GEOLOGICAL SOCIETY NEWS LETTER

Volume 12, 1946

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to
GEOLOGICAL NEWS-LETTER
Volume 12
Compiled by John Eliot Allen, and Ewart M. Baldwin

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GEOLOGICAL SOCIETY NEWS LETTER

Volume 12, No. 1 January 1946

SOCIETY ACTIVITIES

LECTURES: On the 2nd and 4th Fridays of each month at the auditorium (third floor) of the Public Service Building, 920 S.W. 6th Avenue at 8:00 p.m.

TRIPS: Watch for announcements of at least one trip each month if the old tires can take it. Make your desires known to trip chairman, H. Bruce Schminky.

LUNCHEONS: Every Thursday noon in the Victory Room of the Winter Garden restaurant, 425 S.W. Taylor St., between S.W. 4th and S.W. 5th Avenues. Luncheon 60¢.

MEETING ANNOUNCEMENTS

Friday Jan.11 — Mr. O.E.Stanley will give one of his color travelogues, this time along the West Coast of Vancouver Island where the Stanleys vacationed last summer. You won't want to miss this one.

Friday Jan.25 — Subject to be announced - watch the local papers for details.

ELECTIONS

The nominating committee has submitted its selection of candidates for G.S.O.C. officers for 1946-47. The slate for which official ballots have been mailed is as follows:

President	John Eliot Allen
Vice President	Raymond L. Baldwin
Secretary	Ada Henley
Treasurer	H. Mildred Stockwell
Director	J. Dean Butler

NEW MEMBER

A single membership was converted to a family membership with the marriage of Miss Helen Rydberg (City Hall - Commissioner of Public Affairs) to Mr. Leo Houen (recent member, also City Hall) on November 17, 1945.

S.S. THOMAS CONDON

Remember the launching? The NEWS - LETTER expects to carry a story soon of the service record of the Thomas Condon.

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MATERIAL

Material for the February and March issues of the NEWS - LETTER is scarce - all contributions gratefully accepted.

Editor.

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EIGHTEEN HUNDRED AND SIXTY-NINE

New Year's Even! Another pearl, the Persians say, has dropped from the horn of Time into the ocean of Eternity. Another wrinkle on the horn of time, say we; and at the thought of horn we seize the 'our glass and turn it up till we see the sugar in the bottom.

'Tis the hour for reflection - with a spoon in it. Let us contemplate the situation. Two hundred miles from a college, steamboat, or a circus. But then we are also remote from the perils of the plague, earthquakes, and the Grecian bend. If we have had some marriages we have also had some divorces, so that a bachelor's chances are the same. If we have had some deaths, there has also been a demand for soothing syrup and peppermint, and if there is a coldness between this city and the Dalles, how can we help it at this season of the Year!

The horn of plenty is poured upon us, the editor is lovely, and all's well! All the year our jail has been tenantless, and no man has been tried in the high court for crime. There is not a Bourbon amongst us and temperance is the rule. There is not a pauper in the county, and our paper is going up to par. Lawyers are retiring in disgust at the prevailing peace, and doctors complain of a chronic state of health. And we know more now than we did before November. Wonderful how fast we learn! We know who will be the next President, and we know better which side of California to bet on now. Again we look at the sugar in the 'our glass, and say, be thankful!

Memory rushes past the old year and turns down the corridors of time. We see plains, sage-bush and alkali. Beyond, a lonely and white-haired man, standing, like a mile-stone, on the road to eternity. Beyond him still, a buxom lass, with face as red as a web-foot apple, a waterfall, sweet pug nose, and ankle like a - oh krickey! we must quit or give up the ghost. And still beyond, school, birch, mud pies, mumble peg, and stolen apples; while far back, dim in the distance, measles, mumps, catmint tea, and paragoric are blended in indistinctness, while sitting on our mother's knee, and merry memory refuses to go farther. Again we shake the sugar!

Let us be thankful. Let us be just. Let us not put wiggle-tails in our milk nor dog's claws in our sausage; let us tell the truth when we can't help it, and not drink dog gnats in our lager, so that when the hand that writes this is still, and the eyes that read this are glazed and looking up at the grass roots on yonder hill, we may have our Happy New Year in the Better Land, where all together we will smile on the troubles of to-day, as we do now over those of the days ere gold had an attraction and birch had lost its terrors.

The cock from his lofty roost calls midnight and 1868 is but a date in history. The merchant will write '68 for a time, when in a study; and ye miner will so date his epistles to his Florence Matilda, and she will read and wonder on what day New Year's comes at Canyon.

Welcome New Year. Very tenderly do we greet you, as a new born babe that comes to us an immigrant across the great plains of eternity. Very tenderly do we greet you, and ask that you give us hope in our hearts, love on our lips, sugar in our - coffee, and spondulicks in our stockings! Selah!

(The City Journal, vol. 1, no. 2, Canyon City, Oregon, January 1, 1869)

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TERTIARY CONIFEROUS WOODS OF WESTERN NORTH AMERICA
(Abstract)

This paper describes 29 fossil coniferous types from western North America, four of which (Ginkgo, Glyptostrobus, Keteleeria, and Pseudolarix) are now confined to the forests of eastern Asia, one of which (Cedrus) is now confined to western Asia, and one of which (Callitris) now characterizes the Atlas mountains of northern Africa. Distribution of the genera named is shown for twelve of the larger or better known localities, and a key to these genera has been evolved. Illustrating the types and the key are to be found 32 photomicrographs, in all three sections, and at various magnifications. A history of fossil wood studies and its peculiar technical vocabulary has been included. The original occurs in Northwest Science for August (vol. 9, no. 3) and November (vol. 9, no. 4) 1945. A limited number of reprints at one dollar each are available from the author, George F. Beck, Central Washington College of Education, Ellensburg, Washington.

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LUNCHEON MEETING THURSDAY - DECEMBER 20, 1945

With the arrival of Dr. Booth the attendance record for the day stands at eighteen, which was good considering weather conditions. Overcoats were indicated in the dining room, but some hardy young males hung theirs on the rack as usual.....Mrs. Rice introduced her daughter Charlene.....F.W.Libbey read a letter from Ray Treasher about the recent meteor seen in Oregon and California. It looks like California is trying to claim this phenomenon for its own..... Dr. Baldwin showed a new geological map of the northwest part of Oregon and Franklin L. Davis took orders for several copies but could not get an additional order for "The Last of the Mountains".....Dr. McHugh passed around a bracelet made of blood agates she had picked up in Utah, and said that some of her friends in Salt Lake City would like to exchange snowflake obsidian for Oregon specimens. She also said that a large meteorite had been recently found in central Utah..... Mrs. Henley, in a very nice way, said "Nuts to you" by passing around a box of "specimens" of sugared walnuts.

O.E.S.

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MARY LOUISE REEVES

Tragedy, swift and terrible, struck the family of our members, Mr. and Mrs. W. A. Reeves of Salem, when their elder daughter, Mary Louise, age 20, was instantly killed in an automobile accident on the evening of December 12th. Miss Reeves, a civilian employee at the Naval Hospital near Corvallis, was returning home, when the car in which she was a passenger collided with another near Camp Adair. The news of her untimely death was a great shock to the community, and the sincere sympathy of our members goes out to her parents.

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Editor's note:

For your information and pleasure we present the story of "Miracle Mountain" which might be combed from the mining and geological literature of any given locality. See page 4.

GEOLOGY OF MIRACLE MOUNTAIN
and
"Rainbow's End" and "Golden Fleece" Mines
by
Pioche Pete, M.A. - (Mineral Analyzer)

Miracle Mountain, elevation 7000 feet above sea level, and a truly monumental mountain, disturbed by the past ice ages, and glacial drifts during thousands upon thousands of years past.

However, in the upheaval period at the close of the Silurian age, and extending far into the Devanian age, this Mountain was created partly by upheaval, and by eruptions through mighty quartz in molten state, with ample evidences this mountain once possessed elevation far greater than the present elevation with summit of conical portions erased by ice floes and erosions to present altitude, it is a "monumental stub" today.

This is, however, evidences of repetition of eruptions as late as the Jorussic age through the ancient quartz ledges.

Located in California, almost on the Oregon State line, and in the heart of the mother lode relative to southwestern and northeastern Oregon, as well as Idaho and southwestern Montana, it is found that this mountain above named, has fissure eruptions from the earth's core, penetrating the mother lode at a considerably more shallow depth than supposed by many, and that much gold, silver, and platinum was by fissure action, erupted at the crater as well as though great "shoots" at depth where highly valuable ore will be found as well as natural "crucibles" (which were made by water-gas, and nitrogen - hydrogen internal explosions) which will be gold filled.

At considerable greater depths will be ore, values beyond expectations, and at these depths, evidences reveal the once existing "dry ice" deposits (carbon dioxide exploded by the atmosphere at earlier ages prior to the upheaval - eruption period) and heat quickly dissolved the "dry ice" leaving a chamber (or chambers) upon which walls, while "sticky hot", were plastered with gold, etc., being carried in fine particles (by escaping heat) thereby arrested when contact of the walls was made.

It was such a chamber at Cripple Creek, Colorado, that yielded $12,000,000.00, from a rather small area.

Like the oil deposits of the United States, the mineral lodes lay in entirely likewise N.E. and S.W. directions, across the continent. Therefore, the Colorado mines are relative to Grass Valley, California, and Lower California, Mexico mining regions, while the lode arising from the Atlantic in South Carolina, extending S.W. through Georgia, and Alabama, where it seemingly "peters out," but science shows this lode strikes the South American continent. The Alaskan lode "Turns" in the Aleutian Islands, and runs westward, where it nears the surface in the Ural Mountains of Russia; it is also relative to African mines as it is the only Lode that "splits."

The natural "pairing" of carbon and hydrogen, has "healed" much of the broken interior of Miracle Mountain, and all rocks of earth almost, are found in metamorphic conglomerate, fused by heat; all igneous rock shows it endured tremendous heat.

There is the presence of natural acids in most all the rocks, and Basaltum will be found fused with most anything in the line of rock.

The chemical story of the rocks, and black magnetite, and Haemotite sands, is too lengthy for this description, but same will carry up to average of more than $200.00, per ton; the ores will vary much at present, near surface, but not so at greater depths. The Red Absinthe sands, almost heavy as gold, have not been assayed, but will "pocket" the same as gold.

The huge quartz ledges have not been tapped sufficiently to gain values, but ledge junctions are in plenty, and true it is, that any thing from any part of the mines will mill gold in both copper color, and bright yellow color. Platinum and silver will also be found, likewise.

There are four mines opened with more to follow, as there is 420 acres in all, or 21 claims; there are five big fissures in all, and many "blows" (now beautiful springs) are numerous. Many shallow pockets of gold are in evidence.

Mt. Shasta, about 75 miles away can be seen, and all the "cracks and crevasses" point toward Shasta.

Plenty of timber, pine and fir, exists, and the spring waters with much chemistry, and radium atoms have great curative powers, neon gas, exists in atmosphere. Therefore, no bacterial will be in evidence. The sun's violet rays are indeed wonderful in summer.

The mines are reached by a new C.C.C. road which can be altered and changed in places, to avoid drifting snows, and in so doing, auto and truck travel can be maintained about seven or eight months a year.

The nearest metropolis is 45 miles distant, and air service can be maintained all year, as the summit of Miracle Mountain will afford a good landing field, when prepared for such, with only a small amount of labor. The summit will be practically void of snow all year due to west winds.

To give all details of a fissure type of mine would require much explanation, but I am able to state this is always the richest type of mine in all the world. However, such type of mine, as all others, will have perplexing problems to solve occasionally, but the engineer with experience combined with learning will usually be victorious.

At depth, water disposal by gravity can be had at approximately 1500 to 2000 feet of workings underground below the summit, providing tunnels are driven outside of the mountain.

* * * * * *

I hear by news that Lanthanium ore worth $7000 per ton has been found by a Mr. X in southern Oregon. I have often heard of Mr. X, and I am inclined to believe this body of Lanthanium ore was found in the Miracle Mountain region as I am able to say we have encountered what I surmised to be such ore which showed up here and there on both "Rainbow's End", and "Golden Fleece" land; without a spectroscope it is difficult to identify ore correctly. I do not surmise that "Lanthanium" would be found elsewhere in Oregon.

P.P.

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BOOK REVIEW

Holmes, Arthur, Principles of Physical Geology, 532 pp., 95 plates, 262 text illustrations. The Ronald Press Co., 15 E. 26th St., New York 10. 1945. $4.50.

