Kimberly, Oregon		
#Reimers, Mr. and Mrs. Fred	6535 S.E. Clinton Street	6	SU 9188
Rice, Mr. and Mrs. Richard L.	535 E. Oak Street, Hillsboro, Oregon		
#Richards, Mr. and Mrs. Carl P.	530 N. 19th Street, Salem, Oregon		
Rosa, Miss L. Kate	807 S.W. 14th Avenue	5	BE 0297
Ruff, Mr. and Mrs. Lloyd L.	3105 N.E. 45th Avenue	13	BR 0621
#Rydell, Mr. L. E.	Box 1020, Walla Walla, Washington		
Sandoz, Mr. and Mrs. Marcel F.	Rt. 1, Madras, Oregon		
Schmidt, Mr. and Mrs. Arthur W.	9945 N.E. Shaver Street	20	LI 2797
#Schminky, Mr. and Mrs. H. Bruce	1030 S.E. 54th Avenue	15	LA 3903
Schumacher, Mr. and Mrs. Rolf A.	3927 N.E. Mallory Avenue		GA 9481
Shepard, Miss Miriam	Box 164, Route 2	10	UN 2506
#Simon, Mr. and Mrs. Leo F.	7006 S.E. 21st Avenue	2	LA 0549
Simon, Miss Lotus	936 W. Johnson, Madison, Wisconsin		
Smith, Almeda	Rt. 2, Box 163, Oswego, Oregon	OSwego	7802
#Smith, Mr. and Mrs. Ben F.	1350 S.E. Flavel Street	2	EA 1565
#Smith, Dr. Warren D.	1941 University Street, Eugene, Oregon		
Stanley, Orrin E.	2601 S.E. 49th Avenue	6	TA 1250
Stauffer, James	Box 152, Tualatin, Oregon		
Steere, Miss Margaret L.	6205 S.E. Scott Drive	16	EM 6817
Sterrett, Chester K.	3328 S.E. Knapp Street	2	SU 2114
Stevens, Miss Eliza	Bonneville, Oregon		
#Stevens, Dr. and Mrs. J. C.	434 N.E. Royal Court	15	EA 9333
Stiff, Pearlita C.	5802 N.E. Glisan Street	13	LA 0509
Stoddard, Mrs. Dorothy D.	1559 N.E. 66th Avenue, Apt. C.,	13	GA 0302
Stone, Mr. and Mrs. Norris B.	Route 1, Box 179-A, Oswego, Oregon,	Oswego	6531
Strong, Mrs. F. H.	2755 N.E. 51st Avenue	13	AT 0191
Sunderland, Mrs. E. M.	4125 S.E. Oak Street	15	EA 9821
#Teeters, Miss Glenna	3107 N.E. 32nd Avenue	12	GA 6205
Thompson, Ethel L.	Apt. 43, 1505 S.W. 14th Avenue	1	
Travis, Mr. and Mrs. H. F.	7225 S.W. Corbett Avenue	1	AT 1445
Treasher, Mr. and Mrs. Ray C.	3932 - 12th Avenue, Sacramento	17,	California
Triol, Miss Ella	Route 1, Box 23, Scappoose, Oregon		
#Underwood, Dr. Herbert L.	5226 S. W. Menefee Drive	1	BR 4692
#Vance, Mr. and Mrs. A. D.	5516 N. E. Rodney Avenue	11	MU 5204
#Wade, Mr. and Mrs. Tracy	3326 N.E. 25th Avenue	12	TR 6060
Warner, Mrs. Clara M.	168 N.E. Lombard Street	11	
Weber, Dr. and Mrs. D. E.	8005 S.E. Morrison	16	TA 1965
Weinzirl, Dr. and Mrs. Adolph	3536 N.E. 27th Avenue	12	GA 5706
Wheeler, Miss Althea	Cascade Locks, Oregon		
Wheeler, Mr. and Mrs. Chester A.	2944 N. E. 47th Avenue	13	GA 8243
White, Miss Nella C.	415 N.E. Laurelhurst Place	15	EA 8384
Wilson, Mr. and Mrs. Ford E.	3573 N.W. 35th Avenue	10	
#Woodard, Mr. and Mrs. E. Clyde	107 N.E. 192 Avenue	16	Gresham 3246
Yeager, Mr. and Mrs. M. C.	4206 S.W. Sunset Road	1	BE 7752
Zimmer, Miss Ruby M.	805 S. E. 60th Avenue	15	LA 8319

Name	Address	Zone	Telephone
JUNIOR MEMBERS			
Campbell, Donald R.	2505 N. Emerson	11	WE 0573
Laird, Fred B.	649 S.W. Moss Street		GA 8395
Smith, Richard D.	Star Route West, Tillamook, Oregon		
Waack, Carol	404 N. Alberta		MU 6607

* * * * *

NEWS LETTER SUBSCRIBERS

Blair, J. M.	Box 2555, Boise, Idaho
California Institute of Technology	1201 E. California Street, Pasadena 4, Calif.
Cleghorn, J. C.	219 High Street, Klamath Falls, Oregon
New York Public Library, Reference Department	476 Fifth Avenue, New York 18, N.Y.

* * * * *

Summary

Honorary Members	2
Fellow	1
Charter Members	35
Junior Members	4
Other Members	99
Total	141

****

NEWS OF MEMBERS

Saturday, July 9, was a great day scholastically speaking for two of our members -- Leo F. Simon and A. W. Hancock. Both also being members of the Agate and Mineral Society, they represented Portland on radio station KXL on the "Thousand Mile Quiz" -- a radio program participated in by all the "XL" stations (Oregon, Washington, Idaho, and Montana). All teams for this particular broadcast were made up of mineralogists, although questions were exclusively on history and geography - not one on mineralogy. Thanks to their superior knowledge, Portland came out first in the quiz -- a real advancement over last year, when Portland ranked fourth.

Can you answer the one question which stumped our "Quiz Kids"? Here it is: What percentage of Oregon's population is represented by farmers -- 20%, 30%, or 40%? (Correct answer "20%")

****

GEOLOGICAL NEWS LETTER

OFFICIAL PUBLICATION OF THE

VOL. 15 NO. 9 PORTLAND, OREGON September 1949

GEOLOGICAL NEWS-LETTER
Official Publication of the
Geological Society of the Oregon Country
421 Morgan Bldg. Portland, Oregon
POSTMASTER: Return Postage Guaranteed

THE GEOLOGICAL NEWS LETTER
Official publication of the
GEOLOGICAL SOCIETY OF THE OREGON COUNTRY

****

Executive Board of the Society
Officers - 1949-1950

			Zone	Phone
President:	Leo F. Simon	7006 S.E. 21st Avenue	2	LA 0549
Vice Pres.:	F. L. Davis	7114 S.W. Corbett Street	1	CI 8975
Secretary:	Miriam R. Shepard	Box 164, Route 2	10	AT 7141
Treasurer:	Norris B. Stone	Rt. 1, Box 179-A, Oswego,		Oswego 6531

Directors

Dr. Arthur C. Jones (1950)
Mrs. Mildred P. James (1950)
Chester A. Wheeler (1951)
F. W. Libbey (1951)
Mrs. Leslie W. Bartow (1952)

****

Staff of Geological NEWS LETTER

Editor:	Mrs. Leo W. Haven	2932 N.E. 47th Avenue	13	GA 2426
Asst. Editor:	Margaret L. Steere	6205 S.E. Scott Drive	16	BR 2276
Assoc. Editors:	Lloyd L. Ruff, A. D. Vance, H. B. Schminky, Kenneth N. Phillips, F. W. Libbey, O. E. Stanley			
Business Manager:	Chester A. Wheeler, 2944 N.E. 47th Avenue		13	GA 8243

****

MEMBERSHIP APPLICATION
GEOLOGICAL SOCIETY OF THE OREGON COUNTRY

Qualifications and dues:

Applicant must be sponsored by a member and recommended by the Membership Committee. A knowledge of geology is not a requisite. There is no initiation fee. A Member shall be over 21 years of age; a junior member between 18 and 21. A single membership may be held by husband and wife and their children who are under 18 years of age. The dues are $3.50 per year ($1.50 for Junior members), payable in advance, and include one subscription to the Geological NEWS LETTER. Dues of members living in counties not adjacent to Multnomah County are $2.50 per year.

Date _____

I, _____ (please print full name) do hereby apply for membership (junior membership) in the Geological Society of the Oregon Country, subject to the provisions of the By-Laws.

Home address . . . . . .Phone . . . . . .

Business address . . . . . .Phone . . . . . .

Occupation . . . . . Hobbies . . . . . .

I am particularly interested in the following branches of geology: _____

_____ I enclose $_____
for the year's dues, March 1 to March 1. (Checks payable to the Society)

Sponsored by _____
(member)

_____
(signature)

Society Activities

LECTURES: On the second and fourth Fridays of each month in Public Library Hall, S.W. 10th Ave. and Yamhill St. Watch the Oregonian and Oregon Journal for announcements. Meetings start at 8:00 p.m.

TRIPS: An average of one field trip is held each month. For questions and suggestions concerning trips call Dr. F. G. Gilchrist, BR 7375.

LUNCHEONS: Every Thursday noon at the Chamber of Commerce, 824 S.W. 5th Avenue between Yamhill and Taylor streets. Luncheon 85 cents.

LECTURE ANNOUNCEMENTS

Friday Sept.9 — "Rock Textures and Structures." Lecture by Arthur W. Schmidt, Geologist of the North Pacific Division Laboratory, Corps of Engineers. The talk will be illustrated by large thin sections of rock prepared by Mr. Schmidt and projected onto the screen. This is an outstanding event that members of the Society will not want to miss.

Friday Sept.23 — To be announced at meetings and in local newspapers.

FIELD TRIP ANNOUNCEMENT

Sunday Sept.18 — There will be a field trip to the Sweet Home, Oregon, area on September 18. The trip will be lead by H. E. Richardson, recently graduated from the University of Oregon, who has written a thesis on the "Petrified Forest" of the Sweet Home area.

Itinerary of the trip as outlined by Mr. Richardson is as follows:

10:00 Assemble at the Sweet Home High School.

10:30 Upper Calapooya road from the Holley P.O. to Petrified Trees.

12:00 Lunch at Sweet Home City Park.

1:30 Hunting up a little winter cutting material.

3:00 Keeney - Thompson fossil leaf locality along the Oregon Electric Railway.

Mr. Richardson suggests that the members refresh their geographical knowledge of the area by reference to:

Lowry, Wallace D., "The extent of the Oligocene sea in northwestern Oregon," Geological News Letter, vol. 13, no. 1, 1947.

Vokes, Harold E. and Snavely, Parke D., Jr., "The age and relationship of the Eugene and Fisher formations," Geological News Latter, vol.14,no.5,1948.

Contact R. Erickson of the Field Trip Committee if transportation is desired.

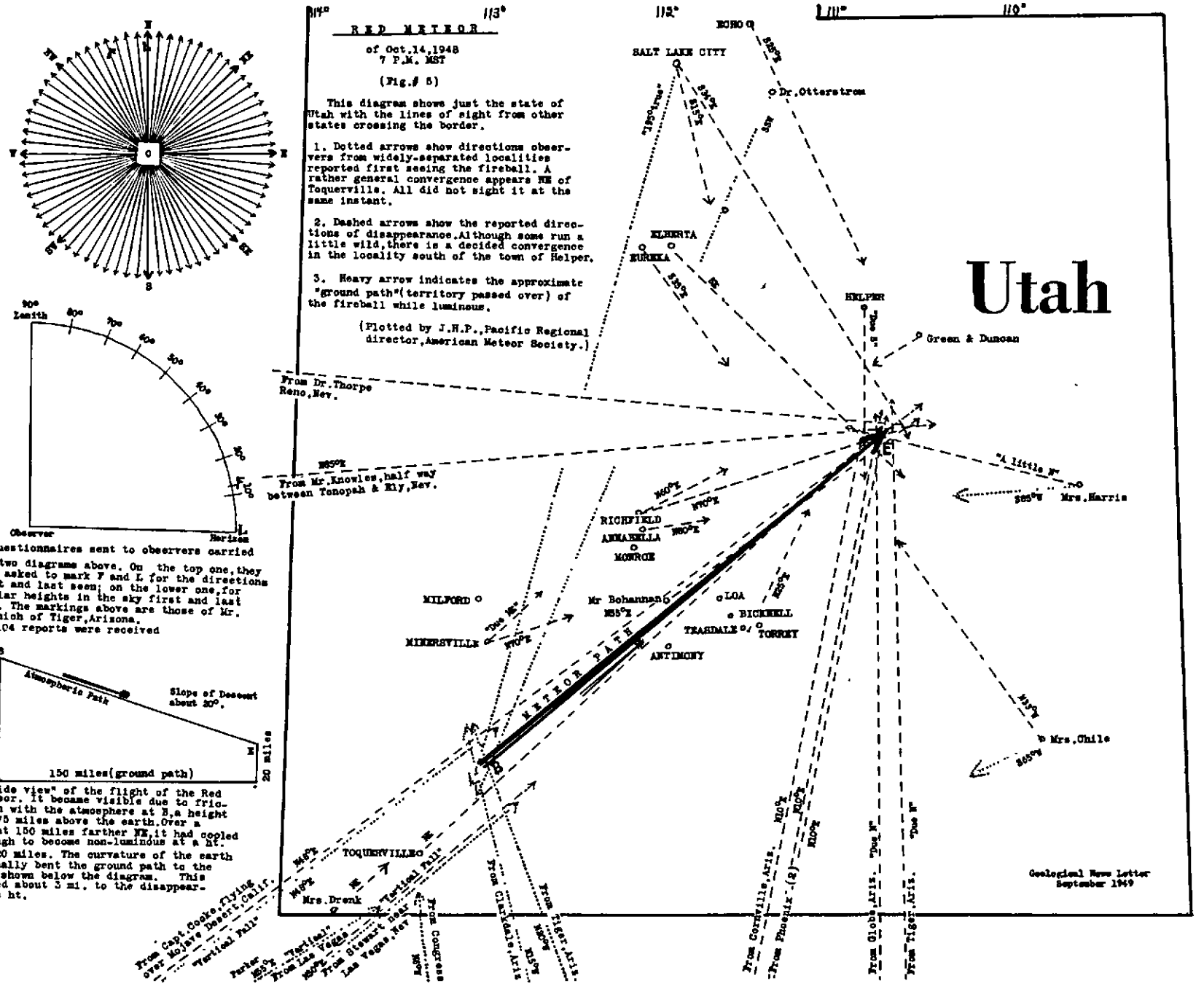
****

NEWS OF MEMBERS

Change of address: Miss Rose Jennings, 1984 S.W.6th Ave., Zone 1, AT 0890.

Paul Howell transferred: Our fellow member Paul Howell is now associate geologist with the Corps of Engineers and has been transferred from the district office at Portland to the position of resident geologist at the Meridian Dam Project on the Middle Fork of the Willamette River near Lowell, Oregon.