This text will be a revelation to the professional who has accustomed himself to the usual "beginning geology" book; and to the amateur who believes that he has gleaned all he can from those books which are within his non-technical grasp. Despite the number of fine books on physical geology which have been published within the last few years, this book excels most of them in one or more of three ways. It is written in the easy conversational style which apparently only the English scientist can attain. This is deceptive in its facility - actually more factual data is contained per paragraph than in most texts per page. Secondly, it is illustrated with abundant new and exciting photographs and diagrams - the illustrations are in large part from continental sources, and are thus new to American eyes. The diagrams are better than the photographs, which are impaired by the poor grade of paper of necessity used, and there are surprisingly few of the old standard diagrams which we have tired of seeing repeated in book after book. Lastly and most important of all, every chapter supplies ideas new to most beginning texts - ideas which heretofore have been unfamiliar or only vaguely familiar to those who were unable to go back to the original literature and dig them out. This book is up to date - in the sense that it discusses clearly and succinctly most of the advances and discoveries made in recent years, whether those ideas have been thoroughly accepted or not. In this sense it is not for "beginners"; it is an advanced text which assumes that the reader will want to know both sides of the arguments in which geologists are involved.

The book is divided into three parts, in a more logical manner than is usually the fashion; Part I, A Preliminary Survey, discusses the shape and relief of the earth, and summarizes the makeup and architectural features of the earth's crust. Part II, External Processes and Their Effects, describes weathering, underground water, river action and erosion, glaciers, wind action, wave action, and the geological activity of life; and Part III, which to the writer is by far the most interesting part of the book, discusses Internal Processes and their Effects, taking up earthquakes, earth movements and mountain building, plateaus and rift valleys, volcanic activity, and continental drift. It is in this last portion that the ability of the English writer to express clearly rather abstract and hypothetical or controversial ideas comes into play, and it is here that the greatest contribution is made by the author.

Just to give an idea of the relatively "unpublicized" aspects of geology which are treated, let us list a few of the subjects covered, picked at random in leafing through the book.

Part I:

The theory of Isostacy, or floating continents.
The "Convection Current" hypothesis of origin of continents.
Cone sheets and ring dikes.
Bathylithic emplacement.
Origin of geologic time names.
Dates in years of geologic time divisions.
Earth movements throughout geologic time.

Part II:

The growth and nature of soils.
Isostatic response to denudation.
Origin of Rainbow Bridge, Utah.
Classification of lake basins.
Dates of various stages of glaciation.
Suggested causes of Ice Ages.
The theory of wave action.
The origin of petroleum, and its concentration.
Discovery and development of oil fields.

Part III:

Mercalli scale of earthquake intensities.
Seismographs and seismic waves.
Structure of the earth's crust, and its deep interior.
Structure and origin of geosynclines and orogenic belts.
The orogenic cycle.
Present day orogenesis.
The cause of mountain building.
The origin of rift valleys, and Great Basin structure.
Chief types of volcanic eruptions.
History of the great volcanoes.
The causes of volcanism.
Various hypotheses of continental drift.
The search for a mechanism to explain drift.

All these, as well as the more commonly known phases of physical geology, are elaborately illustrated, so that even to the "professional" they become more clear and explicit than ever before.

This book is an ideal "refresher" for the professional who has been too long out of school or out of touch with the technical publications, and the amateur who takes pains to master it will be able to discuss physical geology with anyone. Dr. Holmes has made an outstanding contribution, one which well upholds his past reputation as a teacher and writer of scientific prose.

J.E.A.

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THE GEOLOGIST

Down the hill he slowly travels
Nature's problems he unravels
With his Brunton compass and his intellect;
Stopping often madly breaking
Chunks of Gossan, samples taking,
Which he plans to send his boss express, collect.

As he strolls on grimly thinking,
All at once he sees a sprinkling
Of elusive and the much-desired ore.
Then he views the situation
With increasing cogitation
Says, "Now where there's some there surely must be more."

(Continued on page 8)

So, with gloating satisfaction
He goes into rapid action
As he finds a lovely outcrop of the same;
Here is showing of a plenty
Its percentage looks like twenty.
Glancing up he finds he's on a neighbor's claim.

To the property returning,
Weeks and weeks he spends discerning
Faults and noting dikes and sills of andesite,
And then with colored pencils
And assorted draft utensils
Always works upon his maps till late at night.

Drawing in the last intrusion,
Slowly reaching a conclusion,
Says, "I've never done so good a job before.
On my map is every structure,
Every batholith and rupture,
But I wonder where in hell they'll find the ore."

L.H. and W.F.

(From The Explosives Engineer, July-August, 1945)

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LUNCHEON NOTES - THURSDAY, DECEMBER 27, 1945

Must have been the holiday spirit that brought out 31 members and guests. Infrequent attendants included Mrs. Schminky, Mrs. Hancock, Mella White, Ellen James, and Dr. Hodge.....Mr. Hancock presented as his special guest, Prof. Geo.F.Beck of Central Washington College of Education. Prof. Beck had just published an illustrated article on the "Tertiary Coniferous Woods of Western North America" a copy of which was passed around.....Mr. Libbey's guest was Jack McWilliams, geologist with Alcoa Mining Co.....Lloyd Ruff introduced Randall Brown, geologist with the U.S.Engineers, and Mella White presented Vida Hammond, president of the Teachers' Credit Union and a Mazama.....President Hancock did the honors on specimens - fossil seeds and nuts of persimmon, walnut, almond, acorn, and date palm from one of his favorite Clarno beds. This mixture of temperate and tropical forms came from a very rich horizon and from an area of approximately 50 by 100 feet.....Dr. Stevens announced that he would be going to New York shortly to attend the annual meeting of the Am. Soc. of Civil Engineers, and to pass on his presidential cloak. He also reported progress on the Museum.....Dr. Baldwin brought a message from H.B.Wood who with Mrs. Wood expected to leave for Sacramento in a few days where Hi will work with C.P.Holdredge and Ray Treasher for the U.S.Engineers.

A.H.

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GEOLOGICAL SOCIETY NEWS LETTER

Volume 12, No. 2 February 1946

SOCIETY ACTIVITIES

LECTURES: On the 2nd and 4th Fridays of each month at the auditorium (third floor) of the Public Service Building, 920 S.W.6th Ave. at 8:00 p.m.

TRIPS: Watch for announcements of at least one trip each month if the old tires can take it. Make your desires known to trip chairman, H. Bruce Schminky.

LUNCHEONS: Every Thurs. noon in the Victory Room of the Winter Garden restaurant, 425 S.W.Taylor St., between S.W.4th & S.W.5th Aves. Luncheon 60¢.

MEETING ANNOUNCEMENTS

Friday Feb. 8 — Some highlights of Alaskan scenery and climate will be among the points of interest covered by one of our own members, Kenneth N. Phillips, in a talk illustrated with Kodachromes. Ken's assignment on permafrost studies in the far north late last summer furnished the material for this interesting talk. ----- Annual banquet tickets will go on sale after the meeting.

Sunday Feb.10 — WORK NIGHT - With transportation improved and the work load for many eased somewhat, there has been considerable interest shown in the proposal to revive the work-night sessions, at least until the weather permits Sunday field trips. Opening night will be Sunday, Feb. 10th, in the Ruff basement, 3105 N.E. 45th Ave., (corner of Siskiyou) (one block from the Beaumont bus line) 7 to 9 p.m. Open to all members and their invited guests. Cover charge 10¢.

Friday Feb.22 — Annual business meeting after which Geary Kimbrell will show Kodachromes of Lake Chelan, Washington, and of historical points in New York and Washington D.C.

Saturday March 16 — ANNUAL BANQUET - This is the date set for the eleventh annual banquet which will be held in the I.O.O.F. hall, N.E. 17th and Alberta. Time 6:30 P. M. sharp. Price $1.50 per plate. Dinner will be served by the ladies of the Rebecca lodge. The meal will be followed by the installation of Geological Society officers, a talk by past-president Arthur M. Piper on "The Making and the Unmaking of a Geologist," and entertainment by G.S.O.C. talent. Viola Oberson is general chairman and plans are progressing nicely. Mark your calendar now! Ticket sales begin February 8. All reservations must be in by March 11, 1946. See elsewhere in this bulletin for seating arrangement. Leo Simon will handle the reservations - call Leo at BE 0300 or stop at 711 S.W. Ankeny if you are unable to attend the next meeting or any of the luncheons. Toastmaster will be Dr. Arthur Jones.

CORRECTION

The editor's longhand apparently leaves something to be desired - apologies to Mr. and Mrs. Leo Haven for the mis-spelling of their name in the January issue.

CHANGE OF ADDRESS

Mella C. White from 435 to 415 N.E. Laurelhurst Place, Phone EA 8384.
Mrs. William L. Crowe, formerly Lt. Ava Bickner, 1986 Bristol Ave., Stockton, Calif.

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A M Z A B A R R

With appalling suddenness, while walking in his garden on Sunday afternoon, January 20, 1946, death overtook Amza Barr, one of our charter members. Since the very beginning of this Society he had taken a keen interest in its activities and, prior to then, was a member of Dr. Hodge's classes at Lincoln High School. To him this Society's organization gave an added stimulus to his fondness for natural history by throwing open a way for a wider acquaintance with geological knowledge.

Retiring by nature, he shrank from the prominent parts in the Society's work, but could always be relied on to assist in more obscure roles when required. Few members were more consistent in their attendance at lectures and trips than Mr. Barr. Many a time he has tramped through the John Day Country and over the Clarno Hills in search of geological treasures, and the coastal region, too, claimed much of his spare time.

A native of Decatur, Illinois, he lived there until he came to Oregon in 1920, and Portland has been his home ever since. Being a great family man and very devoted to his children, his passing means a great loss to them. Besides his wife, Elizabeth, he is survived by three daughters, one son, and five grandchildren. His genial smile and friendly handclasp will be sadly missed by his fellow members of the G.S.O.C., as well as by a wide circle of friends.

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LUNCHEON NOTES - THURSDAY, NOVEMBER 29, 1945

Three guests, Mr. Ray McKenzie (former member) of San Francisco, Mr. George Linton of the U.S. Army Engineers, and Mr. Martin Hansen of the City Hall, were among the 27 persons present at the weekly luncheon. Two new members, Mrs. Clara M. Warner and Mrs. R. F. Cleveland were welcomed into the group. Mrs. Warner described a locality on the upper McKenzie River above Belknap Springs, where the entire river flows underground for some distance. Trip committee take notice! She also passed around a sample of Hawaiian basalt containing large crystals of olivine. Other specimens were exhibited by Mr. Minar, large thunder egg; Mr. Hancock, Opal Mountain nodule within a nodule; John Allen, pitchstone from the Deschutes River above Maupin. Several photographs of the latter locality, where prospecting for perlite deposits is going on, were also shown. Franklin Davis took orders for framed enlargements of the Thomas Condon portrait (frontispiece of the Two Islands), at $1.10 each. Dr. J. C. Stevens announced that Dr. A. A. Knowlton will give an illustrated lecture on "Atomic Energy" at Library Hall on Saturday, December 15, as the first of the Oregon Museum Foundation lecture series.

J.E.A.

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NEW MEMBER

George V. Elder, 5537 N. Burrage Street, Portland 11, Oregon. Phone MU 7397.

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BIND YOUR BULLETINS

We are now ready to bind the NEWS - LETTERS. The price is the same as last year - 50¢ per copy. There are copies of Volume 10 available at $2.50 each. See Ray Baldwin.

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THE GEOLOGICAL YARDSTICK

by

John Eliot Allen

The yardstick of the geologist is the geologic time scale. Until only a few years ago, its actual length was only guessed at - even now it contains numerous gaps and breaks. As poor a tool as it is, however, it is of utmost importance in nearly all types of geologic work, and anyone interested, even in a cursory way in the geological sciences, must memorize its terms before he can "talk the language."

The time scale in large part has "just growed." Its skeleton was outlined by the pioneers, commencing in 1760, when Ardueno of Italy established that the rocks of the earth could be divided into three major divisions, the Primary (now called Paleozoic); the Secondary (now Mesozoic); and the Tertiary. The Quaternary was added later to this list by Desnoyers, in 1829. The divisions of the Tertiary were established by Lyell in 1833, from the lists of fossils collected by Deshayes in the Paris Basin. Literal translation of the Greek shows that these terms refer to the relative number of the fossils which are comparable to recent species, as follows:

Pliocene: majority-recent
Miocene: minority-recent
Eocene: dawn-recent

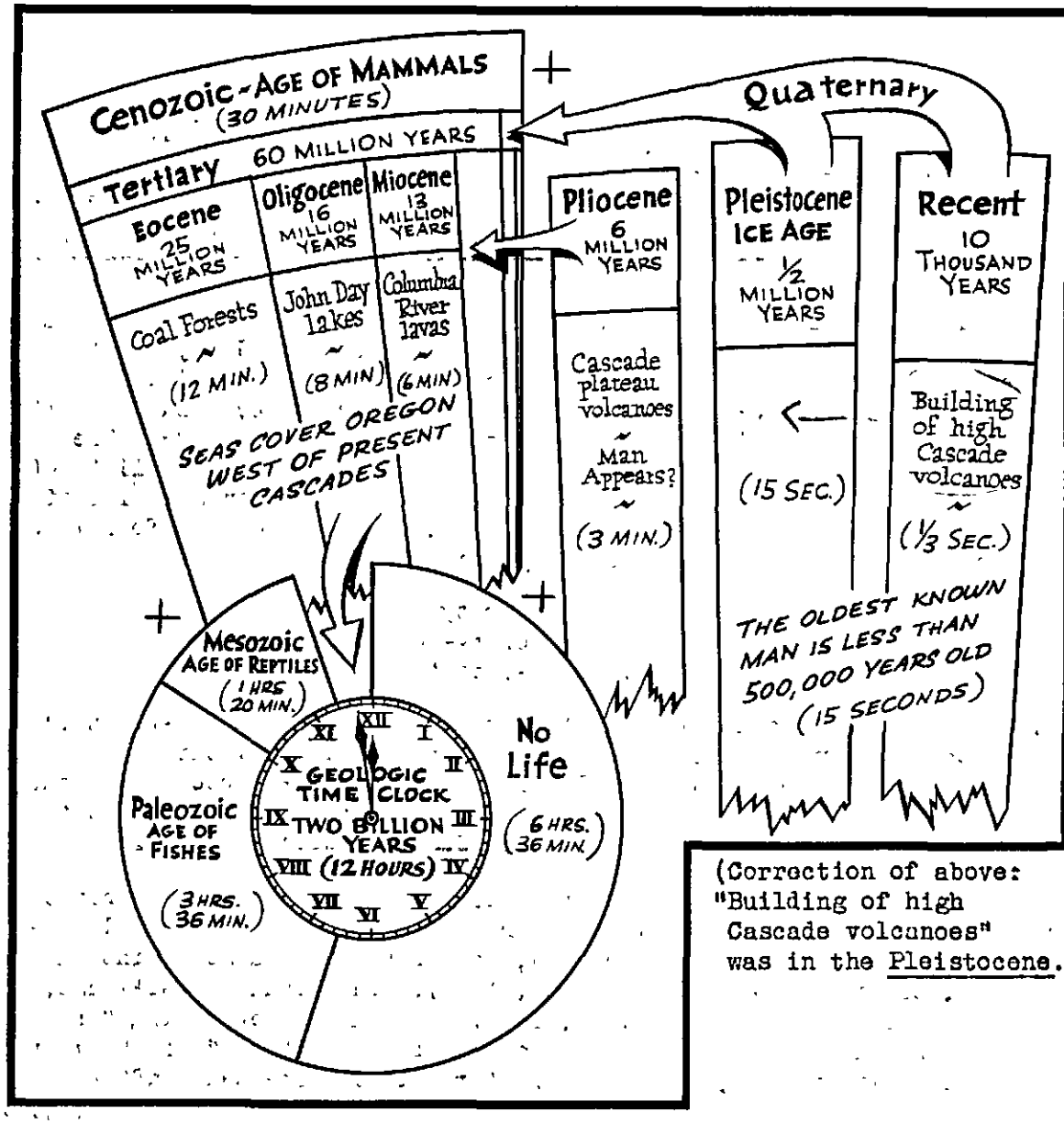
The Oligocene was added in 1854 by Beyrich; meaning "little-recent," and the Pleistocene (most-recent), after several changes in application, was established in its present meaning by Lyell in 1873. The Paleocene (ancient-recent) although introduced as early as 1874, did not attain its present status until 1920 and is still not accepted by the U.S. Geological Survey.

Some of the terms were derived originally from types of rock (Cretaceous: chalklike, 1822); Carboniferous (coal-bearing, 1822); many were named after the areas in which they were first described, as Jurassic (Jura Mountains, Humboldt, 1799); Mississippian (Alexander Winchell, 1869); Pennsylvanian (Williams, 1891); and Devonian (Sedgewick and Murchison, 1839). One method of naming first established in England was using the name of "early inhabitants" of the district. Cambrian and Silurian (Sedgewick and Murchison, 1835) were named after the pre-Roman tribes which inhabited that part of Wales; Ordovician was later (1879) split off from the Silurian by Lapworth, and named after the tribe of Ordovices. Algonkian (Powell, 1890) was named after an Indian tribe in southeastern Canada. Permian was named (Murchison, 1841) after the ancient kingdom of Permia, Russia.

The Triassic (Alberti, 1834) originally was divided into three formations (Bunter sandstone, Muschelkalk, and Keuper), and the three were combined, as the name indicates.

The era terms Cenozoic ("Recent-life"), Mesozoic ("Mediaeval-life"), and Paleozoic ("Ancient-life") were introduced in 1840 by Phillips; Archeozoic ("Primeval-life") was named by Dana in 1872; Proterozoic ("Earlier-life") by Emmons in 1888; and Eozoic ("Dawn-life") by Dawson in 1868.

The listing of the "first introduction" of the various terms gives little idea of the numerous other proposed terms or the often numerous changes in use in them. For instance, numerous authorities, including the U.S. Geological Survey, still use the terms Algonkian and Archean for the two main divisions of the pre-Cambrian.



(Correction of above: "Building of high Cascade volcanoes" was in the Pleistocene.)

The actual length of time in years represented by the geologic time scale and its divisions was discussed and argued for many years, and until the radioactive elements in the rocks were utilized, these calculations varied widely. The present accepted scale was first published by Barrell in 1917. Previous to that time the calculations had been made on several bases, such as the rate of development of life on earth throughout the ages, on the quantity of salt in the seas, on earth temperatures, on the rate of deposition of sediments of various kinds adjusted to the maximum known thicknesses of such sediments on the earth, on the rate of denudation or wearing away of the land, and on the heat delivered by the sun. Nearly all the early estimates were far too short, as judged by the radioactive measurements. The maximum age of the oldest rocks, with one exception, was estimated to be about 100 million years. This discrepancy was probably due to the great gaps in the record represented by the unconformities (periods when the rocks were being eroded).

Figures now more or less accepted by geologists for the age and maximum thicknesses of the various rocks are as follows:

	Feet	Years
Recent	4,000	25,000
Pleistocene		1,000,000
Pliocene	13,000	15,000,000
Miocene	21,000	35,000,000
Oligocene	15,000	50,000,000
Eocene	14,000	70,000,000
Cretaceous	64,000	120,000,000
Jurassic	20,000	150,000,000
Triassic	25,000	190,000,000
Permian	13,000	220,000,000
Carboniferous	40,000	280,000,000
Devonian	37,000	320,000,000
Silurian	15,000	350,000,000
Ordovician	40,000	400,000,000
Cambrian	40,000	500,000,000
Proterozoic	Unknown but at least	1,750,000,000
Archaeozoic	Very great	
Origin of the earth	At least	2,000,000,000

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LUNCHEON NOTES - THURSDAY, DECEMBER 6, 1945

Twenty-four members and two guests were present at the Thursday luncheon this week. One member whom we have recently missed, Florence Iverson (Mrs. Clark) Woodward introduced her mother, Mrs. Iverson. Mrs. Woodward is now living at 1527 Division Street, Bend, Oregon. She reports that the Deschutes Geological Society has been in the wartime doldrums, but hopes to be more active from now on. Franklin Davis introduced Mr. Roy Clark, head of the design branch of the U.S. Army Engineers. No specimens appeared for the first time in many months. Probably the recent "unusual weather" has kept the members out of the field. It was announced that Major and Mrs. Arthur C. Jones and family will return from southern California in time for Christmas. We look forward to having them with us again. Mr. Davis took orders for a new "Chart of the Elements," price 20 cents for the small and 40 cents for the large size. A tremendous amount of information concerning each of the elements is included on one sheet of paper. Lloyd Ruff spoke briefly on the recent attack, by fishing interests, upon the flood control program of the Engineers in the Willamette Valley. Dr. J. C. Stevens discussed the plans and program of the Oregon Museum Foundation, and passed around a pamphlet.

J.E.A.

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LUNCHEON NOTES - THURSDAY, DECEMBER 13, 1945

The big event of the luncheon was the return of Dr. (ex-Major) Arthur Jones from service in Southern California. Dr. Jones appeared as glad to get back as we were to have him back. We are anxious to see Mrs. Jones again, but she was busy directing the movers, who had just brought in the freight.

The big scientific event of the week was the announcement by Mr. Hancock of his discovery of a complete whale head in the beach cliff near Ocean Beach Park. A photograph of the skull in place showed the complete character of the find. The bones will be reconstructed, and this should prove to be an important addition to the story of the Miocene marine life of Oregon.

Another member, returning after 33 months in Louisiana, was Captain Leslie Bartow. Ex-Lieutenant Hiram Woods, appearing for the first time in mufti, introduced Mrs. Woods to the group. Hi is moving south before the first of the year to join the U.S. Army Engineers under Claire Holdredge and Ray Treasher.

Specimens passed around consisted of an agate cast of a small coiled shell, gastropod or cephalopod, from the west side of Imperial Valley, by Dr. Jones; a sample of calcite vein from New Era by Mr. Miller; stilbite crystals by Miss Hughes; and Frazier River (B.C.) jade by Dr. Booth.

Mrs. Cleveland located the McKenzie River underground channel as being located 3 miles below the lowest falls on the McKenzie-Santiam Pass cut-off. Dr. J.C.Stevens spoke on the purposes and plans of the Oregon Museum Foundation. Mr. Bates gave an eyewitness account of the fall of the recent Nevada meteor, as relayed to him by Mrs. Bates. The most impressive features were the green color and the very slow movement of the fire-ball.

J.E.A.

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NEWS NOTE

From the Mazama Bulletin we learn that "Emily Moltzner has sold her business and that after January 1, she will be footloose and fancy-free." She is reported to be in California at the present and intends to settle some place on the Oregon coast eventually.

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HISTORY OF THE LIBERTY SHIP SS THOMAS CONDON

Thomas Condon, pioneer geologist of Oregon, was honored on June 17, 1943, at the launching by the Oregon Shipbuilding Corporation in St. Johns, of a Liberty ship which was given his name.

On June 25, 1943, the SS THOMAS CONDON was delivered to the Alaska Steamship Company of Seattle, Washington, for operation. Capt. A. W. Howgate was given command. His bridge officers were Mr. Arnold Eastman, 1st Officer, Mr. C. O. Anvik, 2nd Officer, and Mr. M. A. O'Donnell, 3rd Officer. On June 26, 1943, the ship left the Columbia River in ballast for Seattle to go on loading berth, arriving in Seattle June 27, 1943. The ship averaged 13 knots from Portland to Seattle. Capt. Howgate was very much impressed with this speed from so large a ship, with her very moderate horsepower.

The ship went on loading berth in Seattle on June 29, 1943, taking a capacity load for Aleutian Bases, and leaving Seattle July 7, 1943. She arrived in Dutch Harbor on the morning of July 13th, after averaging 12.2 knots per hour, a very remarkable speed for a deep-loaded ship of low power. After discharging part of her cargo there, she proceeded to Adak and Amchitka, then back to Seattle via Dutch Harbor. While in Adak, the crew of the CONDON saw most of the fleet of ships assembled for the Kiska invasion. The ship arrived back in Seattle on August 23, 1943. She performed very well at all times and seemed to be a bit faster than the average Liberty ship.

The CONDON made one more voyage to the Aleutians, then on her third voyage which started January 5, 1944, went to the South Pacific, calling at Noumea in New Caledonia, Esperitu Santos in the New Hebrides, Guadalcanal, Suva, Fiji, back up to Guadalcanal, Tulage, the Russells, Los Negros, and many other Island bases, returning to San Francisco on July 4, 1944. On arrival in San Francisco, Capt. Howgate was relieved by Capt. John O. Sellevold. On her next voyage, No. 4, she went to Calcutta by way of Freemantle, Australia. From Calcutta she returned to Freemantle and Port Kembla, Australia, thence San Pedro via the Society Islands, ending Voyage 4 on December 28, 1944.

On Voyage 5, the CONDON left Long Beach, California, January 20, 1945, for Calcutta, proceeding on around the world calling at Columbo, Kvilthattham, Cochin, Aden, Suez, Port Said, Oran, and arriving in Wilmington, Delaware, on June 2, 1945.

Her next voyage, No. 6, was under the command of Capt. V. P. Seidelhuber, leaving the Atlantic Coast the latter part of June for Italy with a full load of coal. She was loaded in Italy for S.W.Pacific, and upon arrival in Manila it was found that the cargo was not needed, whereupon the vessel was turned around and at present time is bound for New York.

The SS THOMAS CONDON was never in any action, and experienced no more than her share of bad weather.

S.E.S.

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NEWS NOTES

The Leslie Bartows are at home again at 6515 S.W. Burlingame, Zone 1.

Carol Ann Schminky was awarded the McArthur medal of the National Victory Garden Institute for her entries in the boys and girls Green Thumb Victory Gardening Contest.