****


RED METEOR
of Oct.14,1948
7 P.M. MST
(Fig.# 5)
This diagram shows just the state of Utah with the lines of sight from other states crossing the border.
1. Dotted arrows show directions observers from widely-separated localities reported first seeing the fireball. A rather general convergence appears NE of Toquerville. All did not sight it at the same instant.
2. Dashed arrows show the reported directions of disappearance. Although some run a little wild, there is a decided convergence in the locality south of the town of Helper.
3. Heavy arrow indicates the approximate "ground path" (territory passed over) of the fireball while luminous.
(Plotted by J.N.P., Pacific Regional director, American Meteor Society.)
Utah
SALT LAKE CITY
ECHO
Dr. Otterstrom
ELBERTA
EUREKA
HELPER
Green & Duncan
From Dr. Thorpe Reno, Nev.
From Mr. Knowles, half way between Tonopah & Ely, Nev.
"A little N"
Mrs. Harris
RICHFIELD
ANNABELLA
MONROE
MILFORD
Mr Bohannan
LOA
BICKNELL
TORREY
TEASDALE
MINERSVILLE
ANTIMONY
METEOR PATH
Mrs. Chile
TOQUERVILLE
Mrs. Drenk
"Vertical Fair"
From Capt. Cooke, flying over Mojave Desert, Calif.
Parker
From Las Vegas
From Stewart near Las Vegas, Nev
From Congress
From Clarkdale, Ariz.
From Tiger, Ariz.
From Cornville, Ariz.
From Phoenix, (2)
From Globe, Ariz.
From Tiger, Ariz.
Geological News Letter September 1949
Zenith
Observer
Horizon
Questionnaires sent to observers carried the two diagrams above. On the top one, they were asked to mark F and L for the directions first and last seen; on the lower one, for angular heights in the sky first and last seen. The markings above are those of Mr. Supanich of Tiger, Arizona.
104 reports were received
Atmospheric Path
Slope of Descent about 20°.
75 miles
20 miles
150 miles (ground path)
"Side view" of the flight of the Red Meteor. It became visible due to friction with the atmosphere at B, a height of 75 miles above the earth. Over a point 150 miles farther NE, it had cooled enough to become non-luminous at a ht. of 20 miles. The curvature of the earth actually bent the ground path to the dot shown below the diagram. This added about 3 mi. to the disappearance ht.

FIREBALL TRACING AS ILLUSTRATED BY WORK ON THE RED METEOR OF OCTOBER 14, 1948*

By
J. Hugh Pruett
Pacific Regional Director, American Meteor Society

During the evening of October 14, 1948, and the following day, the radio newscasters were making a great deal of a huge ball of fire which at about 6 p.m. Pacific Standard Time had blazed in blinding brilliance across the heavens, and had been observed from several western states. According to various accounts it had fallen to the ground near observers in many localities in California, Nevada, Arizona, and Utah. Later reports indicated it had also landed at a few places in Oregon, Idaho, and Colorado.

The present writer, who since 1932 has been chasing meteors along the Pacific Coast, was unable to decide from the reports whether this dazzling celestial projectile had while luminous traveled over his territory or over that of Dr. Lincoln La Paz of the University of New Mexico. The president of the American Meteor Society, Dr. Charles P. Olivier of the University of Pennsylvania, appoints regional directors in various parts of the country to carry out this type of work. Dr. La Paz handles the fireballs over his designated territory of Arizona, New Mexico, Utah, and Colorado; the writer, over Idaho, Washington, Oregon, Nevada, and California.

It seemed quite possible that this spectacular and news-provoking object had actually passed over parts of both "meteoric bailiwicks." After a delay of nearly a month, I wrote to Dr. La Paz. I asked if he was working on the meteor and offered to send him any reports which might come from my states. He replied promptly by airmail that he had not undertaken the task because of the press of other matters and would appreciate it if I would see what I could do with it. Well aware of the grueling work involved and fearing that the month's delay might handicap our efforts, I decided at first to do nothing with it. The following day, however, I relented and started the preliminary procedure necessary in such work: that of asking help from a few large newspapers in the general region reporting observations.

Letters explaining fully the importance of the work to meteorite astronomy, and asking that they request their readers who were observers of the phenomenon to write to me, were sent to the Los Angeles Times, San Francisco Chronicle, Reno Gazette, Phoenix Republic, Salt Lake Tribune, and Denver Post. Included in each letter was a photostat of Dr. Olivier's letter of appointment, mentioning that I had certain territory and requesting that all papers cooperate in the collection of data. The press cooperated splendidly, and soon letters were arriving. By the time the letter procession ended, 104 persons had reported from seven states. A few were from those who, although they tried hard to be helpful, had observed smaller meteors the same evening. This number is about the average that usually report on a big fireball. It is far short, however, of the 517 who sent letters and postals on the Twilight Meteor of 5 p.m., November 29, 1945, over California and Nevada. The majority of these were due to the splendid efforts of Dr. Earle G. Linsley of Oakland, Mr. John D. Buddhue of Pasadena and Prof. G. Bruce Blair of Reno, all of whom are assistant directors in the Pacific meteoric network. In the case of the more recent Red Meteor, many more reports would doubtless have been received had requests been sent out at once while the observers were still excited. The number obtained was, however, quite sufficient for good work.

---

*Presented before the Western Convention of Amateur Astronomers at Los Angeles, August 22-24, 1949.

In tracing the path of a fireball, the data most desired are the directions from the observer and the angular heights in the sky of both the beginning and ending of the luminous phase of the flight. It was long ago learned that the initial requests in the press for these data are of little avail. This is not said in criticism of the many who report, for these have practically never before had any experience with big meteors - one is said to be an experience of a lifetime - and give what seems to them to be the most important facts. We are fortunate that any take enough interest to write at all.

To all excepting a few observers the entire phenomenon of a meteoric flight is a distinctly local affair with the final burst occurring not over a very few miles away or striking the top of a hill even nearer. In such cases, "things are not what they seem" - and most definitely. In connection with the 1945 Twilight Meteor, I received letters from all over California and many parts of Nevada offering to "walk me" just about to the place where it fell. Had all of these invitations been accepted, I would still be perambulating. Data were obviously withheld on the 1948 Red Meteor by three observers in as many states since they were sure they knew where unburned fragments could be recovered, and they were determined not to let anyone else in on the "find."

After receiving "first reports" from those who witnessed one of these fiery flights, the next step is to send questionnaires to some of the writers, usually 20 to 40 percent, who seem from their letters to have helpful data and the ability to impart it. Bulletin 16, the official American Meteor Society blank, works well if it goes to a civil engineer, a forest ranger, or anyone else accustomed to the use of angular measurements. But, despite the fact that the blank carries full printed instructions, I usually fail to get very much helpful information from it when sent to others. For the specific directions of appearance and disappearance they are apt to say "west" and "south"; and for angular heights "2000 feet" and "500 feet." I have long since quit sending out the blanks without their being accompanied by personal letters and stamped, addressed envelopes for reply. This assures the return of about 80 percent of them.

It is freely admitted that the finest results are obtained by those who travel over wide stretches of country, interview personally the observers in various places, and measure the angles of azimuth and altitude as they are pointed out. I am convinced, however, that very valuable information can be obtained by the "correspondence method" provided the tracer is willing to work hard enough - and this means extremely hard work in some cases. Sometimes from two to four letters have to be written to one observer before the desired data are obtained. I sometimes send out cheap compasses for azimuth measurements and simple clinometers for altitudes. These seldom fail to come back. In many cases where the observer seems to have valuable data but does not write well, these instruments are sent to a high school principal with the request that he get some qualified person on his faculty to get interviews and measurements. The response from these teachers is usually prompt and practically 100 percent. They get the measurements as well as I could - and with far less work. In some cases the observer is a transit user, or persuades a friend who is to measure angles for him.

My general conclusion from the tests made on various persons is that very poor results on heights in miles or kilometers will be obtained if we use estimated angular altitudes of the observers. Over 90 percent of those tested estimated too high, and most of them considerably too high. I have "calibrated" my own estimates, but would have no idea about an observer of whom I had never heard before, except to suspect he had gone too high. Measurements with altitude instruments seem advisable from several localities.

Now to the tracing of the Red Meteor. As in the work on all fireballs, the disappearance directions agree better than those of appearance. This would be true even if reported exactly, for some would not sight the object as soon as did others. Once seen, however, he would be a most indifferent witness who would lose interest and take his eyes off the celestial visitor before the luminous flight was ended.

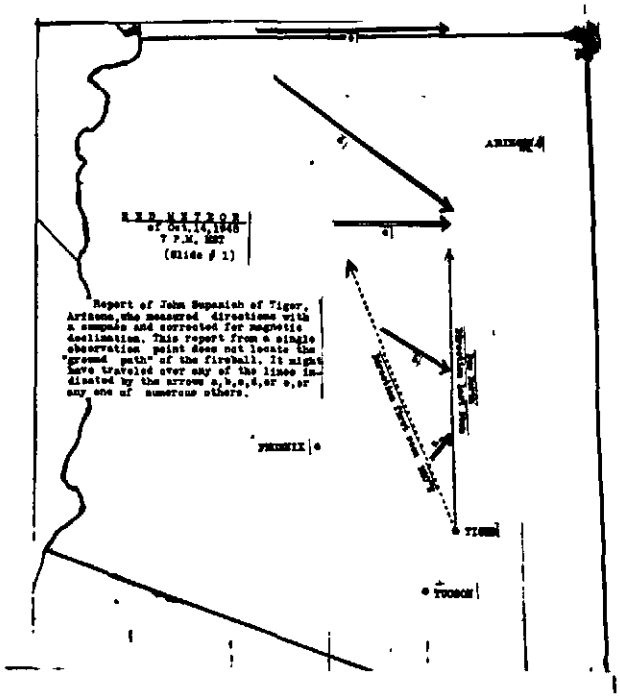
In drawing azimuth lines on meteor maps most tracers use dotted lines for the direction of appearance and solid lines for disappearance. During the past 17 years I have used them in just the opposite way, but I am now "almost conforming" and for the first time use them in this paper nearly in the orthodox way. The only nonconformity is that I break the solid lines of disappearance into dashed lines.

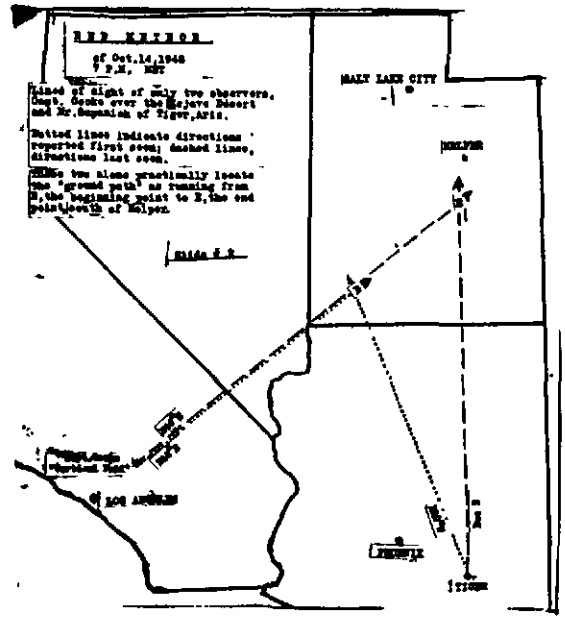
One of the first reports on the Red Meteor was from John Supanich of Tiger, Arizona, who gave compass readings for both the directions of appearance and disappearance. At first it was not certain whether he had made corrections for magnetic declination, but further correspondence showed that he was familiar with the use of the compass and had made the needed 14° adjustment so that his figures were based on geographic north rather than magnetic. (Slide #1, page 88) Mr. Supanich determined that he first sighted the fireball N20°W and that it disappeared about on the horizon at due north. But as carefully as these measurements may have been made, they do not give us any idea as to where the meteor was. It might have passed over the territory indicated by the arrow a, or equally as well over b, c, d, or e, or any one of thousands of other possible paths between the dotted and dashed azimuth lines. We do see, however, that it had an easterly direction as observed from Tiger.

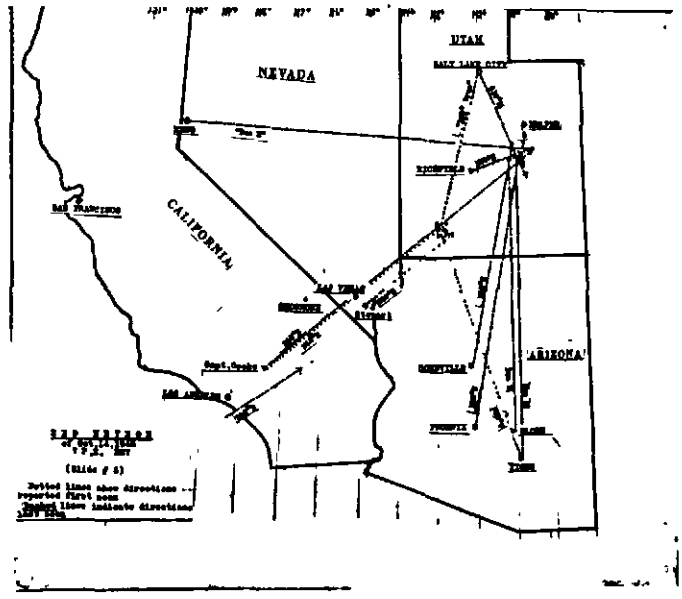
But a solution comes almost suddenly as soon as we plot the azimuths furnished by Capt. T. H. Cooke, who at the time of the meteoric dash through the atmosphere was flying in a general easterly direction over the Mojave Desert in California. (Slide #2) Capt. Cooke reported his latitude and longitude and said that the meteor fell vertically in a direction N48°E. This told more than the report from Tiger in that it furnished the line of flight but not the distance from the observer. But the Supanich and Cooke azimuths plotted on the same map - and both reports seemed to be quite carefully worked up - bring order out of confusion. We find the dotted appearance lines cross at the point B (beginning), and the dashed disappearance lines cross at E (ending). The ground path, the projection on the earth of the air path, then was approximately from B to E.

Without other reports, these two alone show that those who expected to find remnants in California might as well give up hope. The flight was evidently entirely over Utah. Many other reports confirmed the accuracy of these. (Slide #3) The disappearance azimuth lines in general converge on a rather small region approximately 125 miles south southeast of Salt Lake City. The luminous phase of the flight ended somewhere in this locality. Unburned fragments may have continued on for many miles in the same line of flight, but as dark bodies. The beginning point is not so definitely located but there seems little doubt that B is not far from it.

Since the flight was entirely over Utah (Slide #5, page 84) we show here just that State with the azimuth lines from other states coming over the boundary lines. This gives more lines than on the previous slide and in "magnified" form. Finally we draw in the ground path as a heavy arrow. This appeared early this year in the Salt Lake Tribune together with a descriptive article.


PHOENIX
TUCSON


SALT LAKE CITY
HELPER
PHOENIX


NEVADA
UTAH
CALIFORNIA
ARIZONA

The more difficult task lay in determining the heights at which the fireball appeared and disappeared. Some who observed at home furnished angles of altitude which seemed quite dependable. Mrs. Ruth Vause of Salt Lake City was at dinner and saw the final stage through a window. A clinometer with full instructions for using it was sent to her. The general tone of her letter indicated her to be quite able and likely to give excellent data. A great deal of weight was given to the report prepared by her and Mr. Vause. This report combined with several others indicated (after corrections were made for the curvature of the earth) that the Red Meteor became visible due to friction with the atmosphere at a height of approximately 75 miles, traveled downward at a moderate slope, and after a few seconds finally disappeared over the indicated locality south of the town of Helper. Two distinct explosions seemed to have taken place during the flight.

Some of the statements of observers regarding the fireball will be of interest. About 80 percent who mentioned color at all said it was red. A few others assigned an orange tinge to it. As to size, the majority reported it seemed somewhere between half and fully as large as a full moon. Others said, "A basket ball," "A cannon ball," and "A #3 washtub." One, without mentioning the size, wrote, "While riding in the car I realized the ground had lighted up brilliantly. I got my head out and found a fireball was being discharged."