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LUNCHEON NOTES - THURSDAY, JANUARY 3, 1946

No guests and not many specimens on this variable winter day - the food, however, we would say was excellent. President Hancock seems to be the only one who gets around to collect specimens. He passed around a small piece of rock with some objects closely resembling very small bird eggs in it, which he gathered in the John Day country while on the pretense of visiting his brother. Incidentally he collected another skull from Turtle Cove and swears that hereafter he will either stick to the pavements or tour the Antelope-Fossil section of the country in the summer time.....Dr. Adams dropped in late to join the after-lunch discussion..... Dr. J.C.Stevens announced that Viola Oberson was now serving as assistant to the president of the Oregon Museum Foundation, Inc., which has an office in 408 Selling Building..... Mr. Stanley had been "excavating" in his basement and discovered a box which contained, not rocks but a Garden Magazine of 1926 vintage, plus several empty seed pockets, all of which had been mutilated by mice - all except the radishes. Conclusion; perhaps mice don't like radish seeds.

L.L.R.

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LUNCHEON NOTES - THURSDAY, JANUARY 17, 1946

An attendance of 25, was presided over by Vice-President Libbey, who was summoned to the chair in the absence of President Hancock. The specimens shown were many and varied, in contrast to last week when not one was produced. An attractive-looking opal was exhibited by Leo Simon, obtained from an ex-service man, a former member of this Society, he said, who secured it from the White Cliff Mines in Australia. This member, says Mr. Simon, may be a future speaker at one of our lectures. A fossil, unclassified, was brought by Mr. Minar, and another, named by John Allen as an Anadara, by Mrs. Warner, the latter having been unearthed by a steam shovel near North Bend. A bit of green jasper from the Wallowa Mountains was shown by Dr. Baldwin, and by Mr. Bartow, a chunk of calcite sandstone which he had found in the housing department of Richardson's Court, having been embedded in a piece of coal. A specimen of epidote crystals from Arizona was shown by Miss Henley..... "Oil in Your Future" is the title of an illustrated booklet circulated by Franklin Davis, for which orders were taken, without charge. .....Ray Baldwin announced that on January 24 at 7:00 p.m., Upton Close would be on the air again, "telling the truth." And speaking of radio, Dr. J.C.Stevens, says Mrs. Oberson, will be interviewed on the Northwest Neighbors program Feb. 6, on the subject of the Oregon Museum. Another item of interest is that Mr. Hancock has over ten thousand specimens in his collection, which is visited on an average by more than 100 people every week..... The Salem Geological Society is making a field trip to the coal mines at Wilhoit Springs Sunday afternoon at 2:00 p.m., and extended the members of this Society, through John Allen by long distance, to organize a similar trip and join them..... Bruce Schminky called attention to a recent article in the Science News Letter saying that it is now the consensus of opinion that the famous meteoric crater in Arizona is in reality of volcanic origin; upon which Dr. John Allen remarked that it is not the consensus of opinion, but highly controversial! .....Mrs. Oberson read a letter from her cousin in Belgium placing on the German people as a whole the responsibility for the atrocities and warlike acts in the recent and other past wars, and protesting against the impossibility of judging the situation fairly from so great a distance.

A.H.

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GEOLOGICAL SOCIETY OF THE OREGON COUNTRY

1946 Annual Banquet

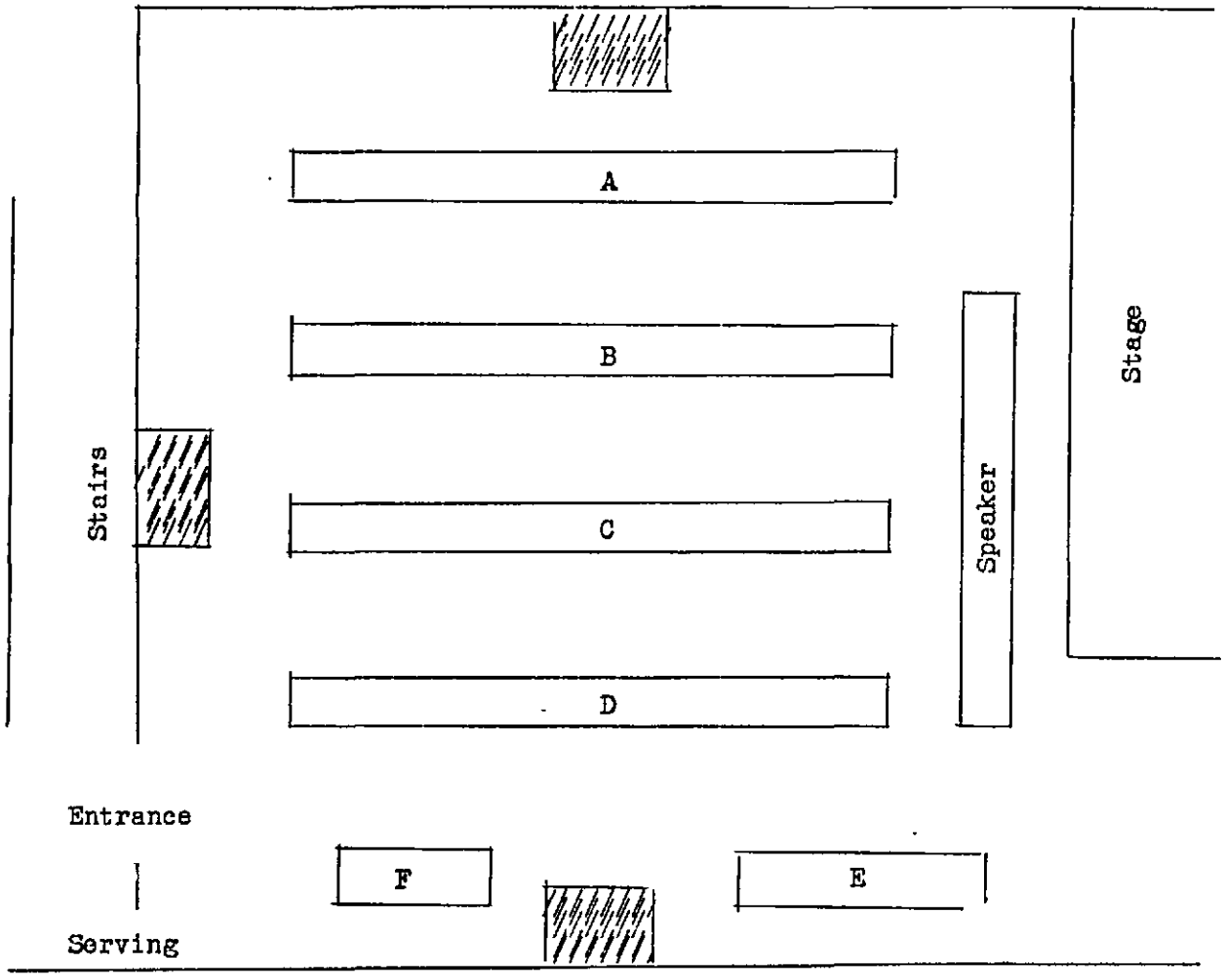
Seating Chart

Tables will be lettered as shown on the chart.

Seats will be numbered from 1 to 40 around the table in a clockwise direction, with number 1 at the end towards the speaker's table, on tables A, B, C, and D. Table E will seat 20 and table F will seat 10.

All seats will be reserved. Call or see Leo Simon, 711 S.W. Ankeny St., Phone BE 0300, after February 8.

Remember that last year's banquet was a sellout, and make your reservations early. Maximum is 190 seats.



GEOLOGICAL SOCIETY NEWS LETTER

Volume 12, No. 3 March 1946

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TRIPS: Watch for announcements of at least one trip each month if the old tires can take it. Make your desires known to trip chairman, H. Bruce Schminky.

LUNCHEONS: Every Thursday noon in the Victory Room of the Winter Garden restaurant, 425 S.W. Taylor Street, between S.W. 4th and S.W. 5th Avenues. Luncheon 60¢.

MEETING ANNOUNCEMENTS

Friday Mar. 8 — "Oregon's High Cascades in Color," by Dr. Bernard N. Montgomery, Central Presbyterian Church. Dr. Montgomery is a well-known speaker, outdoor man, and hobbyist and his pictures are some of the finest available.

Saturday Mar. 16 — G.S.O.C. Annual Banquet! No one misses this.

Place: I.O.O.F. Hall, N.E. 17th Ave. and Alberta St.
Time: Dinner will be served promptly at 6:30 p.m. Come early and find your places. Last year's cooperation was splendid.
Speaker: Arthur M. Piper, U.S. Geological Survey, on "The Making and Unmaking of a Geologist."
Toastmaster: Dr. Arthur C. Jones.
Stunts: Mrs. Mildred James will see to that.
Tickets: By reservation, Leo Simon, 711 S.W.Ankeny Street, BE 0300, on or before March 11, 1946.

Food! Facts! Frivolity! See you on the 16th.

Friday Apr.12 — Dr. Ira S. Allison has just recently returned from England and has promised to tell something of the geology of that part of the world. Watch for further announcement in the April NEWS - LETTER.

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NEWEST MEMBER

Mr. and Mrs. Louis Oberson have announced the addition of Mary Louise Oberson to their family. Mary Louise will be one month old on March 7, 1946.

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NEW MEMBERS

Mr. and Mrs. William L. Borthwick, 3321 N.E. Irving Street, Portland 13, Phone TR 5689

Mr. Russell R. Norton, Box 326, Wecoma, Oregon.

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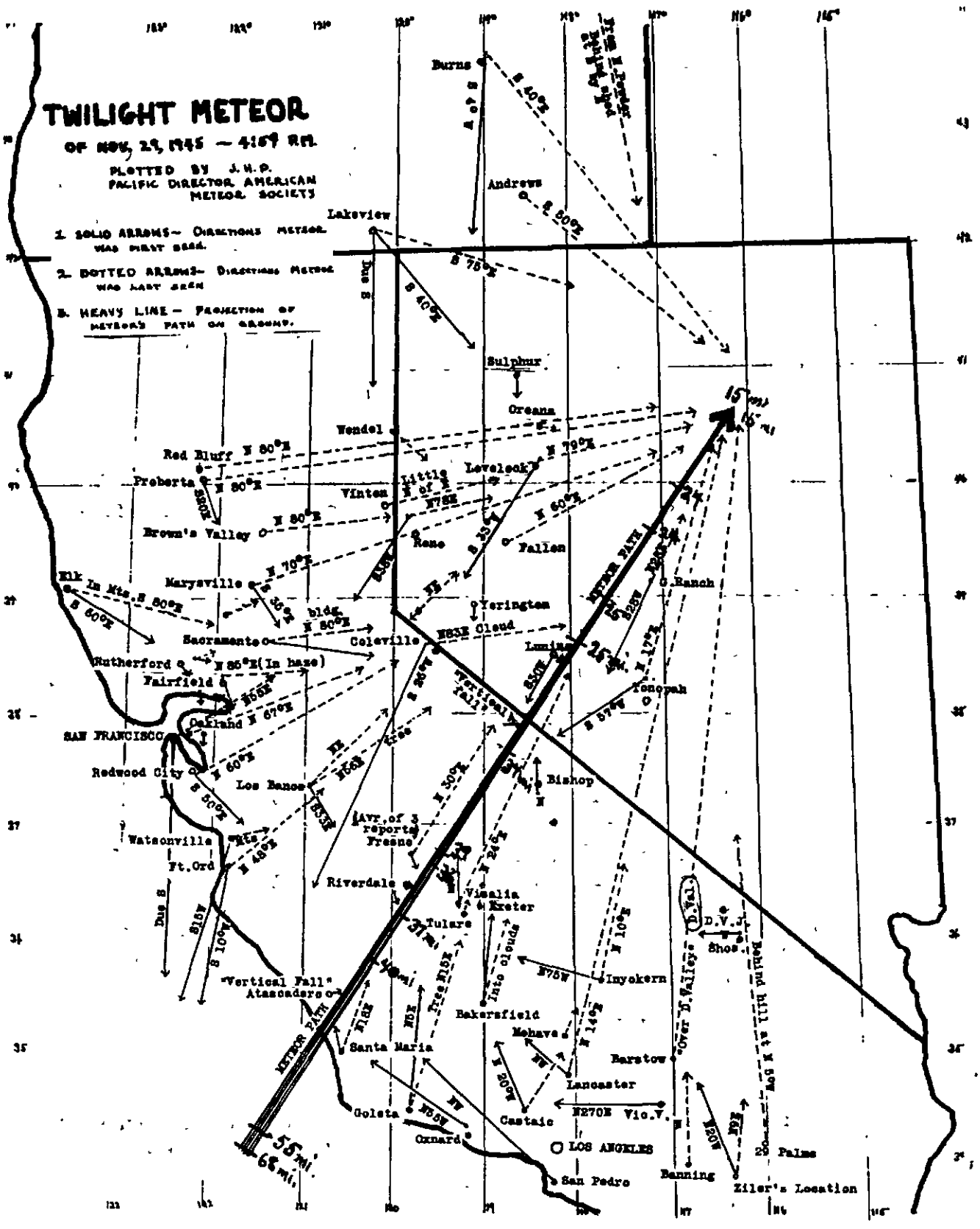

Plotting map for determining the course of the Twilight Meteor of 4:59 P.M. Nov. 29, 1945. The numbers beside the cross marks on the arrow indicating the path, show the height of the fireball above the ground at these places as calculated from the more carefully measured angles of altitude from widely separated localities. For example, the solid arrow from Redwood City runs toward the 40-mile height. The observer there, Mr. Matthews of Stanford University, measured his angle of elevation as 14° when he first caught sight of the object in that direction. By means of this angle, his distance to the path, and a correction for the curvature of the earth, we get the height of 40.25 miles.

THE TWILIGHT METEOR OF NOVEMBER 29, 1945

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

At 10:00 p.m., November 29, 1945, the Richfield radio reporter was excitedly telling about a strange, rapidly moving light seen in the California skies earlier in the evening. It had been sighted from several air fields and a weather-bureau station. Some thought a plane had fallen in flames or that a flare had been dropped. But it had been observed from widely separated localities. Someone had ventured the suggestion that it might possibly have been a meteor.

The next morning the newspapers in the territory concerned - which seemed to be most of California and Nevada - carried accounts, some quite lengthy. Practically all the Pacific Coast radio stations made a great deal of it. Sam Hayes placed it first on his 7:45 a.m. news cast. Overnight, all had become reconciled to the meteoric theory.

Those unfamiliar with the usual habits of fireballs might have gleaned a bit of false information from the statement of one radio announcer. He said with seeming authority, "Prof. G. B. Blair, astronomer at the University of Nevada, has reported that the meteor finally arrived over his state at 10:00 p.m., five hours after it was first seen over California." Truly, a deliberate meteor! But the professor is surely completely absolved of any gross ignorance or false propaganda by all who know the ways of fireballs - and some news reporters.

At once steps were taken to obtain definite information on the celestial visitor, so that scientific studies might be made. Professor Blair asked, through the press, that witnesses of the meteor's flight send first-hand accounts to him. Prof. Earle G. Linsley, astronomer at Chabot Observatory in Oakland, invited reports through the papers of the Bay Region. Similar requests were made for the American Meteor Society by Dr. Henry Power of Palo Alto, assistant director for Northern California, and John D. Buddhue, assistant director for Southern California, through the San Francisco Chronicle and the Los Angeles Times, long considered the official newspaper representatives of the society in this state. The Portland Oregonian and the Salt Lake Deseret News also ran requests.

Soon letters began to pour in. To Professor Linsley goes the honor of being the champion "data-collector." He received 216 reports. Those collected through all the appeals mentioned above finally reached the present writer for study and an attempted solution of the fireball's activities. This is the twentieth big meteor over the far western states to be studied from the letters of untrained observers during the 14 years the A.M.S. has been active in this region. The largest number of reports ever received on any one of the previous 19 was 117. When the count was completed in this latest case, there were 517 "first reports" in writing. In addition, the California and Nevada scientists mentioned above received dozens of telephone calls. Dr. Power reports that several enthusiastic observers made personal calls at his home.

Those observers who are unfamiliar with fireball-tracing (usually about 100 percent of them) seldom give in their letters the data most desired for determining the path, height, and possible landing place of unburned fragments. The general appearance, color, apparent size, and estimated height (in feet) are well discussed. Many confidently name the "place of fall." Some who are inclined toward briefness may merely say, "I saw your meteor and it was going like the mischief." The things we most desire, altitudes and azimuths (in degrees) of the beginning and ending points, are seldom given. There were hardly

more than half a dozen out of the 517 reports in the present study which gave the desired data. This is not meant as a criticism, for practically all who write have no idea what we really need, even should the papers mention angular measurements. It is a great favor that they take time to write at all.

Once we have the names and addresses of a large number of observers, we can usually select several whose letters indicate that they are able to give further helpful data. A formal, printed questionnaire alone will bring additional information from a few, but many will become so puzzled - possibly frightened - by the sight of two dozen questions and the mention of degrees that they will give up in despair and never be heard from again. My own experience has been that a personal letter with explanations accompanying the printed form is the best "persuader" of a reply. The long forms such as the A.M.S. Bulletins Nos. 13 or 16 bring excellent results without explanations when sent to weather-bureau officials, forestry men, civil engineers, and high school instructors in physics and mathematics. Other simpler and shorter forms are more effective with many others.

Usually we avoid wasting questionnaires on those in moving vehicles who are in unfamiliar surroundings. Their ideas of directions are naturally very uncertain. An observer at home can often give splendid data without knowing it. At Lancaster, William P. George, looking through a north window of his house, saw the fireball seem to land "In Dry Lake four miles east of Rosamond." Measurement on a good map gives this disappearance direction as N. 14° E. No "second report" from him was needed.

Out of the large number of original writers, questionnaires of some sort were sent to 56. Professor Blair also conducted "follow-up" correspondence with many who first reported to him. He showed great persistence in getting desired information from observers. Practically all the good disappearance lines originating in Nevada are the result of his work. A midwestern meteor-tracer once wrote in Popular Astronomy that only a few of the questionnaires will ever come back. Perhaps we have a more cordial bunch of correspondents in the Far West, for at this writing exactly 75 percent of the 56 sent out by me have been filled and returned. The data on many of these are from transit readings or compass bearings. Mrs. Pearl Smith, mathematics instructor at the Los Banos high school, got an experienced surveyor to take his transit to the homes of two of her pupils, nearly two miles apart, and measure angles of altitude and azimuth.

Many who merely estimated directions turned in figures that were very helpful. Evaluations of angular heights by estimation are usually too high. In an Oregon fireball-tracing a year ago, an engineering professor at the State College reported a disappearance seen through the window of his home. Later, after using his transit and filling out "No. 13", he wrote, "I am greatly surprised that this 7° altitude is only about half of what I had previously estimated it to be."

Now for the recent Twilight Meteor itself. The time of its appearance was only a little after sunset. Various time estimates ran from 4:30 to 5:30. The majority said, "About five o'clock." One woman said that the five o'clock whistle blew while she was still excited over the phenomenon. Several who seemed most certain wrote, "It was exactly 4:59 p.m."

There was considerable disagreement over the duration of the fireball's visibility. Many saw only the last of the fiery flight so reported one, two, or a few more seconds. But those who were facing in its direction when it flared into luminosity were all greatly puzzled by its persistence. "It just went on and on."

Several said that it lasted for 25 or 30 seconds. One even raised this to 90. Even the more conservative estimated 12, 15, or 20 seconds. A few were able to get others to step out of buildings to view it. A woman driving her automobile saw the body as she entered the north end of the Stanford viaduct. When she emerged from the south end it was still in view. Many told of stopping their cars and getting out for better views.

Let us define two terms, meteorite and meteor, according to the usage suggested some time ago by Dr. Frederick C. Leonard of the University of California at Los Angeles. A meteorite is the solid piece of stone or metal which comes from somewhere in the depths of interplanetary or interstellar space, enters the earth's atmosphere at a relatively high speed, is heated to incandescence by friction with the air, and - in some cases - may finally reach the ground before being entirely consumed. The term therefore applies to the material substance concerned, whether it is outside the earth's airy covering and nonluminous, flying through the air with its surface highly heated, or finally resting on the earth or embedded in it. A meteor is simply the luminous phenomenon of a meteorite in flight. On November 29, the observers saw a meteor. We hope part of the meteorite may sometime also be seen.

When considering the sun as the reference point, meteorites approaching the earth may have any one of various speeds. The average of those appearing at random (not connected with periodic showers) seems to be between 40 and 50 miles per second. Some have greater speed than this; others, even less than the orbital speed of the earth, 18.5 miles per second. One of the very slow ones following behind the earth could not catch up with it. In any case, the apparent speed as seen from the earth would be a combination of the earth's and the meteorite's speeds. If the latter is overtaking the earth it will generally be a relatively slow one; if going in the opposite direction, a fast one. An analogy is found in automobiles passing or meeting the one in which we are riding.

By using a globe, one can easily show that meteors seen moving eastward at midnight or near that time will appear very slow. I was so fortunate as to observe the Lazy Meteor of April 17, 1934. Very little motion was noted when it appeared low in the west. The big red fireball was very unhurried even when crossing the meridian high in the south. Then as it neared its disappearance point low in the southeast, it again seemed to slow almost to a standstill. A woman reporting on it remarked, "It seemed to be about out of gas." In marked contrast was the Great Alberta Meteor of a month earlier (March 18, 1934) which, going westward at about the same hour, blazed and thundered across Saskatchewan and Alberta with intense blue-white brilliance and great apparent speed. Both descended at very gentle slopes.

Again using a globe, we can show that in our part of the world a meteor seen moving northward around 6:00 p.m. the last of September has a very large component of its motion in the direction of the earth's orbital motion. The object is therefore catching up with the earth and will in general appear to be slow. Let its speed be 40 miles per second. Then if it is going exactly in the direction of the earth's motion and over a place where it is moving parallel to the surface (as in Canada), its apparent speed will be 40 minus 18.5, or 21.5 miles per second. The Twilight Meteor of November 29, 1945, had a considerable component in this orbital direction, although not as great as at the time of the autumnal equinox.

The appearance and action of the meteor surprised almost all observers. Many said that it was as large as the moon. A man right under it said, "Three times the size of the moon." Most of the reports came from those who were at a considerable

distance from the "ground-path," the line on the earth directly under the real path in the air. By the dozens they wrote, "The meteor seemed to have almost a level path and hardly lost altitude at all." But the few who were almost under the flight remarked that "it seemed to fall straight down," or "the fall was vertical," or "approached the horizon at 90^0 angle." Such were the impressions of Bryant Willson at Atascadero, Frank J. Irving at "A" on the map, and Robt. E. Benson, a Los Angeles civil engineer who observed at Fresno.

Although many realized the nature of the strange sight, fully as many were thoroughly puzzled. Probably most of the latter mistook it for an ordinary airplane on fire. Patrick McMahon of San Francisco heard a man remark,"Boy, that fellow is going so fast his taillights can't keep up with him." Several were sure it was a jet-propelled plane. Others took it for a flaming rocket-bomb. A few said that their first thought was, "An atomic bomb!" A woman wrote that she was so gripped with fear that she prayed for safety.

Near Lovelock, Nevada, Carl Olsen's energetic farm dog "that chases crows and airplanes - but not autos - sighted the thing and took out across the field after it." A California observer saw it disappear behind a big white cloud, then "in a second or two" reappear on the opposite side. Another, much farther from it, saw it execute the same feat with the top of a distant mountain. One wrote, "That it was a celestial rather than a mundane thing is preposterous." He was sure it was a Hollywood publicity stunt, and that the "follow-up" in the San Francisco papers the next day was "purely an advertising scheme."

Detailed descriptions of the meteor's appearance came in abundance. Blue-green was the color most generally mentioned. But orange and yellow found adherents. Those who saw the last of it said that it turned red. Many said that at one time two large pieces were following behind the main body. Numerous reports indicated that it was constantly disintegrating, with flaming pieces breaking loose and attempting for a second to keep up with the procession. "Sparks were flying." "Detached pieces had green tails like the parent body." "It was a flaming, green monster." "Cigar-shaped with tail of red and yellow flecks." "Ten pieces fell off in midflight." "Burned furiously with blue-green flame with small red pieces in its wake." "Kept dropping pieces of its substance." "Bluish green with eel-like tail." "Looked like a big star and had points just like a star." "Looked like a green irridescent fish." "Like a pollywog going through the sky, it looked nebulous and slimy."

One man viewed the phenomenon under rather adverse circumstances. He had "only shortly before been falsely arrested," and at the time of his observation was "being held" by three burly policemen. But his scientific spirit was undaunted by mere terrestrial inconveniences, for when released from jail the next day he wrote a full account of his impressions of the celestial fireworks.

Those of esthetic inclinations saw in our Twilight Meteor a sight of rare beauty. Jan Hujawa of San Francisco, executive secretary of the Poets of the Pacific, wrote, "It was color in action, presenting transitions of the starlight into red and green and violet with rainbow tints along the edges. No man-made light could have shown up that way in sun-illuminated space or in a sky at sunset time. It was a beautiful and memorable sight." In similar vein, Mrs.Gertrude Donner of Napa, California, ended her description with, "This meteor was a sight of beauty, long to be treasured in memory's chest."

In tracing any fireball, we find large numbers of persons, some hundreds of miles apart, who are sure that the object was a local phenomenon, and fell not far from them. The desired information is often delayed until the "tracer" can

overcome this belief in proximity. The one who is sure it fell "among the trees on the hilltop" sees no sense in the talk of "long-distance lines of sight." He is certain he can take the investigators "right to the spot." One man who saw the Twilight Meteor when many miles from home was sure that the one the folks at home saw could not possibly have been the one he witnessed. In the present investigation many said that it was a few thousand feet from them and landed less than three miles from them. Several offered to help scientists look for remnants. But any scientist accepting all these offers will find himself tramping over most of California and parts of Nevada. Meteors are most deceiving objects.

Two Californians swung to the other extreme and took a "long view" of end-points. One was sure that the meteorite landed in Canada. The other was very doubtful that it stopped before reaching the desolate steppes of Siberia. Whatever their views, all seemed sincere in their desire to help.