Other Utah reports: "Sky glowed brilliantly." "Shadows of telephone poles were very distinct." (Salt Lake City) "Lighted town with red light." (Helper) "Lighted whole sky." (Richfield) "Looked like a blazing broom." (Lehi) "Glowing trail lasted 40 seconds." (Neola) "Nearly scared me to death." (Monroe)

No sound was heard by those observing from a great distance, but many near and on both sides of the ground path reported a great deal of disturbance. Here are a few quotations: "Windows rattled and alarmed people." (Bicknell) "Rumbling sound of short duration heard." (Richfield) "Sound came 1½ minutes after meteor disappeared. It was like underground thunder." (Antimony) "A distinct earthquake shock came a few minutes after meteor disappeared." (Richfield) "Windows shook five minutes later." (Monroe) "Explosion like gasoline." (Minersville) "Children saw fireball while out of doors. After they got inside, house shook." (Loa) "Milking cow when meteor passed over. Three to five minutes later heard a loud explosion like a clap of thunder." (Annabella) "Going to neighbors when meteor lighted up sky. Soon after I got inside there was a loud blast like giant powder." (Torrey)

Some time after the tracing was completed, Dr. La Paz reported that he had done some work on attempting to find meteorites but that he had run into extremely severe weather and had had to give it up temporarily. If anything has to date been recovered, I have not heard of it.

****

EWART M. BALDWIN LEAVES ON FOREIGN ASSIGNMENT

We had hoped to publish an article by Dr. Ewart M. Baldwin this month. The following excerpt from a letter written by him in late July explains why the promised article failed to materialize.

> "Am leaving on August 11 with an E.C.A. party to work on the coal deposits of southern Korea. This is a part of the Marshall Plan type of aid, and the work is under the direction of the U.S. Geological Survey. Perhaps I will run into something worth publishing - although any details of the work itself could not be released."

Good luck, Dr. Baldwin. Here's hoping your new duties will permit our hearing from you occasionally, as any details - no matter how small - will be of intense interest to us here at home.

H.M.H.

****

CONSERVATION AND DEVELOPMENT OF OUR NATURAL RESOURCES*

By
Warren D. Smith

Some people have the notion that conservation means the hoarding of something while others in the early days of the movement for conservation referred sneeringly to it as "conversation" because the advocates of it spent much time in talk.

My idea of conservation is the wise use of our resources which includes their development as well.

At the present time with nearly three billion people in the world and the amount of arable land about all taken up, and with the terrific draft on our irreplaceable minerals, this subject has become of first importance to the human race; unless, of course, we blow ourselves off the map, in which case we shall not need to bother about this or any other of the many problems before us now. Need I do more than cite just three examples to make my point, Palestine, where we see too many people trying to live in a poor land; Southern California, where there is a serious water deficiency; and the threatened shortage of oil?

I have before me a book entitled, "The Conservation of Natural Resources in the United States," by the late Charles R. Van Hise, one time President of the University of Wisconsin and noted geologist. Van Hise was the first to publish a comprehensive treatment of this subject, and was one of the technical advisers to the then Governor of Wisconsin at the Conference of Governors called to the White House, May 13-18, 1908, by President Theodore Roosevelt. Gov. Pinchot of Pennsylvania was one of those most prominently identified with this movement. Pinchot had been chief forester of the United States before becoming governor. As I was a student of Van Hise and took his course in conservation I was early indoctrinated with his advanced ideas in this field.

Van Hise, as a resident and geologist, had had ample opportunity to see the devastating raids of the timber barons in Wisconsin and became an ardent supporter of the new movement. In an earlier radio talk I have discussed this subject in connection with our own forests; therefore, I shall not spend much time on this aspect now. However, I do want to commend the efforts of all those who are active in the utilization of wood waste, and mention particularly the promotion of the alcohol plant at Springfield.

In this connection, mention should be made of the possibilities of using industrial alcohol as a substitute for petroleum. Some years ago, Dr. H. I. Cole, formerly on the chemistry staff at the University of Oregon, and I made a trip of over 150 miles in the Philippines in a Buick car using alcohol which had been enriched with a little ether. No change in the carburetor was necessary and the car ran as smoothly as if it had gasoline. I do not recall the cost, but think that there was little difference. Here is one instance I know of where it was not dangerous to have alcohol aboard your car when driving. The point is, the alcohol must be in the engine and not in the driver. In addition to alcohol, the Springfield plant will recover a quantity of molasses. Other by-products from wood waste will come in time as research advances.

One of the most serious menaces to our forests is the attack of various insects. In a recent issue of Farms, an illustrated magazine, is an article entitled: "Thirteen Trillion Enemies," describing the fight to overcome the Tussock Moth in Latah County, Idaho, when forty carloads of DDT were sprayed on the trees. In 1929-30 it is reported that this moth ruined 300,000,000 board feet of Douglas fir

*Radio talk over KORE, Eugene, Oregon.

in Colville National Forest in eastern Washington.

In view of the serious "brown-out" in California due to shortage of water, I should like to go into this subject before discussing other aspects of the conservation problem.

Here in western Oregon we take our water as a matter of course (we have at times far too much) not realizing always how serious it is to have too little. Our rain is our greatest asset. Although we have oftentimes an excess of water we do occasionally, in our summer months, have a water shortage and have more than once been obliged to ration it. As our rainfall drops in July and August when our crops are maturing we are now resorting more and more to irrigation. This is where our flood control program is going to help us in a very material way besides removing the flood menace. These full reservoirs will provide plenty of water in those very critical times. Water is the most valuable of all mineral substances --- never thought of water as being a mineral, did you? Well, it is, and it crystallizes when it freezes in the hexagonal system, something like quartz. In the Arctic and Antarctic (and in our glaciers too) it is found in great rock-like masses.

There is just one aspect of our river problem I should like to mention, as it seems to have been given little thought, and that is, what to do about the silt brought down by our rivers in time of flood. Most of this washes out to sea and is lost to our land. The United Fruit Company has recently carried out some fine reclamation work on the Ulua River in Honduras. By diverting the flood waters of this stream through carefully determined channels the river-borne silt is carried out onto swamp lands and so reclaimed for the growing of bananas. This is both conservation and development. We could do something like this with our Willamette flood waters.

Next to water in importance comes the soil which is made up of mineral matter with, under certain conditions, more or less organic matter. Of all the geological deposits, water and soil are by far the most valuable to man. So it behooves us not to waste them.

Erosion and over-grazing are the two factors chiefly responsible for loss of soil. However, soil fertility can be seriously impaired by continual cropping without replenishing the elements extracted, such as nitrogen, potash, and phosphorus. As this gets us into agricultural practices I shall refrain from invading that field. I must call attention to the fact, however, that phosphate from Idaho goes through Portland to Japan, when some of our farms which need it are not making any use of it. Is this conservation or just business?

Now, I want to get into a field more familiar to me, that of minerals needed for industry and - we hope not - for war.

Right at the moment the oil shortage is uppermost in our thoughts, especially for us who are using oil burners in our homes and who like to joyride occasionally in our cars. This subject of oil is, of course, a large one and a complex one, and in the few minutes left I can only highlight it. Here are some of the most important points very briefly stated:

1. The world is using oil in greater quantities than it is being produced.

2. New fields are being discovered slowly and while some deeper pools have been tapped the cost of getting the oil to the surface has increased.

3. There has been great waste of both oil and gas in the past, though at present measures are being taken to remedy this situation. Remember, it has taken millions of years to produce this substance which we burn up in a matter of hours or days. Years ago the people of Indiana used to let their natural gas burn day and night and now it is gone. This was just plain stupidity.

4. American producers are credited with developing more oil and more efficiently than all other nations combined.

5. The most promising fields are now located in foreign lands and it is becoming increasingly difficult for American operators to get into and stay in those countries.

6. Gasoline can and will be made from coal and oil shales if and when we are forced to go to these sources, but it increases cost. We have adequate reserves of both oil shale and coal for an indefinite period.

7. All attempts to get oil from the rocks of Oregon have so far failed, but this does not mean there is no oil in Oregon. We don't know, and can't know until we drill more holes. Oregon is rated as possible, but not probable, oil country.

8. Oil in the Near East might lead us into World War III.

All this calls for conservation of our oil supplies and further search for new fields. It would help both our conservation progress and our personal health if we quit flitting about in our cars and walked more. A lot of us are just too lazy.

In the Coos Bay region we have at least 100,000,000 tons of coal. Market conditions have so changed over the years that this coal is not now in demand. In 1854 this same coal sold in San Francisco for $22 per ton. We haven't time to discuss all the factors that have brought about this situation; competition with California oil and the development of water power have been the chief factors. Now, what are we going to do about this? Well, with California oil dwindling and a power shortage already upon us, we can and must do something. We've got to strike out along new lines. We can gasify this coal and use the gas in gas turbines to run electric generators. It has been done elsewhere with similar coals - for instance in the Philippines. Furthermore, we can burn this coal underground, eliminating mining operations, and utilize thin seams which could not be economically mined. You are skeptical? Yes, doubtless, so. However, this is being done in Russia and Belgium, and experiments along this line are being carried out now in Alabama by a private fuel corporation. This is both conservation and development. A program of this kind calls for expensive research and Oregon could well afford the expense.

We have other minerals and mineral substances in Oregon which need investigation and we have several agencies, federal, state, and private, at work on these doing excellent work, but not enough. I should like to mention one of the latest in this field, a private organization, The Raw Materials Survey with headquarters in Portland. This is headed by General Thos. Robbins, formerly with the U.S. Army Engineers, who built Bonneville dam. This group with other consultants held a symposium on Coos Bay coal in Eugene on March 6, 1948.

We come now to another important phase of our subject, the conservation of our fish and game. Here is where I am apt to get into very deep water. I shall steer clear of the technical aspects of this controversial subject, but I can emphasize the need for sound expert study of the many problems connected with it. At the moment, the wild-life people and the proponents of flood control are somewhat at variance in their views. There is much to be said on both sides, but facts and not emotion should guide us to the final answers. I am not going to pass judgment on the question of the dams and fish, as my qualifications do not entitle me to a competent opinion; but of one thing I am sure, namely, the pollution of our rivers by industrial waste and the sewage from our cities is doing a great deal of damage to our fish.

We leave this question of what to do about our fishing industry to those better qualified to deal with it, and say a few words about our wild life. As a member of the Order of the Antelope, I am, of course, very much interested in the preservation of primitive areas where our wild game can be protected. In this field several agencies are doing commendable work, and I have no suggestions or criticisms to offer. Probably the Forest Services of both the Federal and State governments are playing the greatest role and more power to them. As people get weaned away from the rifle and resort more to the camera there will be less and less destruction of our wild life.

One of the most serious conservation problems is the depletion of our arable land. What with over-grazing, the wrong kind of plowing, continuous cropping, lack of the use of fertilizers, erosion, flooding, and the encroachment of industrial plants, the quantity and quality of our arable lands are being reduced. In the last analysis our civilization depends upon the land, and especially upon the farms. Agriculture is still the number one industry of our State. Well, we leave this matter to our agricultural experts at the State College and to our County agents. They need no suggestions from me. All I wish to say in this connection is that I have seen countries where the land has been abused, and I do not like to contemplate any such conditions here. If you want to understand something of the fundamental difficulties in Palestine you must know what has happened to the soil in that unhappy land.

One other aspect of conservation needs to be touched upon, namely conservation of public health which is even more important than our forests or minerals. Of course, a geologist has no qualifications for discussing the many problems that arise in this field. Nevertheless, because a geologist, due to the nature of his work, gets about in the world more than many others, he may be permitted an observation or two. It is well-known that the young men from the Pacific Northwest, because of their general health and physical training, were able to undergo the rigors of war better than any of their enemies. In the days ahead they may be called upon to do even better, and so we cannot let up in our program of physical education and public health.

I should like to dwell for a moment or two on the subject of our parks and wilderness areas. We have many of these, one national park, two national monuments, about 75 state parks, and several game preserves. Always there is the temptation to encroach upon these areas, as in the case of the present controversy over the boundaries of Olympic National Park. We must guard these well. Man cannot live by bread alone. He must retreat occasionally into the quiet of chapel or forest cathedral and commune with his Creator. The man who thinks he does not need to do this is not very smart.

Before concluding my remarks I would like to make a constructive suggestion. We have in this state a number of agencies doing admirable work in the field of conservation. To name but a few: the Federal and State Forest Services, Keep Oregon Green Association, The League for the Preservation of Roadside Beauty, Isaac Walton League, the U.S. Army Engineers, the U.S. Reclamation Bureau, Fish and Game Commission, etc., but we have no over-all organization to coordinate all this work and see that these various agencies do not work at cross-purposes. Other states have such organizations and we need something like this in our state to iron out some of the differences that have arisen in connection with our flood-control program.

I wish to close by reading a paragraph or two from the great textbook on conservation by my old teacher whom I mentioned at the beginning of this short talk:

> "In a few thousand years man has risen from the level of the savage to the height of the great creations of science, literature, and art. The human mind has dared to ask the meaning of the universe, even to the purpose of its own existence. These amazing accomplishments have taken place in the mere infancy of the human race. The most daring speculation that I might make as to human achievement would be poor and futile as compared with future realizations. It is in order that humanity itself may be given an opportunity to develop through millions of years to come under the most advantageous conditions that we should conserve our natural resources, and thus make possible to billions of future human beings a godlike destiny.
>
> "Conservation means 'the greatest good to the greatest number - and that for the longest time.' "

****

GEOLOGICAL SOCIETY TRIP
Sunday, July 24, 1949
By
May R. Dale and Leo F. Simon

A few never-say-die members met at the Journal Building for a Sandy River trip in spite of clouds that had already started to empty themselves of an excess of moisture they must have been storing up just for our Sunday outing. The leader, Mr. Ford Wilson, informed us that the road is poor even in good weather, so it was decided to postpone the scheduled trip which was to include a study of the buried forest southeast of Springdale. This information sent a few of the few home.

From Viking Park a caravan of three cars assembled. The Ericksons, the Simons, Eliza Stevens, and May Dale were joined by Mr. Ohmart of Salem who was returning from a scouting trip in southeastern Oregon. Troutdale formation and Boring lavas were pointed out in this vicinity.

Between Gordon and Buck Creeks, along the side of the road, we dug for fossil leaves - but Mr. Rudolph Erickson discovered clam shells. The bank consists of many layers of what appears to be fine pumiceous and micaceous sediments, some weathered yellow and some gray blue. Mr. Ohmart who had climbed up this sedimentary bank, in his great determination to pick out a shell, loosened a big chunk of the stuff. Jumping back to clear himself of it, he lost his already

precarious footing, and the boulder and Ohmart took the same path down the bank together. There were some tense moments and a sigh of relief from all when Mr. Ohmart finally proved that he had no broken bones although he was badly shaken and bruised. This incident should caution us to be very careful and observant of imminent dangers. We don't want our smiles changed to tears. Mr. Ohmart will have one specimen - a small compensation for his painful fall. The one or two other specimens dug out will be identified if possible. No guesses now. This is not good collecting material as the fossils are too weathered and soft. May Dale, above, getting an excellent view of the proceedings, decided not to scramble down that undercut bank so took the long way back through nettles and wet underbrush, but (we hope), no poison oak. Time will tell, however.

At river level the Columbia River lavas were exposed overlain by Troutdale formation gravels and above by post Troutdale which contained some very large boulders. Wonderful views of the meandering Sandy River, deeply incised in its valley with sheer walls of Troutdale formation, were exposed for our admiration even though there were rain, low hanging fog, and haze. The distant sunlit patches looked afire against the immediate grays.

One of our party thought he had found the prize of the day - a glistening white fragment with some black spots. Was this Polka Dot agate from Central Oregon? Alas, no! - it was only a piece of old pottery.

The caravan had dwindled to two cars now, the five passengers of which finally ate lunch near Bull Run Power House, alternately enjoying the sunshine and daring the liquefied sunshine to make them retreat.

From the bridge crossing the Bull Run, a fine view up and down the river showed Rhododendron formation in the river bed and banks - a volcanic breccia first identified near Rhododendron, Oregon, in the Zigzag Mountains. We drove out of Bull Run Canyon and, from a higher vantage point, we viewed man-made Lake Roslyn, a storage reservoir of water from the Little Sandy (a tributary of the Bull Run River) for ultimate conversion into electrical power at the power plant at Bull Run. We continued down the river to Dodge Park, a recreation area owned by the City of Portland, up the hill to Bluffs Road, and north to Baseline Road.