Two reporters stated that from the actions of the fiery visitor they believed that it did not come to earth at all, but finally left our atmosphere and escaped into space. In Dr. Olivier's book, Meteors, the statement is made that in a few cases there seems to be reason for this opinion. There may be some sort of ricocheting of irregular-shaped meteorites. Several stated that the Twilight Meteor seemed to be in violent rotation.

Most observers reported that no sound was heard, but several a long distance from the path mentioned a "swishing" while the meteor was in flight. Those who have had experience in tracing fireballs are quite accustomed to such reports, and usually consider them "psychological sounds," which develop in the minds of the observers some time after viewing the phenomenon. They believe that they actually heard a skyrocket swish. Dr. H. H. Nininger has suggested that there may be some sort of radiations transmitted at the speed of light which (perhaps through transformations) are detected by some ears. We will recall that light travels 186,000 miles in one second, while sound in air requires approximately five seconds to go one mile.

There were two reports of what seem to have been true meteoric sounds, however. Frank Irving, 40 miles north of Bishop (A on the map), said, "As nearly as I can calculate, it was between 70 and 90 seconds when the sound of an explosion reached me; something like a dynamite blast." (Mr. Irving stated that as the fireball neared its disappearance, it seemed almost stationary. From the tracing map it is seen that the fireball was then moving almost in his line of sight.) The other was reported by E. C. Ferguson from Gendron Ranch north of Tonopah. Two of his men saw the meteor and "after it passed they heard a long sound as of blasting or thunder, which ended in a louder sound." Mr. Ferguson saw the meteor when riding in a car 12 miles north of Tonopah but considered the noise of the auto prevented his hearing any sound.

(To be continued)

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NEWS OF MEMBERS

Dr. J.C.Stevens makes lots of news these days and incidentally gets around the country a bit. After attending the 93rd annual meeting of the American Society of Civil Engineers in New York January 16 to 19, and relinquishing the presidency thereto, he was back in Portland to attend the 17th annual meeting of the Professional Engineers of Oregon, and receive an honorary membership in that organization. Dr. Stevens was first president of the Professional Engineers and already a life member. "J.C." also appeared on the Northwest Neighbors radio program February 6 in behalf of the Oregon Museum Foundation and was interviewed on some of the outstanding collections in Portland. Those mentioned were Henry L. Corbett; Dr. H.C.Dake, minerals; Stanley Jewett, wild life; A.W.Hancock, fossils; Tom Carney, crystals; and Dr.C.L.Booth, fluorescent minerals.

FOSSIL LUNCHEON NOTES - September 20, 1945
Discovered in an Ancient Strata on the Reporter's Desk

The day was bright and it was good to be back again for luncheons in our old corner room at the Winter Garden. Our worthy president, Mr. Hancock, was reported to be in a rock-cracking gang in eastern Oregon - length of his sentence unknown - return to civilization probably depends on how rapidly he used up the energy he gets from the fresh meat he took with him, for he will find poor picking on the old bones that turned to stones a few million years ago. Vice-president Libbey was also out of town but finally, by following down a logical line of accession to the throne, it was decided that Mrs. Stockwell, our efficient treasurer, was the rightful one to preside, which duty she performed in an admirable manner, except in her unfortunate choice of a reporter..... Dr. Booth called attention to a reprint of a timely article, "Atoms and Things," by F.W.Libbey; also a new article, "Uranium Notes," by J.E.Allen, in the August number of the Ore.-Bin. He also passed around some beautiful crystal specimens that were given to him by Mr. and Mrs. Ted Gordon of Salem, Oregon..... Mr. Stanley presented a local specimen he picked up on Barbour Boulevard. It looked like ivory - might have been part of a petrified pate on which the old "Barber" himself tried to grow hair..... When the most worthy program chairman arrived he looked the situation over, picked up a dessert and salad from the place next to the Davis pew, and A-D-Vanced to the head of the table with the sage remark that he was a gregarious animal and wanted to be among the herd. That may explain why F.D., the service chairman, has so much trouble getting his advance payments on ordered books. Better get a loud speaker, Franklin, and join the "heard."

E.N.B.

LUNCHEON NOTES - THURSDAY, JANUARY 10, 1946

Several guests and infrequent visitors swelled the attendance to 33. Mrs. Franklin Davis, Mrs. Lloyd Ruff, and Mr. Ray McKenzie were present for the first time in many weeks. Mr. Reuben Newcomb, a former member, has returned from the armed services to take a position with the U.S. Geological Survey Ground-Water Division. He was introduced by Mr. Tom Eakin. Mr. Bartow introduced Mr. Elder from the City Hall..... Mr. Hancock related a tale of his adventures in trying to get in to the famous Friday Ranch nodule locality. He reports that the bulldozing of the beds has covered up the best localities.

J.E.A.

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NEWS NOTES

Dr. David E. Weber is back in Portland again and expects to be wearing the homing pigeon soon if not already.

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Dr. Arthur Jones suggests that someone add a new song to the society's present repertoire. He has promised to lead the singing at its premiere - how about banquet time?

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Dr. and Mrs. Claude W. Adams entertained local groups of Boy Scouts and Campfire Girls with a geological show late in January, and on February 3rd, put on a display at the Westminister Church.

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Correction to December Luncheon Notes: Professor Geo. F. Beck was the guest of Dr. Adams.

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GEOLOGICAL SOCIETY OF THE OREGON COUNTRY

1946 Annual Banquet

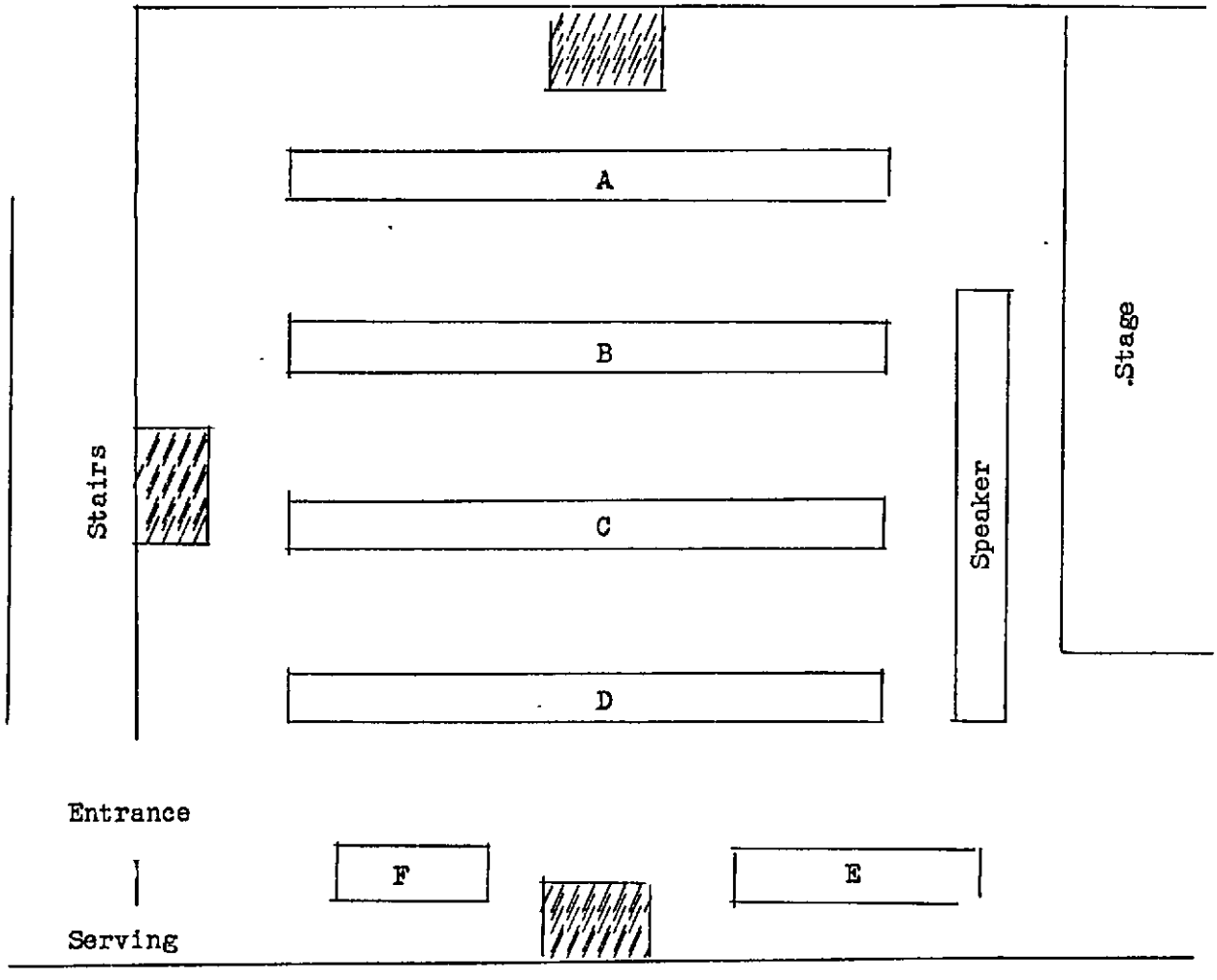
Seating Chart

Tables will be lettered as shown on the chart.

Seats will be numbered from 1 to 40 around the table in a clockwise direction, with number 1 at the end towards the speaker's table, on tables A, B, C, and D. Table E will seat 20 and table F will seat 10.

All seats will be reserved. Call or see Leo Simon, 711 S.W. Ankeny St., Phone BE 0300, after February 8.

Remember that last year's banquet was a sellout, and make your reservations early. Maximum is 190 seats.



GEOLOGICAL SOCIETY NEWS LETTER

Volume 12, No. 4 April 1946

SOCIETY ACTIVITIES

LECTURES: On the 2nd and 4th Fridays of each month at the auditorium (third floor) of the Public Service Building, 920 S.W.6th Ave. at 8:00 p.m.

TRIPS: Watch for announcements of at least one trip each month. Make your desires known to trip chairman, A. W. Hancock, phone SU 5285.

LUNCHEONS: Every Thursday noon in the Victory Room of the Winter Garden restaurant, 425 S.W. Taylor Street, between S.W. 4th and S.W. 5th Avenues. Luncheon 60¢.

MEETING ANNOUNCEMENTS

Friday Apr.12 — Dr. Ira S. Allison will tell of some of his experiences in England where he was sent as one of the professors of geology in colleges set up especially for soldiers. Dr. Allison visited many of the well-known geological sections in England and Scotland that have been prominent in the early development of the science of geology.

FIELD TRIP, SUNDAY, APRIL 28, 1946

Party led by R. S. Mason will leave from Front Avenue and Yamhill Street promptly at 10:00 a.m. First stop at Texas well on Bull Mtn. south of Beaverton; thence to Hillsboro and north through "iron ranges" where open cuts and drill sites will be examined. Last stop at Richfield well on Skyline Blvd.

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SECOND HONORARY LIFE FELLOW ELECTED TO SOCIETY

Constitution of the Society, Article II, sec. 3, (4):

"An HONORARY LIFE FELLOW must be elected unanimously by the Executive Committee for outstanding contribution to or attainment in the study of geology."

The Society has elected only one Honorary Life Fellow since its formation - Dr. E. T. Hodge, founder of the group. At the first meeting of the Executive Committee for 1946, held at 1:00 p.m., March 21, it was unanimously agreed by the Committee, consisting of Dr. John Eliot Allen, President; Mr. R. L. Baldwin, Vice-president; Miss Ada Henley, Secretary; Dr. C. L. Booth, Mr. Leo Simon, directors; and afterwards concurred in by the directors not present, Mr. E. N. Bates and Mr. J. Dean Butler, that a second HONORARY LIFE FELLOW be elected, namely the retiring President of the Society, Mr. A. W. Hancock. Although a director for the ensuing year, he was not allowed to vote on this subject.

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STRATIGRAPHY OF THE UPPER NEHALEM RIVER BASIN NORTHWESTERN OREGON

by

W. C. Warren and Hans Norbisrath

The February issue of the Bulletin of the American Association of Petroleum Geologists contains a 24-page article with maps covering all of the Vernonia and Keasey quadrangles and portions of nearby quadrangles. This paper discusses the rock sequence exposed in the area, which consists of the following:

Columbia River basalt	0 to 1000 feet	Middle Miocene
Scappoose formation	1500 "	L. Miocene or U. Oligocene
Pittsburg Bluff formation	700 " 850 "	Middle Oligocene
Keasey formation	1800 " 2200 "	L. Oligocene and U. Eocene
Cowlitz formation	950 "	Upper Eocene
Tillamook volcanic series	1000 plus feet	Eocene

J.E.A.

LUNCHEON NOTES - THURSDAY, JANUARY 24, 1946

Leo Simon told of a recent visit to the coal mine at Wilhoit and of the more or less original geological theories of the owner of the property who claims to have enough coal to supply the city of Portland but did not state for how long a period. Samples which Mr. Simon brought to the meeting looked like good coal, but the real test of coal is in the burning rather than its appearance at the luncheon table..... Lloyd Ruff spoke about the various kinds of basalt and of the sedimentary interbeds around the margins of the basalt formations, many of which contain leaf fossils. Some sedimentary interbeds are found at the site of the McNary Dam, Mr. Ruff said, and one of the test holes at the damsite struck an artesian flow..... Miss Henley read an extract from the "Salem Geode," the publication of the Salem Geological Society, illustrating the trials of an editor who printed a correction of a rather distressing typographical error in which he had said that a man was "a defective on the police force" and the correction read that this man really was a "detective on the police farce." Oh, well! ..... Bruce Schminky passed around a clipping containing a picture of his daughter, Carol Anne, receiving a McArthur medal as one of the leading young gardeners of the nation. The medal that she received was pinned to the clipping..... F.W.Libbey, when asked about the Wilhoit coal deposit, said that some of the deposit was as high grade as some Utah coal but that the seams were thin and he doubted if enough coal could be mined to repay the capital expenditure. He was not enthusiastic about the prospects for oil in the hills west of Portland. He said that the well on Cooper Mountain is 4000 feet deep.

O.E.S.

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LUNCHEON NOTES - THURSDAY, JANUARY 31, 1946

Another record crowd of 33 strained the capacity of the tables. Dr. Stevens introduced Mr. Jack Newburn, manager of the Gas-Ice plant that is located on the Klickatat River in eastern Washington; Mrs. Oberson introduced Mrs. Davis and Mrs. Justen of the Museum Foundation staff; and Dr. Allen introduced Mr. Kenneth Watkins, Oregon mining engineer of Disston. Specimens passed around included a leaf print from rocks of the Bridge Creek beds near Ashwood, by Mr. Hancock; a piece of coral limestone from Belgium, by Mr. Minar; and photographs from the files of the former Oregon Bureau of Mines, by Dr. Allen.

J.E.A.

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U.S. GEOLOGICAL SURVEY PUBLICATIONS AVAILABLE

Water-Supply Paper 1014. Surface water supply of the United States, 1944, part 14, Pacific slope basins in Oregon and lower Columbia River Basin. 1945. v, 222 pp., 1 fig. Price, 40 cents.

Prepared by Water Resources Branch, Division of Surface Water, in cooperation with the States of Oregon and Washington and other agencies.

Oil and gas investigations, preliminary map 42. Geology of northwestern Oregon west of Willamette River and north of latitude 45°15', by W.C.Warren, R.M.Grivetti, and Hans Norbisrath. Scale, 1 inch = about 2.3 miles; contour interval, 300 feet. 1 sheet, 44 by 64 inches. Price, 70 cents.

The geology of an area covering about 4,250 square miles in northwestern Oregon is shown on the map, together with 2 structure sections, 6 stratigraphic sections of the formations recognized, check lists of fossils characteristic of each formation, and a brief text summarizing the stratigraphy and structure of the region. The major geologic units are distinguished by patterns overprinted in green on a topographic base map printed in black, and localities where the individual formations may be observed are indicated by symbols.

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COMMITTEE APPOINTMENTS FOR 1946

The following committee appointments for 1946 have been made and approved by a quorum of the Executive Committee of the Society:

Editor NEWS - LETTER	Dr. E. M. Baldwin
Manager NEWS - LETTER	Mr. R. L. Baldwin
Program Committee	Mr. B. L. Boylan
Field-trip Committee	Mr. A. W. Hancock
Membership Committee	Mr. J. Martin Weber
Research Committee	Mr. J. W. Robinson
Publicity Committee	Mrs. L. E. Oberson
Historian	Mr. O. E. Stanley
Librarian	Miss M. Hughes
Museum Committee	Dr. J. C. Stevens
Public Relations	Mr. C. D. Phillips
Exhibit Committee	Mr. Leo Simon

Chairmen of the Service, Social, Work Night, and Auditing Committees will be appointed later. Chairmen appointees are urged to appoint their committee members and divide the work of each committee as soon as possible.

Respectfully submitted,

John Eliot Allen, president

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REPORT OF HISTORICAL COMMITTEE

Your Historical Committee reports that its activities for the past year have been mostly confined to making and mounting in the album, 56 photographs of the Annual Dinner and the Picnic on Mt. Tabor.

The Society's album is now full to the back cover, containing a total of more than 630 pictures ranging from the professionally perfect work of Leo Simon to others that are pretty terrible and merit inclusion only for their historical value.

These pictures are the work of 31 people, making an average of a little more than 20 to the contributor. Five were above this average and 26 below it in numbers. Five photographers have only one picture credited to each, while the top five gave 21, 30, 52, 66, and 338 respectively.

It will be necessary for the Society to either buy a new album or discontinue the practice of compiling its history photographically.

Yours respectfully,

Orrin E. Stanley, Chairman
Historical Committee, G.S.O.C.

February 22, 1946.

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REPORT OF THE SECRETARY
For the year ending February 28, 1946

The Society has 131 members in good standing for the year ending February 28, 1946, including four junior members, an increase of 19 members over last year. Twenty new members were received during the year, two of whom were former members who renewed their memberships.

One new subscription to the NEWS - LETTER was received, making a total of six.

The Executive Committee held seven meetings during the year.

Respectfully submitted,

February 22, 1946

Ada Henley, Secretary

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REPORT OF THE SECRETARY
On Letter Ballot for Offices of the Society
For the year beginning March 1, 1946

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, 1946.

Prior to this annual meeting 74 marked ballots were 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	Dr. John Eliot Allen
Vice-President	Raymond L. Baldwin
Secretary	Miss Ada Henley
Treasurer	Mrs. H. Mildred Stockwell
Director	J. Dean Butler (3 years)

Respectfully submitted,

February 22, 1946

Ada Henley, Secretary

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CONDON LECTURES

The Oregon State System of Higher Education announces that Dr. Fay-Cooper Cole, professor of anthropology at the University of Chicago, will give the second series of Condon lectures in Portland on April 15 and 17. His subjects will be "Peoples and Cultures of Malaysia," and "Malaysia in the Postwar Period."

All members and friends of the Geological Society are invited to attend these lectures. Watch the newspapers for further announcements.

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CHANGE OF ADDRESS

May R. Dale, 303 S.E. 8th Avenue, LA 8163. Business phone - LA 2161.

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THE TWILIGHT METEOR OF NOVEMBER 29, 1945

By
J. Hugh Pruett
Pacific Regional Director - American Meteor Society
(Continued from March 1946 issue)

Because of the brightness of the twilight, observers near the coast had little opportunity to note whether the meteor left a phosphorescent train, the white line sometimes seen on the sky after a fireball's disappearance. But as the sky-traveler moved across the line into Nevada where night was deepening, there was an opportunity to see any that might have been formed. At Los Banos, California, Jane Warren reported that "as the meteor passed, it left a white glow in the sky. I couldn't estimate the exact duration, but it was comparatively long." Beverly Machado, nearly two miles from Miss Warren, wrote that she "saw the trail after the meteor disappeared just for a few seconds." North of Tonopah, Nevada, Mr. Ferguson describes his impression thus: "Left a white line like the vapor trail of an airplane which was straight at first. It gradually was kinked by air currents. It was visible while we traveled five miles, but after that it was back of our car and we did not look any more."

In determining the "ground-path" of a fireball, the first step is to prepare a special map on which to plot the azimuth lines. The one used for the meteor under discussion follows the method devised by the president of the American Meteor Society, Dr. Chas. P. Olivier of the University of Pennsylvania. Some unit of length is adopted to represent one minute of latitude. In the present case we used 1/40 inch (from the edge of a triangular ruler). Then 60 of these units represent 1° of latitude and also 60 nautical miles of distance along the surface. In correcting for curvature of the earth when determining meteor heights, very good results are then easily obtained by using one half of the units of distance from the observer as an addition in minutes to the reported angle of altitude. (D^2 / 2R, where D is the distance from the observer and R is the radius of the earth, will give very nearly the same curvature correction.)

The latitude lines on the map are made straight and parallel, 60 units, or 1° apart. The meridians of longitude converge toward the north, and at any place 1° of longitude equals (in units of length) 60 times the cosine of the latitude. Nautical miles are converted to statute miles by multiplying by 1.15.

The real labor comes when the cities from which reports have been received are to be transferred from some large, high-grade map to the correct places on our newly prepared chart. Careful measurements from each place to the nearest parallels and meridians must be made, and these in turn must be multiplied by a conversion factor to make them fit the prepared map, on which more measurements must be made. After the cartographer has transferred about 59 cities and localities, he feels that "the laborer is worthy of his hire."

Then we are ready to go. The particular method of representation is my own, but it seems to me that it gives the general reader an easier and more striking idea of what is being done. The results are the same as the more conventional way of drawing just one line on the map, the line showing the ground-path of the meteor. But most readers are interested in knowing how we determine this path.

Referring to the plotting map, let us consider Redwood City, south of San Francisco. Richard D. Matthews of Stanford University observing here, reported that he first saw the fireball S. 50° E. Using the nearest meridian as a line of true north and south, we lay off this direction with a protractor and ruler and represent it by a solid arrow. The length of the arrow makes no difference.

We have to keep many of them short to prevent cluttering the map. The direction is the important thing. Mr. Matthews said that he last saw the object N. 60° E. of him. We represent this disappearance direction by a dotted arrow.

From Redwood City lines alone, a determination of the path is impossible. We could draw innumerable paths which would fit the directions of appearance and disappearance. The meteor might be in a very distant sky or, as one correspondent wrote, "not in the sky at all but in the air quite close to me." But if Mr. Matthews had seen the entire visible flight and some one else 100 miles away had been equally fortunate, then these two alone, if equipped with angle-measuring instruments and the ability to use them, could have established quite satisfactorily the fireball's path. But such visitors never give advance notice of their coming so that two widely separated and experienced engineers can be waiting with transits for a perfect shot. Instead, we have to depend usually on less certain data from a large number of untrained persons. However, after a few directional reports have been plotted, it is usually quite apparent that a majority are conforming to a certain pattern. Some are not as sure as they might be where they saw the fireball or what the directions were. A glance at the completed map will show some of these. (See March 1946 issue NEWS - LETTER for map.)

Long before the plotting is finished, the general convergence of the disappearance arrows shows quite definitely the locality of the end of the luminous flight. The beginning locality is not so easily determined for all do not sight the meteor at the same instant. But after the plotting is finished it is usually possible to see what the majority of the arrows indicate. But the appearance locality, or "sub-beginning" point, is never as definitely established as the "sub-end" point - if they may be called points. Most observers have a tendency to "recall" that they first saw the luminous object farther back than it actually appeared. Although many solid arrows indicate the start of the visible flight was far out over the ocean, I am doubtful if it was really as far out even as shown on our plotting map.

Over land, the ground-path has its runway quite definitely fenced in. It goes between Atascadero and Santa Maria; between Riverdale and Visalia; and between Bishop and Luning. The solid arrow at Fresno is not the appearance direction, but the direction, according to Earl Jennings, when the fireball was highest in the sky. At Riverdale, a very competent reporter, John Blaser, explained at some length on his questionnaire that although it was first reported directly overhead when highest, several observers when querried stated that it was very high in the sky but definitely south of the zenith.

The angles of altitude reported along various parts of the air-path are in many cases quite conflicting. Some would result in heights of 200 or 300 miles. But it is usually possible to determine which are the most reasonable. Those reports which seem quite accurate in all respects are usually consistent with other reports of good quality. The two at the beginning of the charted flight result from the assumption that the angles of altitude from Coleville and Reno airport belong here rather than farther out as the appearance arrows would indicate. All others are from the approximate directions indicated from various reports. The three bearing the Reno label are for the points of appearance, greatest height in the sky, and disappearance. Prof. Blair operated the transit in these measurements, directing it to the positions in the sky indicated by the original observer. The heights calculated from these angles are very consistent among themselves as well as with those from other competent observers. The end altitude resulting from the measurement of a diagram of the Burns observer gives a value of 26 miles. It was not a transit reading.

When we begin to calculate the angle to the horizontal at which the fireball was approaching the earth, we cease to wonder that dozens of persons a long distance from the ground-path wrote, "It seemed to be traveling in almost a level path, hardly losing altitude at all." Referred to the plane of the horizon of Reno airport and using the data from there, the average inclination from the beginning to the end point was 4°.0; from the point of greatest altitude as observed from Reno to the end, 4°.5. When measured from the plane of the horizon of Sacramento, the short flight recorded from that place gives 2°.9; from Redwood City, 4°.9. When the slope of descent is referred to the horizon of the plotted sub-end point, we get the ridiculously low figure of 1°.8!

A violent burst was indicated by several who reported it as occurring at about the place the fireball crossed the California-Nevada line. Dr. Power writes that Dr. Hannah, recently president of the California Academy of Science in San Francisco, presents this theory of the bursting of fireballs: The air resistance against the irregular front causes rotation (many said the object was in violent rotation) as well as heat. Centrifugal force is finally great enough to cause pieces to tear away.