A long stop at Rocky Butte on the way home gave us time to review the fact that Mt. Tabor, Mt. Scott, and Rocky Butte are Boring lavas and could be termed the 'death throes' of the great lava flows that built up the Cascades. A grand panorama of the Willamette River, the City of Portland, the Columbia River, and the mountains tell a long, long story covering incidents from the present to over a million years ago.

Arriving home at 6 o'clock, we talked about our ten hours' outing and agreed that it had been very worthwhile. We couldn't imagine getting up early on a Sunday morning, packing lunch, and then not going anywhere! We had traveled only a few miles but had seen so much! We counted among our blessings Portland's ideal location which had made this possible.

This beautifully scenic Sandy River trip, which has been so well planned and painstakingly logged (See July News Letter) by Mr. Howell, will be rescheduled for some future Sunday.

****

UNUSUAL FLOODS ON KNIK RIVER, ALASKA

(Some months ago those attending one of the luncheon meetings heard F. F. Lawrence report on flood conditions along the Knik River in Alaska. Following is an abstract of that report prepared by K. N. Phillips which will serve to refresh the memory of those who attended that luncheon, and will be of particular interest to those who could not hear the original report.)

From unpublished report by F. F. Lawrence, engineer, U. S. Geological Survey.

The Knik River rises in the Chugach Mountains northeast of Anchorage, Alaska, and flows generally northwest and west to Knik Arm of Cook Inlet, 40 miles northeast of Anchorage. Each year there is a period of high water in the latter part of July or early August. The unusual feature of the flood is that it is caused chiefly by the annual drainage of Lake George, a seasonal lake about 17 miles upstream from the Glenn Highway Bridge, at the point where Knik Glacier enters from the east, blocking the valley of Knik River.

Each summer the normal runoff from the basin accumulates above the ice dam forming Lake George, until the rising water overtops the ice dam and spills over in late July or early August. The flowing water melts and erodes a channel which becomes progressively deeper until the natural channel is exposed. The lake is said to be emptied completely except for several small ponds. The natural discharge from the upper basin continues to flow through the gap until freezing weather in the fall reduces the flow to a point where the glacier can close the gap, thus setting the stage for a repetition of the cycle.

The date of first overflow and date and height of peak stage at the highway bridge have been observed by the Alaska Road Commission since 1939. Measurements of discharge were made by Geological Survey engineers in 1948. It has been calculated that the volume of Lake George at the time spilling began in 1948 was 1,710,000 acre-feet. If the ice dam was 350 feet high, as has been reported, the area of the lake when full was about 23 square miles.

Date and Discharge of Annual Floods

Year	Spilling began	Peak discharge		
		Date	Gage Height feet	Discharge c.f.s.
1939	Aug. 10	Aug. 17	25.0	200,000
1940	1	6	24.2	185,000
1941	3			
1942	July 25			
1943	17			
1944	20	----	23.25	160,000
1947	July 27			
1948	28	5(8 a.m.)	24.75	197,000

Daily Discharge in c.f.s., 1948

July 16 -	7,220	Aug. 1 -	75,400	Aug. 5 -	190,000	Aug. 9 -	27,700
28 -	10,000	2 -	114,000	6 -	156,000	10 -	22,500
29 -	12,600	3 -	146,000	7 -	98,300	11 -	21,000
30 -	27,700	4 -	176,000	8 -	44,500	21 -	20,500
31 -	50,000						

The similarity between the causes of the annual Knik River floods and those which geologists have deduced as having occurred in late Pleistocene times in the Columbia River Basin will be apparent. The agencies which produced the fantastic Columbia River floods are still at work and could conceivably return some day to the Columbia Basin.

K.N.P.

****

GEOLOGICAL NEWS LETTER

OFFICIAL PUBLICATION OF THE

VOL. 15 NO. 10 PORTLAND, OREGON October 1949

GEOLOGICAL NEWS-LETTER
Official Publication of the
Geological Society of the Oregon Country
421 Morgan Bldg. Portland, Oregon
POSTMASTER: Return Postage Guaranteed

THE GEOLOGICAL NEWS LETTER
Official publication of the
GEOLOGICAL SOCIETY OF THE OREGON COUNTRY

****

****

****

MEMBERSHIP APPLICATION
GEOLOGICAL SOCIETY OF THE OREGON COUNTRY

Qualifications and dues:

Applicant must be sponsored by a member and recommended by the Membership Committee. A knowledge of geology is not a requisite. There is no initiation fee. A Member shall be over 21 years of age; a junior member between 18 and 21. A single membership may be held by husband and wife and their children who are under 18 years of age. The dues are $3.50 per year ($1.50 for Junior members), payable in advance, and include one subscription to the Geological NEWS LETTER. Dues of members living in counties not adjacent to Multnomah County are $2.50 per year.

Date _____

I, _____ (please print full name) do hereby apply for membership (junior membership) in the Geological Society of the Oregon Country, subjoc to the provisions of the By-Laws.

Home address . . . . . .Phone . . . . . .

Business address . . . . . .Phone . . . . . .

Occupation . . . . . Hobbies . . . . . .

I am particularly interested in the following branches of geology: _____

_____ I enclose $_____
for the year's dues, March 1 to March 1. (Checks payable to the Society)

Sponsored by _____
(member)

_____
(signature)

SOCIETY ACTIVITIES

LECTURES: On the second and fourth Fridays of each month in Public Library Hall, S.W. 10th Ave. and Yamhill St. Watch the Oregonian and Oregon Journal for announcements. Meetings start at 8:00 p.m.

TRIPS: An average of one field trip is held each month. For questions and suggestions concerning trips call Dr. F. G. Gilchrist, BR 7375.

LUNCHEONS: Every Thursday noon at the Chamber of Commerce, 824 S.W. 5th Avenue between Yamhill and Taylor streets. Luncheon 85 cents.

OCTOBER LECTURES

Friday Oct.14 "A Trip to the Fort Rock Valley Area in Central Oregon," by Leo F. Simon. The main geological feature of this area is Fort Rock which is a remnant of an old volcano that blew its top off and was then eroded by wave action when the area was covered by large lakes in Pleistocene times. The lecture will be illustrated by many kodachrome slides. Pictures of other trips will be shown if time permits.

Friday Oct. 28 "A Year's Vacation through the United States," by Raymond L. Baldwin. Mr. and Mrs. Baldwin have just returned from a year's tour and have much to tell us. The talk will be illustrated with kodachrome slides.

OCTOBER FIELD TRIP

Sunday Oct.30 The Field Trip for October will be a trip to Tillamook, Oregon, to see the Ruth Coats Shell Collection. The members will assemble at the Ruth Coats Hobby House, 710 E. First St., Tillamook, at 10:00 a.m., Standard Time, October 30, 1949. (Turn right about 4 blocks west of railroad tracks if going by Wilson River Road. Members bringing lunch will find facilities available to spread out in the Hobby House; coffee, cream, and sugar will be furnished by Ruth Coats.

Following luncheon and the inspection of the shells, there will be a trip to Bay Ocean area to view the Sandstone Cliffs of the peninsula and to observe the effect of the sea erosion and cutting. A further side trip to Oceanside and the Three Arch Rocks Bird Refuge area is also contemplated. Pillow lava formations, zeolites (mordonite), and agates may be observed and found here.

On the last field trip some members were not able to go due to lack of information as to space available. It will be appreciated if members having space available will cooperate to the fullest extent and phone Al Vance, MUrdock 5204. Those seeking transportation should contact Mr. Vance. It is planned the trip will disband about 4:00 o'clock permitting return to Portland in the daylight.

NEWS NOTES

Miss Rosalie Libbey, daughter of Mr. and Mrs. F. W. Libbey, was married Thursday, September 22, to Mr. John L. Swanson of Parkland, Washington. The marriage was performed in the Libbey home by Rev. Edwin E. West, minister of the Episcopal Church of Oswego. Mr. Swanson is a junior at Reed College. The couple is living next door to the Libbeys at 2259 N. W. Everett. * * * * *

Miss Barbara Weinzirl, daughter of Dr. and Mrs. Adolph Weinzirl, became the bride of Robert E. Symonds at Westminster Presbyterian Church on August 20, 1949. Original plans for residence in Walla Walla had to be changed due to the groom's last-minute transfer to Portland by the U.S. Army Engineers. Temporarily the young couple is residing with the bride's parents at 3536 N.E. 27th Avenue.

****

CAPTAIN DRAKE, CAVALRYMAN AND FOSSIL HUNTER

By
Phil F. Brogan

Eighty-five years ago, Captain John M. Drake, stationed at Old Fort Dalles on the Columbia River, took his cavalrymen into the sparsely settled interior country, a region menaced by a renegade Indian chief, Paulina, and his Marauding Snakes. Ostensibly, Captain Drake and his men were in search of Indians, but "rockhounds" of 1949 who know the lure of the lonely hills are inclined to believe that they were seeking something they valued more highly than scalps: there is some evidence they were seeking fossils for Oregon's first geologist, kindly Thomas Condon.

On his 1864 expedition, Captain Drake took his cavalry as far as the Harney valley. A letter to Mr. Condon from Camp Maury, in the upper Crooked River country, indicates that Captain Drake had good luck locating both fossils and Indians. On July 19, 1864, he wrote: "The weather is pleasant and fine, and with the exception of a few wounded, the command is all in good health." That was the only reference to a skirmish with the Indians, but the letter did make considerable mention of a fossil discovery on Beaver Creek, a tributary of Crooked River. The find was made by soldiers who remained in camp, while Captain Drake and a small party chased the Snakes.

"On my return to camp, I found it converted into a vast geological cabinet," the captain wrote. The "rocks" were removed to Camp Maury. "You will receive a large contribution for your cabinet," Captain Drake assured Mr. Condon. In the assortment were marine shells, the first reported from the area. Captain Drake, apparently unable to visualize a sea sweeping over the Ochoco highlands, was inclined to believe the shells were deposited "in the bed of a saline lake."

The fossils obtained by Captain Drake and his cavalrymen proved to be the foundation stones in the study of Oregon geology - a study that is not yet completed. They were the first marine fossils obtained in an area that through the decades has proved vital in the interpretation of Oregon's primordial past. Specimens obtained by the soldiers proved to be representative of the Cretaceous age. Since that discovery of 85 years ago, horizons of all three divisions of the age of reptiles, the Mesozoic, have been found in the area.

And in the past quarter of a century, the geologic history of the region over which Drake and his hard-riding cavalrymen chased Indians and hunted rocks has been pushed back long millions of years, into the dim eons of Paleozoic times. Captain Drake certainly would have been amazed on that summer day in 1864, when he wrote to Mr. Condon from pine-studded Camp Maury, if he had known that more than a dozen seas had rolled over the Ochoco lands in ancient days and that in Jurassic times some 15,000 feet of sediments had piled up in the region now warped into highlands not far from the geographic center of the State.

One of the most important recent discoveries made near the 1864 camp site of the Indian hunters was a Carboniferous plant locality, on the Mills ranch of the present, in southeastern Crook County. It is the oldest known land plant locality in Oregon. In this region, Calamites grew in a tropical forest and the conifer known as Dicranophyllum flourished, long before dinosaurs took over the rule of the earth.

"Much more must be learned before we can have a full understanding of this ancient landscape and of the forests which covered it some two hundred millions years ago," Dr. Ralph W. Chaney, University of California paleobotanist, noted in "The Ancient Forests of Oregon." Dr. Earl L. Packard made the first report on the Carboniferous plants, in 1928. At Dr. Packard's suggestion, Charles W. Merriam began a study of the deposits, and in 1938, he and his assistant, S. A. Berthiaume, discovered abundant remains of land plants.

Cavalryman Drake, who was skeptical about the Beaver Creek shells having been deposited in an ocean bed, apparently did not realize that in leading his Indian fighters over the interior Oregon highlands he was frequently riding over the upturned edges of ancient seas. In a comparatively short ride from Snow Mountain to Seneca, he would have crossed ten different formations, each obviously representative of a different sea. Two of these stratigraphic units, the Lonesome and the Trowbridge, separated by an unconformity, hold sea beds some 8,000 feet thick. Ammonites are found in the Trowbridge shale. Oldest of the Mesozoic formations in the timbered highlands is the Donovan, with its fossiliferous red "Hargrave" sandstone.

The discovery by the cavalrymen of marine fossils along upper Crooked River in 1864 stimulated Mr. Condon's desire to visit the region, and a year or two later he obtained permission to make the trip with a company of cavalry acting as an escort to a caravan of supplies for the Harney Valley. It was on this trip that the pioneer clergymen, who was to become Oregon's first state geologist, made his first discovery of John Day mammal material.

"I think a practical geologist would find this an interesting country," Captain Drake mentioned in his letter to Mr. Condon 85 years ago. He underestimated the interest. In the past half century, the region has attracted the attention of America's leading paleontologists, paleobotanists, and geologists.

****

PHIL BROGAN - VETERAN SCIENCE REPORTER

By
Warren D. Smith
Professor of Geology Emeritus
University of Oregon

Good reporters can be made, but star reporters, like great teachers, are born. Of such a one, I propose to write in this article and in doing so, perhaps, slip in a few suggestions to my newspaper friends.

Phil Brogan came from the high stock ranges of Eastern Oregon. He was born in a land of old volcanic plains and spent his youth riding the range, but keeping his eyes open as he did so. His long horseback trips took him over into the John Day basin to the classic "fossil beds" made known to the scientific world by Thomas Condon, the pioneer geologist of the Oregon Country. Later he came to the University of Oregon where he majored in journalism and minored in geology. And very fortunately for us he did so, for our subject as well as all the sciences, is in need of expert interpreters, who can translate our jargon into plain English for the men and women who, by their taxes, support our work.

Phil was born of Irish parents, John C. and Grace Curran Brogan, (Eastern Oregon is full of Irish) in The Dalles, on the Columbia River, March 23, 1896.

He was raised on a stock ranch in the Ashwood community of the "Thunder Egg" country of "burnt out" lavas. He attended grade school and high school in Antelope, The Dalles, and later, the former Columbia University, Portland. Later he did a hitch as signal quartermaster in the Navy during World War I. In 1919 he joined the staff of the Bend Bulletin where he has been associated ever since with that outstanding citizen of Central Oregon, Judge Robert Sawyer.

I don't have a clear recollection of Phil when he first came into my class in general geology, but I know that he soon made an impression upon me and his other teachers with his earnestness and his enthusiasm. He often entertained us with some of his experiences in the open range country beyond the mountains and told us of likely places in which to collect interesting specimens. And in his reports and term papers he showed a flair for scientific writing; that is, writing about scientific subjects.

Later, when he joined the staff of the Bend Bulletin, he pursued his reading in geology and supplemented this with excursions into the field. He was well fortified for this kind of endeavor as he had taken, in addition to his regular courses in journalism, several courses in geology and even attended the summer field course for the professional students in geology.

It was not long until his activities in the central Oregon country attracted the attention of scientists outside of Oregon, especially in California and he soon came to know such men as John C. Merriam, Ralph Chaney, Chester Stock, and Howel Williams. These men all have at one time or another acknowledged their indebtedness to him for much valuable scientific material. Today no geologist who is contemplating work in central Oregon would think of going into that country without contacting Phil Brogan.

Some years ago after Phil had left school, I heard about a so-called "buried city" in the Silver Lake country - to be more exact, in the dry bed of Thorn Lake into which at some remote time water overflowed from Silver Lake (now dried up). Strange place to look for a city! One day the late Bill Hanly, the well known cattleman of Burns, persuaded me to visit this locality and Phil Brogan joined us on the expedition. We camped right down on the old lake bed of Thorn Lake and I remember that during the night it rained, something unusual for that time of year, and we had to move our sleeping bags up onto higher ground. The next day Phil and I investigated some dikes which appeared to run in various directions across the bed of the lake. These were of varying width, from a few inches to a foot or more, and stood up several inches above the old lake. We decided that they were hardened material which had sifted into pre-existing cracks and had resisted the erosive action of the wind. Well, they didn't look like the walls of an old city to us and so we told our friend Mr. Hanly. Whether or not he accepted our verdict I'm not sure.

Nearly every week in the Sunday edition of the Oregonian you can read a geological "story" from Phil. Sometimes he writes about his own discoveries, but more often it is about the work of some professional geologist whose writings have to be translated into terms the layman can understand, and he does a masterly job at this sort of writing since he is a journalist with some scientific background.

Phil's library contains some of the most important scientific monographs which reveals that he is a real student of the subject. He is not merely a reader of books, but one who has supplemented this sort of knowledge with first-hand field investigation of his own.

Some years ago Phil organized the Bend Geology Club and these amateurs, under his guidance, have learned a lot of interesting things about central Oregon. He is in demand as a speaker before other clubs similar to the Geological Society of the Oregon Country of Portland and is always listened to with great interest.

Occasionally he returns for a visit to his Alma Mater and he is always welcomed by the geology department and has addressed the members of the Condon Club, a society of the professional students.

Some other of his activities are the following: For nineteen years he served as United States Airway observer in charge of the Bend Station, 692 of the international network. When this station was closed in 1948 he was the oldest observer in point of service in the Pacific Northwest.

He also is a member of the American Meteor Society and is assistant regional director under Dr. Hugh Pruett in Oregon assisting Dr. Pruett in spotting meteors, and has named several great fireballs of the past two decades. He also delved into the subject of archeology and has brought to the attention of Dr. L. S. Cressman, head of the Anthropology Department at the University of Oregon, some important finds of pre-historic artifacts, notably those at Wickiup and Odell Lake.

He is now chairman of the Oregon Geographic Board and, in 1948, was appointed a member of a national committee on glaciers, which is one of the important committees of the American Geophysical Union.

What a fine avocation geology makes for one who is confined much of the time to a newspaper desk. Not only does he get great relaxation in this way, but he is doing a fine thing for many people who cannot carry on these studies, or who haven't the training to enable them to interpret what they see when traveling about the state. And so in closing I pay my tribute to a man who has not only wonderfully enriched his own life, but also has been of great assistance to us professional workers in the field of geology. If I were a college president in Oregon I would like to award him with a degree of Master of Arts in Public Service, a degree I would prefer to an honorary L.L.D.

****

THE PENN STATE POLYLITH

In the March 1949 number of "Mineral Industries" is an interesting illustrated article by Dr. John Eliot Allen describing the Penn State College Polylith on which construction was begun in 1896 and finished a few years later.

A photograph of the polylith, made soon after it was erected, shows its general appearance, and a drawing by Dr. Allen shows the location in the polylith and in the geologic column of each of the 281 blocks of stone from 139 different localities in Pennsylvania and neighboring states. Each stone is numbered in the drawing and listed in a table which gives its name, the source of the rock by individual or quarry, the nearest town, and the county or state, as well as its value as a building stone as estimated in 1899 and in 1949. The polylith is 33 feet high and about 5 feet square at the surface of the ground.

Dr. Allen suggests that a similar polylith be erected by the Geological Society of the Oregon Country in a Portland park or in front of the Oregon Museum of Science and Industry after that building becomes a reality. It should be of interest to geologists and builders.

Why not begin now to collect samples of the rocks of the Oregon Country for the construction of the Dr. John Eliot Allen Polylith?

O. E. Stanley

****

TRIP TO THE CENTRALIA AREA
August 27 and 28

Just before noon on Saturday, August 27, about 30 Geesockers assembled at the Centralia Post Office where the leader of the trip, Mr. Parke Snavely, Jr., of the U.S. Geological Survey, has his office. Mr. Snavely introduced his aides, Mr. Roberts and Mr. Hoover, both with the Survey, and Mr. Billman and Mr. Rector of the Union Oil Company. Then all who had brought lunches went over to the park across the street, spread out on the grass under the trees, and fed the inner man. At about 1:00 the caravan started off on the first lap of the trip.

The first stop was near Wabash along the Northern Pacific Railroad leading northward out of Centralia. Lower Oligocene sandstones overlain by a Pleistocene fill were exposed in the first outcrop. These sandstones are almost flat-lying and are located in the Centralia syncline. We then proceeded northward along the railroad tracks for about a quarter of a mile to an exposure of siltstone, sandstones, and carbonaceous shale which make up the Cowlitz formation of upper Eocene age. The Cowlitz formation contains the coal seams in the locality.

Some crossbedding was noted at this second outcrop. The Cowlitz formation as exposed here has a dip of about 70 degrees and occurs in an anticline that has been drilled recently by the Union Oil Company.

A Turritella zone was observed here, and some specimens were collected by members of the party. Also, a burnt coal seam was noted.

The Packwood fossil locality on the south side of Hanaford Valley near Packwood Creek was the second stop. The Cowlitz formation (upper Eocene) was exposed here in a road cut. Turritellas (gastropods) were abundant in this outcrop, as well as pelecypods. Turritella uvasana stewarti was one of the commonest fossils collected here.

Our third stop was at the Tono strip pit on the north side of Hanaford Valley. Here an 18-foot seam of subbituminous coal was exposed. The coal occurs in the Cowlitz formation and dips about 5 degrees in this area. About 61,000 tons of coal were mined here last year by stripping off the surface Pleistocene gravels and removing the coal where the depth of stripping did not exceed 30 to 40 feet.

A portable rotary drill rig being used by the U.S. Geological Survey in their exploration program for coal was next visited. The rig was located on a narrow ridge on the south side of the Skookumchuck valley.

This was our last stop for the day's trip, and we went back to Centralia where most of us had reservations at the Lewis and Clark Hotel. That evening the group, augmented to 48, met in the banquet room of the hotel; and with mutual astonishment we noted the miraculous transformations brought about on each other by a bath and a change of clothes. After the dinner, President Leo Simon welcomed guests, and Mr. Snavely introduced Mr. Sheldon Glover, Supervisor of the Washington Bureau of Mines and Geology, his son Major Glover, and Mr. V.E. Barnes, geologist with the Texas Bureau of Economic Geology.

Then the group moved into the lecture room and here Mr. Billman showed two very fine motion pictures in color: one on oil geology and the other on the story of an oil well. After the movies, the group had a chance to see what microfossils look like under a high-powered microscope.

On Sunday, the first outcrop examined was an exposure of the Lincoln formation near the community of Galvin. The Lincoln formation consists of middle Oligocene marine strata of tuffaceous siltstone and sandstones. This exposure near Galvin is situated in the Centralia syncline and is a continuation of the same structure noted the previous day north of Centralia. The dip of the beds in the Galvin locality is about 5 degrees.

Numerous fossils occur at this locality. Species of Dentalium, Crassatella, Pitar, and Perse were collected.

The group then traveled on to an exposure of the Porter formation located on the east side of the Chehalis River just north of the town of Porter. The Porter formation is middle Oligocene in age and is younger than the Lincoln formation. The outcrop is very fossiliferous. On route to Porter we went through the town of Oakville, which, it was pointed out, was the center of the earthquake in April of this year. Ninety percent of all chimneys on houses in this small community were damaged or destroyed.

Sunday dinner was held on the bank of the Chehalis River at a very exclusive sand bar. Some members preceded the meal by a quick plunge in the river - clothes and all.

In the afternoon, the famous Tenino Mounds, situated on the outwash plains west of the town of Tenino, were observed and discussed. On these plains numerous symmetrical, closely spaced mounds of glacial outwash were developed during the Vashon glacial epoch of the Pleistocene. Numerous theories on the origin of these mounds have been advanced, even so far as incriminating the gophers. A new theory on the formation of these mounds has been proposed by Mr. R. C. Newcomb of the Ground-Water Division of the U.S. Geological Survey in Portland. The mounds, according to his theory, were formed by the buckling of the ground due to wedging of ice formed in cracks along the margins of polygons, a condition similar to that occurring in the permafrost regions of Alaska.

The last scheduled stop of the trip was at the Tenino sandstone quarry south of the town of Tenino. This sandstone is upper Eocene in age and has been quarried in the past for building stone. The old quarry is 190 feet deep and partially filled with water. One end of it has been converted into a swimming pool for Tenino residents.

Before returning to Portland and other points, some of the group stopped in Tenino at the home of Mr. Don Major, vice president of the National Federation of Mineralogical Societies. Mr. and Mrs. Major showed many interesting minerals which they had collected on their travels.

****

SOME MINERAL AND FOSSIL COLLECTORS THOUGHTLESS

The State Department of Geology and Mineral Industries has received complaints that some mineral and fossil collectors are seemingly without feelings of responsibility when making excavations on highway rights of way and on private property. Instances have been cited of places where literally tons of rocks and clay have been picked down and left in highway ditches, blocking drainage. This type of collecting will tend to give all collectors a bad name and ultimately place obstacles in the way of geological field work. Shovels should be carried on field trips and when group trips are made an official inspector should be selected from the membership to see that ditches are cleaned and all litter taken care of.

(From: The Ore.-Bin, September 1949)

****

THE TRIBULATIONS OF A TWO-DESK MAN

By

Orrin E. Stanley

One advantage of living alone (or perhaps it is a disadvantage) is that when one lays down a book or a paper, or a picture, it stays right there until it is needed again. That, at least, is the theory. If "right there" happens to be the top of one's desk it is natural that there may be quite an accumulation of miscellany in the course of a month or more; and then the thing that one needs, and needs quickly, may be buried beneath the more recent deposits.

A geologist understands such matters quite readily since through his studies of the relative positions and thicknesses of various strata he reads the history of the earth recorded in rock long before there were geologists to make written records and to lose them in the more recent litter of their desks.

The field geologist may excavate in one spot to the full extent of the time and physical strength available and may continue to uncover interesting material and to record his findings without a single worry about something that he cannot find. The one-desk man is also in an enviable position. His task is simple even though it may be tedious. He just picks up one thing after another and puts it in another pile until he finds the lost article. But with two desks besides a large dining table that has not had a meal served on it in years, and a basement that still has a few cubic feet of unoccupied space, there is always the haunting fear that one is not looking in the right place as the chance of beginning the search in the right location diminishes as the square, if not as the cube, of the number of places to search.

Now if we add to the multiplicity of locations and the elapsed time since the missing article was last seen, the fact that the said missing article is the only thing of its kind in existence and that it is owned by a very dear friend, you may be able to form some conception of the state of mind of the searcher for missing articles.

One might think, considering the advanced age of the writer and an appearance of a reasonable degree of native intelligence, (deceptive though such appearance may be) that he should have evolved an air-tight system of caring for property entrusted to his care regardless of how careless he might be of his own possessions. It is even true that he has repeatedly threatened to establish such a system and to rigidly adhere to it; but to date he has not been able to put the idea across with his inner self. Consequently, on an average of once a month he frantically tears his hair while searching on one desk or another and making wild and fruitless dashes to his dark-room in vain effort to find some missing object. Then - after all hope has gone and he has begun to compose a speech of apology for the unforgivable crime of losing an irreplacable keepsake - with his brain awhirl and his eyes rolling in their sockets, he spies the missing object lying in plain sight on top of the lower shelf of books where he had placed it so that it could not possibly be overlooked.

Completely exhausted, he then places the object where such things rightfully belong and totters off to bed to build up strength for a renewed search a week or so later after he has forgotten that this time he has really filed the object in the right place.

****

ANY SUGGESTIONS?

Mr. Parke D. Snavely will need a house or apartment in or near Portland about November 1st at which time he expects to move his family of 4 from Centralia, Wash. to Portland. He will appreciate any tips on available housing. Phone Leo Simon, BE 0300.

****

GEOLOGICAL NEWS LETTER

OFFICIAL PUBLICATION OF THE

VOL. 14 NO. 11 PORTLAND, OREGON November 1948

GEOLOGICAL NEWS-LETTER
Official Publication of the
Geological Society of the Oregon Country
413 Morgan Bldg. Portland, Oregon
POSTMASTER: Return Postage Guaranteed

THE GEOLOGICAL NEWS - LETTER
Official publication of the
GEOLOGICAL SOCIETY OF THE OREGON COUNTRY

The Geological NEWS - LETTER is issued monthly.
Yearly subscription: $2.00 Single copies: 20¢
Communications and material for publication should be sent to the Editor.
Change of address and subscriptions are required 30 days in advance of date of change, and should be sent to the Business Manager.

MEMBERSHIP APPLICATION
GEOLOGICAL SOCIETY OF THE OREGON COUNTRY

Qualifications and dues:

Applicant must be sponsored by a member and recommended by the Membership Committee. A knowledge of geology is not a requisite. There is no initiation fee. A Member shall be over 21 years of age; a junior member between 18 and 21. A single membership may be held by husband and wife and their children who are under 18 years of age. The dues are $3.50 per year ($1.50 for Junior members), payable in advance, and include one subscription to the Geological NEWS - LETTER. Dues of members living in counties not adjacent to Multnomah County are $2.50 per year.

Date . . . . . .

I, _____ (please print full name) do hereby apply for membership (junior membership) in the Geological Society of the Oregon Country, subject to the provisions of the By-Laws.

Home address . . . . . Phone . . . . . .

Business address . . . . . Phone . . . . . .

Occupation . . . . . Hobbies . . . . . .

I am particularly interested in the following branches of geology: . . . . . .

. . . . . I enclose $_____
for the year's dues, March 1 to March 1. (Checks payable to the Society)

Sponsored by _____
(member)

_____
(signature)

SOCIETY ACTIVITIES

LECTURES: On the second and fourth Fridays of each month in Public Library Hall, S.W. 10th Avenue and Yamhill Street. Watch the Oregonian and Oregon Journal for announcements. Meetings start at 8:00 p. m.

TRIPS: An average of one field trip is held each month. Suggestions for trips should be given to Leo F. Simon, BE 0300, or LA 0549.

LUNCHEONS: Every Thursday noon at the Chamber of Commerce, 824 S.W. 5th Avenue between Yamhill and Taylor Streets. Luncheon 85¢.

NOVEMBER MEETINGS

Friday Nov.12 — No meeting. An Audubon Society lecture will be held on this date.

Friday Nov.26 — "The John Day Country, Oregon's Lost World," a talk by Mr. A. W. Hancock. Specimens from the locality will be displayed.

NOVEMBER FIELD TRIP

If a field trip is planned it will be announced at meetings and in the local newspapers.

* * * * *

NOMINATING COMMITTEE

Mr. Kenneth Phillips
Mrs. Lloyd Ruff
Mr. Rudolph Erickson
Miss Glenna Teeters
Mr. A. D. Vance

* * * * *

BULLETIN ON CASCADE RANGE AVAILABLE

The State Department of Geology and Mineral Industries has secured a limited supply of the Oregon Bureau of Mines and Geology bulletin: "Some Scenic Pleasure Places in the Cascade Range in Oregon" by Ira N. Williams (1916).

Members of the GSOC who do not already possess one of these bulletins may obtain a copy free at the Department office, 702 Woodlark Building, for as long as the supply lasts.

* * * * *

NEW MEMBERS

Charles E. Kirschner, 702 Washington Street, Olympia, Washington.
(Mr. Kirschner is a geologist with the Union Oil Company of California.)

James A. Macnab, 2703 Hemlock Street, Longview, Washington. Phone 1794-W
(Mr. Macnab teaches biology and geology at the Lower Columbia Junior College.)

RENEWED MEMBERSHIP

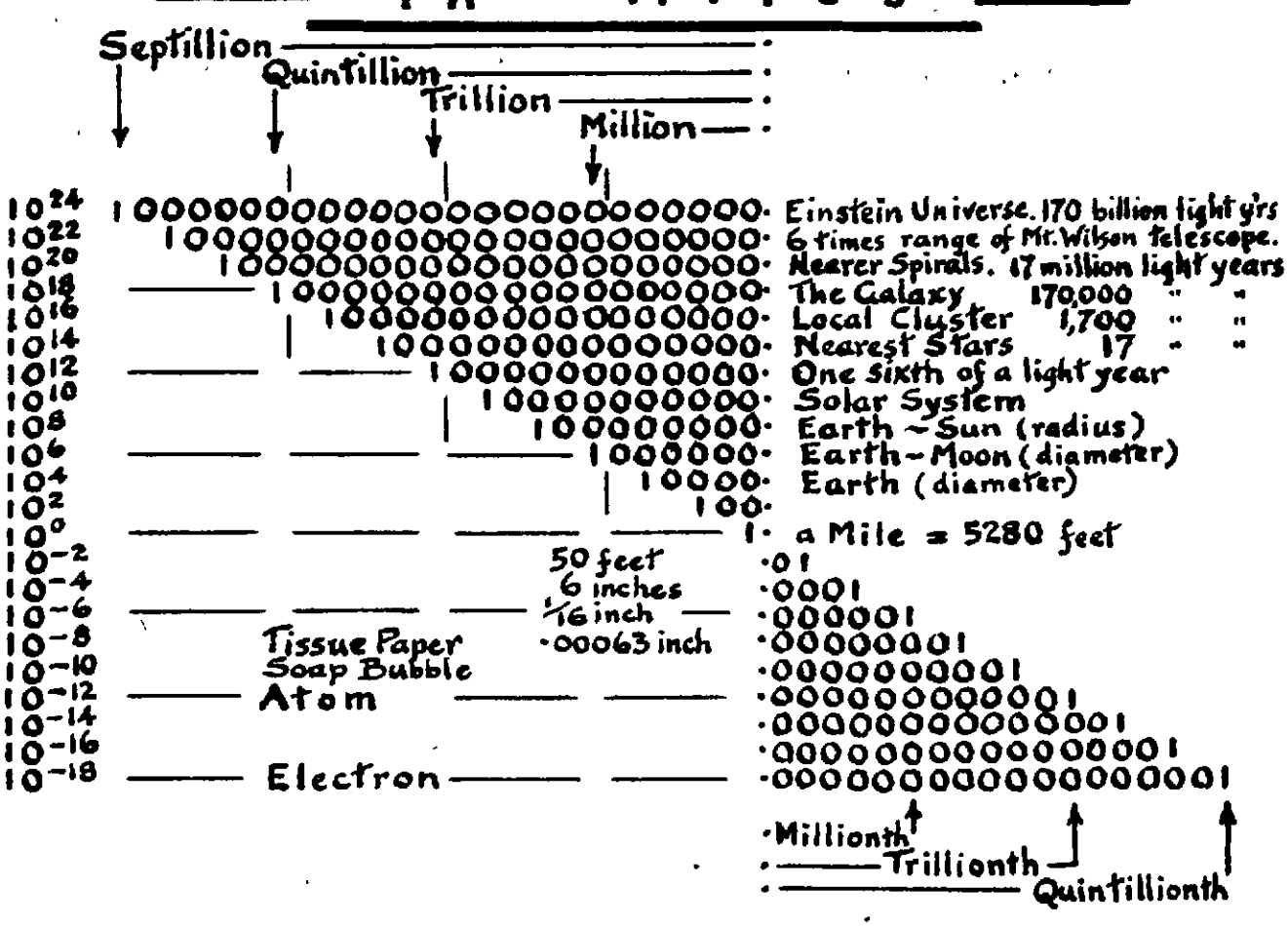
Alva Oakes, 218 N. W. Flanders Street, Portland 9, Oregon.

PAID-UP MEMBERS

Dr. and Mrs. John H. Hershey, C/o Veterans' Administration Hosp., Roseburg, Ore.
(Dr. Hershey, in rewriting his subscription to the News-Letter, says that he is now located at the Veteran's Administration Hospital in Roseburg. He hopes that he may find a group interested in geology at his new location. We join him in that wish.)

****

Relative Sizes in Miles



1 Light Year = $60'' \times 60' \times 24^h \times 365.26^d \times$ Velocity of Light

= 31,558,464 × 186,324 = 5,880,099,246,336.

Seconds in 1 year — miles per second — Miles

or nearly 6 million million

C.F.P.
Dec. '42

AN AID TO THE VISUALIZATION OF ASTRONOMICAL VALUES

By
Carl Price Richards

One of the most widely used methods of teaching is by means of comparisons - the process of comparing the unknown with the known. It is extensively used in ordinary conversation; a person wishing to tell another what kind of a man a certain Mr. X is, compares him to Mr. Y, with whom both are acquainted, possibly adding some qualification such as being taller or heavier. It is used constantly in such phrases as "quick as lightning," "eyes like an eagle's," "as white as snow." Frequently the comparison is a gross exaggeration, but, nevertheless, serves the purpose. When endeavoring to convey conceptions of scientific phenomena, analogies are often essential. One recalls the admonition at the beginning of the elementary textbook on electricity to help the student to visualize the nature of an electric current - "imagine water flowing through a pipe." That analogy, of course, needed very extensive qualification, but served as a basic idea upon which to build the true conception.

One might also cite biblical authority for teaching by comparison. There it is stated that One who was the Prince of Teachers "spake in parables." To convey conceptions of abstract ideas He constantly used comparisons, such as "the kingdom of heaven is like unto . . . ," always selecting that which was familiar to his audience for a symbol of the ideas He was teaching.

In the astronomical field analogies of various kinds are extensively used to enable the serious student, as well as the general public, to grasp as nearly as possible a true conception of dimensions and distances encountered in the realm of the stars. The most common of these is the comparison represented by the mental picture of "an express train traveling at 60 miles an hour continuously day and night" from the earth to some planet or star, and telling how many years it would take to reach its destination. In recent times that picture has been modernized by substituting an airplane at 300 miles an hour in place of the train at a mere 60 and, accordingly, is probably more realistic to the present air-minded generation. In Herschel's day, presumably, the comparison was to the stagecoach at 8 miles an hour. Hence, at any rate, we advance with the times in such things, though it is probably true that the conception conveyed by each analogy was, respectively, equally clear to the people of each period.

Another frequently used analogy is that of the scale model. This usually takes some such form as comparing the sun to a large pumpkin at the corner of Broadway and Main, then the earth would be the size of a cherry seed a block away; Jupiter would be like an orange a few blocks further on; while Sirius would be represented by a big boulder on top of yonder hill so many miles from town. Other schemes might be cited; all have more or less merit and one or another of them, doubtless, has served as the sole mental picture of astronomical distances to many individuals throughout their lives.

A somewhat more technical method, which encompasses the whole gamut of physics from electrons to universes, is shown in the accompanying table. To appreciate it one needs an arithmetical sense, but given that, it carries with it a conception which can be very helpful in visualizing the vastness of astronomical dimensions and the minuteness of physical entities. The basic idea is that every line represents a multiple or submultiple of the same unit - the mile. Unfortunately, the use of that nonmetric unit has necessitated "slipping a cog" in one or two of the comparative figures, such as 50 feet, which is not exactly one hundredth of a mile. It is close enough, however, and does not affect the general purpose of the table, which is to assist one in making mental comparisons.

It should be kept in mind that the figures represent lineal values and that each line indicates 100 times the value of the line immediately below it. And it should also be realized that in square area, each line is 10,000 times the one below, and the cubic space represented is a million times that indicated by the succeeding line.

For instance, take the .01 mile line, (which for convenience, as stated above, has been compared to 50 feet), this lineal value is 100 times the one below it called .0001 mile, or 6 inches. It is obvious that there are 10,000 six-inch squares in a 50-ft. square; also that there are 1 million six-inch cubes in a 50-ft. cube.

Now, to clinch the conception, pick out some four-story building down town, which has a 50-ft. frontage, preferably at a corner, and compare it with a 6-inch cardboard box which approximates a cube. The relative volumes are as a million is to one, the same as indicated in this table by any one line relative to the line next to it. A good grasp and visualization of this relationship will help greatly to a comprehensive appreciation of the proportions of many astronomical values, typical examples of which are cited opposite some of the lines. Thus, the earth-sun radius of 93 million miles typifies the 100 million shown on the fourth line above the unit mile; and the 10 billion miles of the fifth line affords a comfortable margin over the actual distance across the solar system, the relation being roughly one to a hundred.

Similarly, where a volumetric conception is desired, as with the local cluster and the galaxy, which appear on adjacent lines, it is indeed impressive to realize that their spacial relation is of the same order as that of the cardboard box to the four-story building, or one to a million.

The derivation of what might be termed the astronomical yardstick, the light-year, is given below the table and several of the higher mileage figures are compared with light-year values. Another frequently used yardstick is also approximately indicated; the earth-sun radius, often called the astronomical unit, and usually taken as 92,900,000 miles, is closely approached by the 100 million line. Hence the lines above it indicate successive hundred multiples of such a unit.

Conversely, with the fractional values of the mile as one goes down the table, each line represents one hundredth the linear value of the one above. Thus one quickly descends into the diminutive of the physical world.

Regarding the table as a whole, it goes from the ultra-big to the ultra-small; from the super-telescopic to the sub-microscopic. The transition is by uniform steps, each of 100 linear, 10,000 superficial, and 1,000,000 volumetric units greater or smaller than the adjacent ones. It might be that it was a table like this which that anonymous wag had in mind when he perpetrated that delightful doggerel which runs somewhat as follows:

The big fleas have little fleas
Upon their backs to bite 'em;
Little fleas have lesser fleas,
And so ad infinitum.

And the great fleas in their turn
Have greater fleas to go on;
Greater still have greater still;
And then, so on and so on.

The lower portion of the table portrays the field of the physicist, and the upper part seeks to cover the realm of the astro-physicist. The possibility of unlimited extension of this table below its lowest fractions and beyond its upper limits would seem to point to the truth of those cynical definitions which described, first, the physicist as "one who is constantly endeavoring to find out more and more about less and less, till, ultimately, he expects to know everything about nothing."

Then, in contrast, is pictured the astro-physicist as "a scientist who realizes that, relatively, he knows less and less as his horizon extends more and more, till ultimately, he fears, he will know nothing about everything."

That, of course, is a case of reductio ad absurdum, but, can one wonder at the conclusion when it is pointed out that the anagram of "ASTRONOMERS" is "NO MORE STARS!"

****

IT'S TIME TO STOP BORING

For program chairmen, Grit Chamber offers time-limit suggestions - some theoretical, some effective, and others of doubtful value. This is done in the interest of promptness among members of a profession who never worry about time when there is a job to be done. Here are some ideas to make speakers clock-watchers:

(1) Use a traffic signal, like the device used in some luncheon clubs, with a red light that goes on when time is up; (2) use a raucous buzzer that goes off at an ordained time, drowning out the dallying speaker; (3) put speakers on-stage with a curtain that is lowered when the time is gone, leaving the slow speaker talking to an unappreciative drape; (4) put speakers over a trap door that will open two minutes after the deadline, guaranteed to get speakers off the program even ahead of schedule; (5) use the India club's idea of making the speaker talk on one foot, with the speech over as soon as the other foot touches the floor; (6) use a bouncer who has the courage, which most chairmen lack, and who will tap the speaker publicly on the shoulder and say, "That's all, brother."

The final suggestion, not previously disclosed to the public, is the dispensing of under-tongue lozenges to every speaker, with the admonition that when the lozenge has dissolved, the speech is over. The lozenges could be made up for 15-minute, 30-minute, and 45-minute dissolving rates for all kinds of speakers.

The idea sounds good for men who take out their watches, place them carefully on the lectern - and proceed to forget them, but a minister failed completely with one of our time-lozenges. Instead of a 15-minute sermon, he talked for over an hour because the lozenge he slipped under his tongue turned out to be a suspender button.

Knowing that all of the above may fail in a pinch, we offer the idea of posting in front of the speaker's stand the succinct motto: "If you fail to strike oil in 30 minutes, it's time to stop boring."

From "The Grit Chamber" in Sewage Works Engineering.

****

DRUM MOUNTAINS METEORITE

A report on the eighth largest meteorite yet found in the United States, a mass of sky iron which weighs 1,164 pounds and whose surface reveals some unusual features, has recently been released by the Smithsonian Institution.

This is the so-called Drum Mountains meteorite from Utah, discovered by chance in 1944 by two Japanese from a nearby relocation center set up for enemy nationals during the war.

These two, Yoshio Nishimoto and Akio Ujihara, were conducting classes in gem cutting for the internees. They were exploring the countryside for materials suitable for classroom demonstration of their art when they came upon a large rock protruding about 2 feet above the ground, the striking appearance of which attracted their attention. Mr. Nishimoto chipped off a piece and sent it to the Smithsonian. The entire object now has been brought here and subjected to chemical and metallographic examination by E. P. Henderson and S. H. Perry of the Smithsonian staff.

Iron meteorites frequently show broad, shallow depressions on their surfaces, which are popularly known as "Thumb marks." This iron has deeper depressions, unrelated to the so-called thumb marks, which have also been observed on some other iron meteorites. They have been previously explained by weathering or rusting out of some constituent after the meteorite landed on this earth or by the burning out of troilite, a sulfide of iron, during the flight of the mass through the earth's atmosphere. Henderson and Perry offer a new interpretation of these deeper depressions, suggesting that they may have been in existence prior to the time the meteorite entered our atmosphere.

The iron was found resting almost entirely on the surface of the ground. L. B. Aldrich, director of the Smithsonian Astrophysical Observatory, estimated that this 1,164-pound meteorite must have had a force of at least 20,000,000 foot-pounds when it struck the earth. There was no evidence of a crater in the formations in which the iron was discovered, and the surface of the meteorite is surprisingly free from any evidence of an impact of this order of magnitude.

A possible explanation is that it fell some distance from the point where it was found, and either bounced or rolled to the place where it finally came to rest. There is also a possibility that the impact with the earth was cushioned by deep snow or loose sand.

From the Smithsonian Institution, October 18, 1948.

****

AMATEUR GEOLOGISTS LEAVE FOR ROCKIES

More than 50 members of the Geological Society of Minnesota set off for Colorado today to prowl the Rockies for anything they could find in the line of gold, uranium or what have you.

The amateur geologists, ranging in age from 21 to 75, and including doctors, lawyers, teachers, and housewives, also expect to turn up some fossils and, in between times, take part in the first annual convention of the American Association of Amateur Geologists.

From the Pioneer Press, June 13, 1948.

****

MIGHTY AGATE VALUABLE FIND

Discovery of a massive agate, definitely gem material in composition and weighing approximately 200 pounds, has been announced by the Deschutes Geology Club. The discovery is believed to be the most important of its kind made in Central Oregon, a region far-famed for its agates, in the past year.

The huge agate was found by Howard H. Jenne, in the Ashwood country of Jefferson County. He described the agate as of the "vug" type, having been formed in a lava cavity. The matrix had weathered away, leaving the large chunk of gem material as float in a creek bed. No other agates were found in the area.

Value of the agate cannot be determined until the large piece is cut, members of the geology club said. They described the material as being some of the most colorful ever found in the area. Several years ago, a chunk of "smoke and fire" agate of similar size, found by C. G. Springer, president of the Deschutes Geology Club, sold for $1000.

From the Oregonian, October 17, 1948.

****

LAVA vs. JAVA

You have heard of the power of suggestion
And how thoughts will go where they are sent -
Just take off in any direction -
Well, this is the way that they went:

Of hot LAVA I thought was made mention,
And straight to conclusions I leap!
I hasten with every intention
Of seeing a seething mass seep,
And rumble, then splutter and bubble
Like a cauldron that must soon over-run;
But all that I got for my trouble
Was a hot flow of JAVA --- and FUN!

Ethel Boyd Wilhelm

****

LUNCHEON NOTES

August 12, 1948

(Editor's note: The notes of this meeting were found on the editor's desk during excavations preparatory to admitting guests to his home. During the same exploratory work a perfectly good check for $11.50, payable to the editor, was also unearthed, carefully dusted off, and later cashed. He hopes that by publicizing the results of some of the excavations on his home location he may interest other members of the Society enough to get occasional voluntary assistance.)

Besides Sylvia Hatfield, a guest of Ruth Dodge, there were several members present who find it impossible to meet with the group regularly. Among these were Dr. E. T. Hodge, Mella White, Clara A. Nelson, Myrtice Fowler, L. Kate Rosa, J. M. Weber, Ferris Weber, Almeda Smith, and Mrs. Arthur C. Jones.....Mella White brought some shells from Sitka, Alaska, and Mrs. Jones brought a Japanese specimen box from Formosa that is used in teaching in secondary schools. The specimens were all labeled with Japanese characters..... Charles W. F. Jacobs, ceramist with

the State Department of Geology and Mineral Industries, was introduced by President F. W. Libbey.....Mr. and Mrs. J. M. Weber have been on the desert near Needles, California.....A paper "Unusual concretions from Templeton, San Luis Obispo County, California," by R. A. Crippen, was shown.....Tom Matthews brought a copy of "Military Engineer" containing an article about the Missouri River Project.

****

"ENCLOSED PLEASE FIND"

This Committee, created by recent events and circumstances, hereby submits its report of its deliberations, judgments, decisions, and performances with proper and appropriate Whereases, Be-It-Resolveds, Wherefores, and Therefores as seen in its judgment relevant and sufficient.

This Committee, sitting in secret session behind closed doors, and proceeding to the deliberation of the first matter properly coming before it in its efforts to fulfill the purposes of its being, finds that

Whereas, the undersigned, whose signature appears below as Chairman of this Committee, has been a member in good standing for the past several years of the Geological Society of the Oregon Country, called by some the "G.S.O.C.", and occasionally dubbed by the flippant and frivolous, "Geesockers," which being interpreted means Geese Scrambling (and scratching and honking and digging and hammering, and rattling and tumbling) Over out-crops, to the amazement and wonder, and often the confusion, consternation, and the annoyance of Good Sober Oregonians and Citizens of other communities adjacent to their peculiar activities; and

Whereas, said member has attended all but a few of the regular meetings of the above-mentioned Society without ever meeting the Treasurer thereof, who is unknown to said member, nor has her presence at such meetings, if any, ever been called to his attention, either officially or unofficially, with the very natural result that his dues in said Society for the year 1948 have not been paid up to the time of the above-mentioned sitting of this Committee; and furthermore, that said member has not by mail, telegraph, special messenger, or any other way remitted said dues to said Treasurer of said Society, with the inevitable result that said member has become delinquent according to the Constitution, Bylaws, and other Rules and Regulations governing dues of members of the aforesaid Society; and

Whereas, there appeared in a recent number of the official organ of the aforesaid Society, a list of the Members thereof for the current year of 1948, and the name of the aforesaid undersigned member was not included in said list, but was quite conspicuous by its absence therefrom, thereby providing the final factor contributing to the utter and complete delinquency of the above-mentioned undersigned unfortunate youth.

Wherefore, Be It Resolved that it is the judgment of this Committee that it jointly and severally views this state of affairs as stated just above, with disapproval and distress, as it is their unanimous judgment that said state of affairs constitutes a grave menace to the peace of the World in which said delinquent lives, moves, and has his being; and

Furthermore, Be It Resolved that this Committee, in sober conference assembled, views with alarm the very imminent possibility that the above-mentioned distressing state of affairs may continue on through the year 1949.

Wherefore, it is the unanimous decision of this Committee that the Executive Branch thereof, at its earliest convenience meet with said delinquent and request and prevail upon him to procure and fill out in proper legal form a U.S. Postal Note for Seven Dollars ($7.00) the same being the amount of dues in said Society for the two years mentioned above, and deliver said U.S. Postal Note to the Chairman of this Committee; and

Wherefore, the Executive Branch reports to the Committee as a whole that said delinquent was very happy to meet with said Executive Branch and promptly and without argument or veto, acceded to all requests in a full and true spirit of amity and cooperation and hastened forthwith to comply therewith; and

Wherefore, the Chairman of this Committee has caused the aforesaid U.S. Postal Note, duly and fully executed, to be attached to and made a part of this report; and

Wherefore, this Committee has decided unanimously that this report with said Postal Note attached shall be mailed, with proper and sufficient postage affixed to the envelope, to Miss Grace Poppleton whose address is Route 1, Oswego, Oregon, who is the Treasurer of the aforesaid Society and living at the above address, according to the October number of the official organ of the Geological Society of the Oregon Country; and

Wherefore, this final action by this Committee as recorded just above shows to the proper officers of said Society that the aforementioned delinquent has complied with all demands of the Society regarding dues of delinquent members, and the Committee hereby requests that the name of said delinquent be restored to the list of members in good standing in said Society for the period beginning March 1, 1948, and ending not earlier than Midnight February 28, 1950; and

Furthermore, that the stigma and humiliation of delinquency of said member be forgotten, and blotted out from the memories of all the other members of the Geological Society of the Oregon Country, official, fully paid up, delinquent, or otherwise;

Therefore, this Committee having considered all matters coming rightly before it, and having fulfilled all purposes for which it was created, and performed all duties and obligations resulting therefrom to the full extent of its abilities hereby requests that it be dissolved and discharged, and be relieved and exempted from any further responsibilities.

Done at the City of Portland, County of Multnomah, State of Oregon, U.S.A., this 12th day of October 1948, A.D., on the last day preceding the celebration of Yom Kippur in the year 5710 of the Jewish calendar, in the year of the Independence of the United States of America the 173rd; and in the year of the founding of the unlovely, uncooperative, unsociable Union of Soviet Socialist Republics the 26th.

/s/ Alva Oakes

****

LUNCHEON NOTES

October 7, 1948

Vice President Leo Simon occupied the chair at this meeting in the dining room of the Chamber of Commerce.....Franklin L. Davis brought a University of Oregon Bulletin "In memory of Thomas Condon, Professor of Geology 1876-1906," June 1907, which the group bought by each member contributing a dime..... Ada Henley had a specimen of apatite.

* * * * *

October 14, 1948

Miss Caroline Rankiellour of Minneapolis was a guest of Miss Margaret Hughes .....H. K. Carruthers brought greetings from the Astronomical Society and an invitation to meet with it on November 5. President F. W. Libbey exhibited specimens brought from Oswego Creek by R. Erickson. He described them as nephrite, melilite, and metamorphic rock changed by hydrothermal action.....May R. Dale's specimens were garnet and garnet schist.....R. Erickson called attention to a report by the Canadian Geological Society on the Turtle Mountain slide which covered a part of the town of Frank, Alberta, and killed about 66 people. This report is contained in Bulletin No. 1211 of the Canadian Government Printing Bureau, Ottawa: Memoir No. 27, Canada Department of Mines, Geological Survey Branch.....Earl Minar showed a fossil from the Wolf Creek Highway, near the tunnel, which he had found on a solo trip that the rest of the Society had decided not to take.

* * * * *

October 21, 1948

Sixteen members of the G.S.O.C. luncheon group met in Room B of the Chamber of Commerce and found the table decorated with greens and pumpkins.....F. W. Libbey presided and exhibited specimens of pegmatite tourmaline and pegmatite quartz..... Ada Henley had a "stalactite" section showing quartz crystals. Carl Richards called attention to a coming meeting of the Astronomical Society at which a film showing the construction of Palomar Observatory was to be shown.....Rudolph Erickson mentioned an interesting article in "Natural History" about continental glaciers.....F. W. Libbey had just returned from Lake County where experiments are in progress with artificial pot holes. So far the artificial pot holes have not filled up with salt deposits as have the natural ones. Many guesses have been made as to the cause of the natural pot holes, but none of them has been generally accepted.

* * * * *

October 28, 1948

Several of our members who can read noticed that the meeting was to be in the main dining room and decided to eat elsewhere, prefering quieter surroundings; but fourteen hardy souls had a peaceful and pleasant session.....F. W. Libbey presided and introduced his guest, Pierre R. Hines, a mining engineer, who told about the lava formations in the Owyhee tunnel, part of which, he said, checked fairly well with the preliminary geological survey and allowed one contractor to make a world's record for speed in tunnelling. Another contractor, however, lost heavily on his section. These flows, Mr. Hines stated, are quite similar to those in the Lake Superior region which yielded great quantities of copper - sometimes a ton or more in a single mass.....Leo Simon had a letter of inquiry about rocks, from a budding scientist in the hills west of Portland.....W. C. Adams had small vials of water said to be from the River Jordan and the Dead Sea, and sand from drill exploration on the Panama Canal. He also reported that Tracy Wade is recovering his sight slowly.....Earl Minar is interested in garnets in ton lots. They are used as abrasives in sand-blasting operations.....E. N. Bates told a hair-raising story of an accident which shortened his vacation by the amount of time that was required to repair his car after it went through a guard fence on the Coast Highway and down a steep embankment following the blow-out of his right front tire. His car stopped only a few inches from a vertical drop. His advice is to have your good tires on the front wheels.

****

GEOLOGICAL NEWS LETTER

OFFICIAL PUBLICATION OF THE

VOL. 15 NO. 12 PORTLAND, OREGON December 1949

GEOLOGICAL NEWS-LETTER
Official Publication of the
Geological Society of the Oregon Country
421 Morgan Bldg. Portland, Oregon
POSTMASTER: Return Postage Guaranteed

THE GEOLOGICAL NEWS LETTER
Official publication of the
GEOLOGICAL SOCIETY OF THE OREGON COUNTRY

****

****

****

MEMBERSHIP APPLICATION
GEOLOGICAL SOCIETY OF THE OREGON COUNTRY

Qualifications and dues:

Applicant must be sponsored by a member and recommended by the Membership Committee. A knowledge of geology is not a requisite. There is no initiation fee. A Member shall be over 21 years of age; a junior member between 18 and 21. A single membership may be held by husband and wife and their children who are under 18 years of age. The dues are $3.50 per year ($1.50 for Junior members), payable in advance, and include one subscription to the Geological NEWS LETTER. Dues of members living in counties not adjacent to Multnomah County are $2.50 per year.

Date _____

I, _____ (please print full name) do hereby apply for membership (junior membership) in the Geological Society of the Oregon Country, subject to the provisions of the By-Laws.

Home address . . . . . .Phone . . . . . .

Business address . . . . . .Phone . . . . . .

Occupation . . . . . Hobbies . . . . . .

I am particularly interested in the following branches of geology: _____

_____ I enclose $_____
for the year's dues, March 1 to March 1. (Checks payable to the Society)

Sponsored by _____
(member)

_____
(signature)

SOCIETY ACTIVITIES

LECTURES: On the second and fourth Fridays of each month in Public Library Hall, S.W. 10th Ave. and Yamhill St. Watch the Oregonian and Oregon Journal for announcements. Meetings start at 8:00 p.m.

TRIPS: An average of one field trip is held each month. For quenstions and suggestions concerning trips call Dr. F. G. Gilchrist, BR 7375.

LUNCHEONS: Every Thursday noon at the Chamber of Commerce, 824 S.W. 5th Avenue between Yamhill and Taylor streets. Luncheon 85 cents.

DECEMBER MEETINGS

Friday Dec. 9 — "Little-Known Places in Eastern Oregon, Including Jordan Valley, Owyhee Mountains, Steens Mountains, Malheur Bird Refuge, Painted Hills, and Northwest Mountain Scenes," illustrated in Kodachrome pictures by Mr. Francis Kies.

Friday Dec.23 — No meeting.

No field trip in December.

CHRISTMAS LETTER

Dear Members:

As the year comes to a close, we pause to reflect on the many scenic and instructive trips and lectures we have enjoyed. I hope all of you have found as much pleasure in the activities and fellowship of the Society as I have.

I therefore wish you a very Merry Christmas and hope you will enjoy a much better New Year.

With a greater geological interest, I am

Sincerely yours,

Leo F. Simon, President

NEWS OF MEMBERS

New Address:

Ellen L. James 383 E. 11th, Apt. 9 Eugene, Oregon

Change of Telephone Number:

Dr. and Mrs. D. E. Weber (new number) KE 7340

****

GEOLOGICAL TRIP UP THE COLUMBIA RIVER GORGE
(CASCADE LOCKS-HOOD RIVER SECTION)
June 26, 1949

By
May R. Dale
(Technical editing by Dr. E. T. Hodge)

Note: All those expecting a technical treatise of our recent geological trip, please do not read the following account. It is strictly "From one amateur to another." After transcribing notes taken on the site while our leader was explaining things to us, my interest was aroused to the point where I read parts of Dr. Hodge's "Geology of the Lower Columbia River (1938)" and Mr. Ira A. Williams' "The Columbia River Gorge - Its Geologic History Interpreted from the Columbia River Highway" (1916), and have used them as references. I am hoping that the more amateurish ones on that trip will get out of this simply worded and elementary account at least as much as I did while I tried to arrange in written form the facts I had learned.

- - - - - - - - - - - -

Leaving the New Journal Building soon after 8 a.m., the group was on its own until we reached Cascade Locks, from which point the official trip would begin and continue to Hood River. This trip was really a continuation of the one up the Gorge as far as the Cascade Locks April 28, 1948, and was to have the same capable leader, Dr. Edwin T. Hodge, Professor of Economic Geology at Oregon State College. It was a grand opportunity to review the geology of the formations already studied, so some members carried for "textbooks" Norris B. Stone's article "Geology of the Columbia River Gorge to Cascade Locks" and Leo F. Simon's "Log on Trip up Columbia Gorge - Portland to Cascade Locks," both articles being published in the June 1949 Geological News Letter. Continuous repetition of facts acts like a "sheep-foot" roller in that after awhile the facts packed in to stay. I know this reporter really appreciated the review she was given.

At Cascade Locks the caravan assembled at 10 a.m. comprising some 19 cars and 60 persons. Dr. Hodge took charge as trip leader and we were soon aware that the theme for today's study would be to refute the arguments that the Columbia is an antecedent stream and to prove that it is a superimposed stream.

Stop I - Cascade Locks

At Cascade Falls the bed of the river is 120 feet below sea level, which depth fluctuates until at The Dalles, it is at sea level.

Before the locks were built, no boat could get through the rapids at this point on the river. These locks were built by Italian laborers out of basalt blocks. This is a very high class piece of masonry. Looking across the river at Green Leaf Mountain, we see black rock on top of gray rock which is commonly called Eagle Creek but which Dr. Hodge says is really Warrendale. This Warrendale formation is made up of ashes, agglomerate tuffs, waterworn sands and gravels, thin coal beds, and clay. Dr. Hodge, tracing this formation to the east, finds it identical with John Day formation and, tracing it to the west, finds it identical with Pittsburg formation (west of St. Helens). Logs and some leaves of gingko and redwood are found in Warrendale formation.

The topography is one of knobs and hollows, commonly called knobs-and-basin; cliffs collapse periodically; large crevasses show land is moving; water marks in pockets mark a slow drainage; farther down there is mud, proving water just recently drying out; still farther down there are standing lakes. Vegetation starts to grow in the lower areas as these pockets hold water.

Dr. Hodge holds to the theory that at one time there was a great landslide at this point. The topography is horseshoe shaped. The landslide was at least $2\frac{1}{2}$ mi. by $2\frac{1}{2}$ mi., and was moving probably at the rate of 1 to 5 feet per hour. It moved right across the river and dammed it. This is probably the origin of the legend of the "Bridge of the Gods." It may have taken only a day or two for the river level to rise and let the waters flow over this dam. The river deposited mud, carried away ash and tuff, leaving big boulders as it cut a channel through. Instead of following the old course, where it was 120 feet below sea level, it cut a new course superimposed on the slope of the south spur. Other men gave up hopes of finding a dam site but Dr. Hodge decided Warrendale formation would make a good site. He found trees 500 years old on the landslide material, straight and strong, proving the stability of the landslide.

Forests in the river east of this point were submerged. This fact was reported by Lewis and Clark in 1805. Upon examination of this wood, it was identified as red oak.

Looking up the river (east) we see Warrendale formation. Warrendale formation is a relatively soft, thick deposit of ashes, agglomerates, tuffs, gravels, thin coal lenses, and some petrified logs. It correlates, according to Hodge, with the John Day formation east of the Cascades and with the marine Pittsburg Bluff formation to the west. At this point of the Gorge the Columbia River basalt, as well as the Warrendale formation under it, dips steeply southward at a rate of about 500 feet per mile. On the north side of the Gorge the basalt lies on the Warrendale formation approximately 2000 feet above the river, while on the south side, 3 miles away, the base of the basalt lies only 500 feet above the river.

Let us stop a minute to review just what the Columbia River basalt is. A general description is quoted here from Dr. Hodge's "Geology of the Lower Columbia River":

> "The Columbia River basalt is, no doubt, the best-known formation in the American Northwest. It was given prominence by the historic essay of LeConte, wherein he says 'In northern California it becomes a flood flowing over and completely mantling the smaller inequalities, and flowing around the greater inequalities of surface, while in northern Oregon and Washington it becomes an absolutely universal flood, beneath which the whole original face of the country, with its hills and dales, mountains and valleys, lies buried several thousand feet. It covers the greater portion of northern California and northwestern Nevada, nearly the whole of Oregon, Washington, and Idaho, and runs far into Montana on the east and British Columbia on the north --- cannot be less than two hundred thousand to three hundred thousand square miles.'"

Now, if the Columbia is an antecedent stream, there was a time when the river was cut down to present level and mountains were high. What made the landslide? As water comes through the softer formation, it is rotted away, becomes slippery, the bentonites weaken, and a river cutting into the formation from below will finally weaken it to the point of collapse. The Eagle Creek formation exposed on the north side of the Gorge from Carson to Prindle, nearly half the length of the Gorge, would have been subject to erosion by an antecedent stream just as soon as

the Columbia River basalt was cut through. As the land rose, more and more of it would have been exposed. Between Stevenson and Skamania, where the Eagle Creek formation forms the entire north wall, erosion would have attacked it during all the time of the Gorge cutting. Consequently, between Carson and Prindle there should now be no Gorge but instead, a wide mature valley, and between Stevenson and Skamania a great lowland. But the name given to this reach of river by all writers is "Columbia Gorge"! The Cascade landslide is the largest of the many landslides in the Gorge. It occurs just where stability of the valley walls should, under the antecedent theory, have been attained during two whole geologic epochs. The conditions for landsliding in the formation are excellent. The bedding has a south dip; most of the beds are exceedingly porous, and between them lies decayed volcanic ash, a bentonitic material that is impervious to water. To the north is a country that receives about 120 inches of rainfall, much of which soaks into the Eagle Creek formation and follows its aquifers southward. The incoherent and unconsolidated character of the formation, the slippery bentonitic beds, and its spongelike character cause it to slide wherever it outcrops along the Gorge.

Dr. Hodge thinks the drowning of the river caused the landslide. Now, if the river had been here since the beginning of time, how long would the cliffs have stood with the land sliding? The river cutting underneath would have weakened them. This valley then should be a mature valley - certainly not a narrow one. No, these slides are young and in process now.

Stop II - Herman Creek Bridge

We see Herman Creek lava flows just south along power line; Carson flow (500 feet high) from north to south. These two rock formations are not alike. The Herman Creek is like Deschutes County lava. It is later than Coriba (Columbia River basalt). Dr. Hodge believes the Herman Creek flow is recent and came down the valley of Herman Creek and out onto the floor of the Columbia River valley, Herman Creek having been diverted behind the tongue of basalt for some distance before emptying into the Columbia. Hodge does not agree with Ira Williams' theory that this basalt flow was an extension of the Carson lavas from the Washington side of the river. See page 917 of Dr. Hodge's "Geology of the Lower Columbia River."

Looking to the south, the massive flows on cliff are Coriba. There were probably hundreds of flows. We can count 15 or more - some thick, some thin. No flow is very long. They dip southeast. These flows are overlain in this locality by a volcanic breccia called, by Williams, the Satsop formation. Hodge, however, believes it belongs to the Rhododendron formation (pre-Cascan). The layer of volcanic breccia is capped by Cascan formation. We find basalt at Bull Run River, not at the Sandy River, but again at the Clackamas River. Cascan would have flowed into the Gorge but there is no Cancan in the Gorge. The river channel is post-Cascan. This is another point to prove the Columbia a superimposed stream. The islands east of Herman Creek are believed to be left by the glaciers which passed right over them.

Stop III - Union

Here we see some smooth rocks - massives, called Union intrusives. More of these on the south side. Coarse grained. Some are rhyolite and are necks of volcanoes. River cuts through Eagle Creek formation, (the oldest formation in the Gorge and is prior to Miocene Coriba). The Eagle Creek formation is composed entirely of volcanic materials such as tuffs, breccias, agglomerates, and lava flows. Of the fragmental materials, the large pieces are angular, and the rounded ones are from half an inch to three inches in diameter.

Wind River runs behind the first row of hills which are the Carson River flow which came down the valley in a NE-SE direction. Wind Mountain, on west side, is an erosional remnant - intrusive diorite. On far side is a sill with columns lying to the north. This sill cuts through Warrendale. It could be a feeder to Cascan. Can see the Warrendale in the background, but hills around are Coriba. There is a series of feeding necks in that area. The power line has moved 3 inches since the earthquake April 13, 1949. Dog Mountain in Washington, another erosional remnant, is Coriba from top to bottom.

Stop IV - Wyeth, 57½ miles from Portland

About a mile up the river we see Shell Mountain - a great conical pile with hundreds of feet of loose, sliding "shell" rock about its lower slopes that reaches to the river's edge. It rises to an elevation of 2,068 feet and on all except the river side is hemmed in with walls of basalt. The "shelling" is caused by the outside crystals being affected by water and changing to hydrated and carbonated crystals which easily break away. Wind Mountain in Washington is directly across the Columbia from Shell Mountain. Ira Williams in an interesting paragraph on pages 97 and 98 sets forth his theory that Shell and Wind mountains were originally one connected rock mass. Mr. Williams mentions the inclusions of pieces of dark basalt in the lighter colored rock near the contact where heavy beds of this lava rest against the steeply sloping sides of Shell Mountain. He uses this fact to support his argument that Shell and Wind mountains represent a connected body of granitoid rock that rose beneath the Coriba and intruded into a yet viscous and yielding hot magma.

Between Dog and Wind mountains there are enormous gravel deposits. A tributary stream would deposit its materials into main stream. But these deposits point upstream. There must have been floods in the Columbia River and they would have turned into the tributary valleys with force enough to change the current of these streams. This accounts for the deposits being upstream.

Stop V - Shell Mountain

Rock is down to river level here. Looking across the river we see a range of hills dipping one way, then the Dog Creek Mountains dipping the opposite direction. Back of the Dog Mountains are the Augspurger Mountains. The Dog Creek anticline is an example of a "textbook" anticline. Real structure is quite steep. Can see the breccia soft beds (not basalt) eroded into pockets. Can see slickenside cracks - close together, dipping south 30° east. Humps and breaks in the slickensides show movement. The whole side has shifted. Underwood Mountain (to the right of Dog Mountain) is andesite. The valley containing Underwood Mountain has flows on top at 500 feet elevation. On the south side of the river are castellated rocks. All these little peaks could be caused by faults. V-shaped valleys prove they are very young. They would be very old valleys if the Columbia were an antecedent stream.

Beginning at Dog Mountain, the topography goes down to a syncline, then comes up abruptly to form the Bingen anticline. The Underwood lava would have flowed down into the valley if the Columbia were an antecedent stream. Between Dog Mountain and Bingen, lies Adams Valley, a shallow, wide trough running at right angles to the Gorge at an elevation of about 500 feet above the river and bisected by the Gorge. This, according to Hodge, is the course of the ancestral Columbia River which flowed across the present site of the Gorge. This valley was later filled with Cascan (younger) lavas and the south end of it was obliterated by the erection of Mt. Hood. It is possible that the Klickitat and other river valleys joined, making one big valley.

Stop VI - Mitchell Point

Mitchell Point is a part of the east limb of the Dog Mountain anticline where Coriba is dipping south and east. One can see gravels in place, of which the larger ones are waterworn. There is evidence that between the flows here and flows on top of Mitchell Point, streams flowed over the country carrying gravel (mainly basalt) and laid it down in the river bed; the river had time to wear the rocks round before the next flow came. Around the next corner we see a small coal bed 2 or 3 inches in thickness which represents 20 to 30 feet of vegetation, and along quiescent period for the coal to form. The next lava flow shows pillow lava. This form is evidence that lava flowed into water or swampy areas; the slickensides prove rocks slipped and polished into flutes. All this part of the country is tilted up. On the north side of the river the steeply dipping Coriba is capped by Underwood lava (Cascan) which flowed across the present Gorge in the old Adams Valley.

Stop VII - Gorge Hotel just by Hood River

All the rocks here are water worn - are andesite, not basalt. If these rocks came from somewhere else, asks Dr. Hodge, why did this flow not go across the river? If Columbia River were antecedent, how could we have these water worn surfaces? The water was up at this level and Dr. H. believes this is the finest evidence of the Columbia River being a superimposed stream. Proves Underwood lavas crossed the river channel at this point. Some of the intra-canyon lavas can be followed for 50 miles.

Stop VIII - one-quarter mile west of town of Hood River

Here are Hood River gravels. In 1925, Bretz theorized that they were the result of the "Spokane Flood." Dr. Hodge takes exception to this. Forty cubic miles of water per day flowing through a canyon 500 feet deep, at 8 miles per hour would still not be able to keep gravel in suspension at such an elevation above the bottom. He rather believes that the Hood River valley was 500 feet higher at one time and, as water cut through, it left the gravels. From this point on there are a hundred miles of basalt not cut by valleys.

Stop IX - East end of Hood River Bridge

The gravels here are Troutdale. They are iron-stained gravels, sprinkled with quartzites, and rest upon a surface of weathered basalt. Could they have been laid down by the Columbia River during the period it was cutting down to a lower level? Buwalda's theory is that they were laid down by the Columbia River on Coriba. Then, when the basalts faulted, the gravels folded up with them. But, Hodge pointed out, the gravels dip north. He believes the gravels are of later origin but advised the group to make up their own minds and suggested a further, intensive study of these gravels be made. He pointed out the view of the Bingen anticline followed by the Mosier syncline.

Stop X - East limb of the Bingen anticline

Dr. Hodge believes river flowed at that high level. Some geologists talk about the great peneplane at this point. Dr. Hodge says "no." Topography proves that theory wrong. Bingen anticline goes down until it meets a syncline trough,

then beds start rising again. One can see several benches or terraces cut in soft filling material in the syncline. The Dalles beds (tuffs) are numerous to the east and prove the Columbia River was a superimposed stream because some of them come right down to the brink of the river. If the Columbia River were an antecedent stream, these Dalles beds would have been cut away long ago. Dr. Hodge believes that The Dalles beds are Pliocene or Pleistocene in age and not folded with the Coriba as thought by Piper. They are mostly unconformable with Coriba. They extend across the Gorge and correlate with the Deschutes beds to the south. The Dalles beds are recognized by their white, ashy appearance.

Stop XI - Rowena Point (Now called Mayer State Park)

The topography at Rowena Point is very ragged and jagged. This is due to the fact that the basalt was plucked out by the water which lifted it up and rolled it along. It marks the place where waters of Pleistocene Lake Condon spilled across The Dalles and Cascan formations and entrenched the present Columbia River Gorge. Ortley anticline and The Dalles syncline are visible to the east. This is further argument to prove Columbia River is superimposed. The Columbia River was dammed, formed a lake, spilled across at this point, flowed at one level for some time until it had cut a channel, then flowed at that level for awhile and so on.

If the Columbia River were an antecedent stream, the Klickitat River must have been flowing into the Columbia River during all of its history. It would have cut a big valley, but we know it has not - it is almost a vertical canyon in some places. The cliffs on the north side of the river go down until they meet The Dalles syncline.

This was the end of the official trip and, although we had spent considerable time in arguing pro and con as to the Columbia River's being a superimposed stream, we all agreed, without argument, that Dr. Hodge had made the geology of this portion of our great river fascinatingly interesting and had given us all much food for further thought.

****

REPORT OF THE NOMINATING COMMITTEE

December 4, 1949

To the President and Members of the
Geological Society of the Oregon Country:

Gentlemen:

Your Nominating Committee hereby submit the following nominations for the officers of the society for the year of 1950:

President -	Dr. Edwin T. Hodge	Treasurer -	Mr. Norris B. Stone
Vice President -	Mr. Ford E. Wilson	Director -	Mr. Louis E. Oberson
Secretary -	Miss Ruby M. Zimmer		

Respectfully,
A. W. Hancock
Ada Henley
Glenna Teeters
A. D. Vance
H. B. Schminky, Chairman

****

MORE ABOUT THE LEBANON ARTIFACTS

Readers will recall mention in last month's News Letter of reference to the recent discovery near Lebanon, Oregon, of a number of stone tools, presumably of Indian origin, which were being examined for authenticity by Dr. John A. Rademaker and Prof. W. Herman Clark of Willamette University. The story was published originally by the Oregon Statesman, of Salem, and was carried also in other newspapers - among them, the Portland Oregonian - as an Associated Press article.

In an endeavor to learn more of this "find," your editor corresponded with Dr. Rademaker, who graciously wrote of the latest developments in this field as follows:

> (Nov. 11, 1949) "... Naturally both Dr. Clark and I were very much interested in finding out as much as possible concerning the nature and the authenticity of the find and so I took the specimens to my friend Dr. L. C. Cressman at the University of Oregon. After a thorough investigation certain peculiar markings were found on the surface of the stone indicating a buffer had been used. Also there were evidence of modern grinding compound found imbedded in the stone. The stone itself was smooth, but had none of the polish of other similar artifacts found in other localities though this may be because of their lack of use.
>
> "On the other hand, the polish on the stones is chiefly made by rubbing in straight lines, while other local artifacts are almost invariably polished by rubbing with a circular motion. While it is possible that the rubbing compound and some of the lines of the grinding process and buffer might have been added recently by the reported discoverers of the objects in cleaning them from their reported matrix, it is unlikely that the original patina would be as loose as the surface-colored material in the crevices of the surface actually is, or the black-colored substance underneath the rubbing compound remains. All we can say for certain is that the articles show definite signs of having been formed or finished on modern mechanical equipment, that there is nothing which would incontestably prove that they are of pre-European culture, that the shape and condition and material of most of the articles precludes their having been made for use or put to any real use, and that the presence of modern grinding compound and straight-line polishing indications would support a hypothesis that they were of very recent origin, and not of Indian manufacture.
>
> "From this evidence it would seem that there is ample room for doubt as to the reliability and authenticity of the find; though nothing final has been determined at this time."

Thanks, Dr. Rademaker, for this up-to-the-minute information, even though it is a little disappointing. Further developments - if there be such - will be received with much interest.

H.H.

****