Dr. Lincoln La Paz, president of the Society for Research on Meteorites, writes that there is a noted similarity between the luminous phenomena of the recent fireball, as indicated in some reports, and that connected with the explosions of the Japanese balloons.

The solid body responsible for the Twilight Meteor was disintegrating constantly and rapidly during most of its flight. This seems to indicate that it was one of the more fragile types of meteorites. The observed action was very similar to that of two fairly recent fireballs which produced the very rare type of meteorites known as howardites. In both cases remnants were found under the visible path far back from the end-point. Dr. Frederick C. Leonard gives permission to quote him as believing that the meteorite concerned with the most recent flight "was probably an aerolite and possibly a howardite, similar to the Washougal, Washington, and Pasamonte, New Mexico, aerolites." It hardly seems that it could be an "iron".

The finest of cooperation and courtesy have been shown by all concerned in the study of the Twilight Meteor. The American Meteor Society is most grateful to the general public and the newspapers for their efficient help, without which we should not have been able to collect the great mass of data we now have. I am personally most appreciative of the cooperation of the scientists connected with this study: those actively helping with the collection of data, Prof. Blair, Prof. Linsley, Dr. Power, and Mr. Buddhue; those supporting the investigation through numerous letters, Dr. Olivier, Dr. Leonard, and Dr. La Paz; and my fellow townsman, Dr. A. H. Kunz, head of the chemistry department at the University of Oregon, who, as on many previous occasions, assisted with the construction of the tracing map.

Should any reader of this article have further data which he considers will be of value in the present study, I shall be glad to receive it. Address me: General Extension Division at the University of Oregon, Eugene.

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NEW MEMBERS

	Phone
Mrs. Dorothy D. Stoddard, 2406 N.E. 46th Avenue, Zone 13	GA 0302
Mrs. Livia Bond Marsters, 2406 N.E. 46th Avenue, " 13	GA 0302
Mr. and Mrs. Wm. B. Gruber, 6476 S.W. Burlingame Place, Zone 1	BR 6506

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FINAL REPORT OF THE TREASURER

March 1, 1945	Balance on hand		$ 581.91
	INCOME Mar. 1, 1945 to Feb. 28, 1946		
	Memberships		
86	Renewals @ $ 3.50	$ 301.00	
7	" @ 2.50	17.50	
6	New @ 3.50	21.00	
2	" @ 2.50	5.00	
7	" @ 2.00	14.00	
4	Junior @ 1.50	6.00	
112		$ 364.50	
	Prepaid Memberships		
5	Renewals @ 3.50	$ 17.50	
2	New @ 3.50	7.00	
1	" @ 2.50 & over paid $2.50	5.00	29.50
		$ 394.00	
	Less refunds for overpayments	7.50	
		$ 386.50	
	News-Letter subscriptions & Sales	14.00	
	1945 Banquet receipts	47.00	
	1946 " "	141.00	
	Miscellaneous re Park Luncheons	2.63	591.13
			$ 1173.04
	EXPENSES		
	News Letter	$ 212.58	
	Stat'y. Prtg.& Pstge.	16.70	
	1945 Banquet Expense	227.05	
	Lecture Expense	17.60	
	Miscellaneous Expense	25.41	499.34
	Balance on hand February 28, 1946		$ 673.70

RECONCILIATION

Mar. 1, 1945 Check book balance	$ 581.91	
Deposits Mar.1,1945-Feb.28,1946	598.63	
	$1180.54	
Less checks, Mar. 1, 1945 to Feb.28,1946	506.84	$ 673.70

Respectfully submitted,

February 28, 1946

H. Mildred Stockwell, Treasurer

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NEWS ITEM

Mr. Lloyd L. Ruff, U.S. Army Engineers entertained a meeting of Federal employees, March 21st, with an illustrated lecture covering a preliminary reconnaissance of the Snake River Canyon.

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ANNUAL REPORT OF THE G.S.O.C. LIBRARY
1945 - 1946

This annual report of the library has few items of interest to present to the society. This due to the fact that the library has not reached the stage of actively serving the society membership. It may be said that its present funbtion is in large measure to collect and preserve a body of technical material to serve as a foundation of a well-established, specialized library of the future. Many of the books and other publications now on the shelves of the library have increased in value since they were received as they are now out of print.

"Library Notes" published at intervals during the year in the NEWS - LETTER furnish a list of all books and other publications received and placed on the shelves of the library. By this measure all interested members of the society are given an opportunity to follow the growth and development of the library and become acquainted with the type of reading and reference material which the library has to offer.

There has been a decrease in the volume of material received during the past year owing to the restriction on the use of paper for printing purposes and other results due to war conditions; nevertheless the library shelves are filling at a rate to indicate the need of an added book case by the end of 1946.

Margaret Hughes, Librarian.

* * * * * *

REPORT OF THE TRIP COMMITTEE
1945 - 1946

In spite of the fact that gasoline was ration free, the tire situation kept members from offering to scout and lead trips. Only three trips were scheduled for the year.

July 20, 1945 - A picnic lunch and geological discussion was set for the afternoon at Council Crest Park. Due to threatening weather only some eight or ten persons attended.

October 7, 1945 - A trip along the Pacific Highway between Vancouver and Kalama was arranged by Ewart M. Baldwin and A. D. Vance. This added an increase in geological knowledge and a good collection of zeolites for those who attended. There were about thirteen cars in the caravan.

November 24, 1945 - A special trip was arranged by John Eliot Allen and A. D. Vance to honor Howell Williams. This trip was to the lava tunnel near Mt. St. Helens, on the Lewis River. Besides giving the members a chance to become personally acquainted with the outstanding vulcanologist, the trip gave a splendid study of the mechanics of a lava flow. About eight full cars made the trip.

February 22, 1946.

Respectfully submitted,

H. B. Schminky, Trip chairman.

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LUNCHEON NOTES - THURSDAY, FEBRUARY 7, 1946

A slight decline in the usual attendance still brought 30 members to the Winter Garden, where the meals served have been improving considerably, with only an occasional backslide. Among the specimens passed around were samples of agate, zeolite, and actinolite schist, by Mr. and Mrs. Hugh Miller; iridescent coal from Pennsylvania by Miss Ada Henley; and fossil leaves of Pliocene age from the shores of Lake Lahontan, Nevada, at 5000 feet elevation, 700 feet above the present lake level. A letter from our former member, Mrs. Woodward (Florence Iverson) now in the Deschutes Geology Club, Bend, Oregon, invited the G.S.O.C. to a joint trip to Newberry Crater sometime this spring. Trip Committee take notice! Mr. Davis presented as visitors, Mr. Walter Bashan and Lt. Robert Roberts of the U.S. Army Engineers. Mr. Libbey described the recent interest in pumice as an aggregate for light-weight building blocks, to be used in the Portland area. Mrs. Oberson reported on the Museum Foundation plans, and on the Banquet program.

J.E.A.

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LUNCHEON MEETING - FEBRUARY 14, 1946

A total attendance of 27 included Forrest Hubbard, a guest of Dr. John Eliot Allen, Mrs. Allen, and Dr. Adams, who was still eating after the meeting adjourned. Mrs. Hugh Miller, an infrequent visitor, took the occasion to check up on her husband's eating habits . . . . .G.V.Elder had specimens from the Argenta mining district in Montana. They were "fool's gold," and ore which assayed 40 oz. to the ton of "gold, no fooling" . . . . .Dr. Adams brought specimens of typical rocks from Joplin, Missouri, such as calcite and sphalerite, limestone, chert, galena, and jasper. He also had rock from the jetty at Point Pleasant, N.J., red shale from New Brunswick, and Franklinite, Zincite, and Willemite from Franklin, N.J. . . . . Dr. J. C. Stevens spoke at length about gifts that will be made to the Oregon Museum Foundation at its next meeting. John Allen is chairman of the Foundation's committee on specimens and collections . . . . .Trip committee chairman Schminky asked for suggestions and volunteer leaders for future trips. Silence followed. . . . . .Mrs. Oberson said that Peter B. Peterson has several rock cutting and polishing machines for sale, and also has an interesting collection of myrtlewood furniture.

O.E.S.

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LUNCHEON NOTES - THURSDAY, FEBRUARY 28, 1946

One of today's guests, introduced by Dr. John Allen, was Miss Ruth Hobson, who is now getting her Ph.D. degree at Cornell University and has been teaching an extension course for Portland school teachers. Her thesis is on the natural history of the upper McKenzie. Miss Hobson has been taking a series of photographs over a period of years, showing the retreat of Collier Glacier on the North Sister. Some of these very beautiful pictures were exhibited to us today. ..... Another guest, presented by Dr. W. Claude Adams, was Dr. P.T.Meany, a local dentist whose hobby is mining. Dr. Meany showed samples of gold-bearing ore, chalcopyrite, and bornite taken from a mine near Riddle, Oregon. ..... Other specimens shown were a chalcedony "rose" from a mine dump in California, by Mrs. Warner, and two shell fossils and a number of miscellaneous unnamed specimens by Mr. Elder. ..... "Pitch Inclusions in Lava" is the title of a paper by Jack De Ment, printed copies of which were distributed by Mr. Ray Baldwin. ..... Mrs. Oberson announced the new location of the Oregon Museum Foundation headquarters in the old writing room of the Portland Hotel. Mrs. Franklin Davis is now assisting Mrs. Oberson, who is temporarily on a part-time basis, having recently assumed maternal duties. Mary Louise Oberson, our youngest geologist, will be one month old on March 7.

A.H.

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GEOLOGICAL SOCIETY NEWS LETTER

Volume 12, No. 5 May 1946

SOCIETY ACTIVITIES

LECTURES: On the second and fourth Fridays of each month at the auditorium (third floor) of the Public Service Building, 920 S. W. 6th Avenue at 8:00 p.m.

TRIPS: Watch for announcements of at least one trip each month. Make your desires known to trip chairman, Mr. A. W. Hancock, phone SU 5285.

LUNCHEONS: Every Thursday noon in the Victory Room of the Winter Garden restaurant, 425 S. W. Taylor Street, between S. W. 4th and S. W. 5th Aves. Luncheon 60¢.

MEETING ANNOUNCEMENTS

Friday May 24 — "A Bird's Eye View of Mexico" - color slides by Mr. Roy Clark, head of the Design Branch, U.S.Engineers. These color photographs were taken on a trip last Fall.

Friday May 10 — "Collecting Around the World" by Ormond R. Bean. Mr. Bean's sojourns in Egypt, Puerto Rico, and Hawaii during his wartime work resulted in a diversified collection of geological, historical, and archaeological objects which will be displayed and discussed.

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SONAR AND FISH

Fish are sound makers! High-frequency sound detection apparatus developed by the Navy during the war discovered that many forms of sea life are quite articulate and even annoying. Sea-shrimp, particularly, make a constant clatter, and a school of them will drown out the sound of a submarine completely. This was made use of in the Japanese waters by United States boats who hid in schools of shrimp! The porpoise is one of the noisiest, but he, of course, like man, is a mammal. His most pronounced sound is a whistle that would make any good-looking girl turn around. Maybe there are mermaids after all! At one of the sessions of the Geological Society of America held in Berkely April 19-20, several records of sea-bottom sounds were played by one of the geologists who had been working on the problem for the Navy.

J.E.A.

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NEW AND RETURNING MEMBERS

Mr. and Mrs. Paul Howell, 1230 Emerald St., Eugene, Oregon.
Mr. and Mrs. Phil F. Brogan, 1426 Harmon Blvd., Bend, Oregon.
Miss Miriam Ray Shepard, Box 164, Route 2, Portland, Oregon.
Mr. and Mrs. H. H. Hardman, 428 West 6th Street, Long Beach, Calif., Zone 2.
Miss Mildred Jean Nelson, 4815 N.E. 11th Avenue, Portland 11, Oregon.

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ADDRESS - ANNUAL BANQUET - 1946

by

John Eliot Allen

Tonight I would like to make use again of that fundamental geologic law, the doctrine of uniformitarianism, which postulates that one may interpret the past in terms of the present; that things occurred during past geologic ages much as they do today. Only this time, I am going to apply the law in reverse, and attempt to interpret the present and predict the future in terms of what has gone on in the past.

Let us then, go back to the beginnings . . . to the beginnings of our organization, and review the fundamental objects of this society, as set forth in the by-laws 10 years ago, to see what progress has been made and from this interpret what we still can do.

There are six "Objects of the Society" listed, and we can take these up in turn. The first is "To provide facilities for the members of the Society to study Geology, particularly the geology of the Oregon Country." This is, of course, the chief objective of our association, and the lectures, field trips, work nights, and library all have given our members ample means of following their chosen hobby. True, we have been handicapped these last years by the curtailment of trips, but we hope to again roam the highways and trails this coming season. The work night, initiated and supervised by Lloyd Ruff has been an extremely valuable opportunity of which advantage has not been fully taken. Also, although there are committees appointed for these activities, support those committees whether you are members of them or not - suggest speakers to the lecture committee, and scout trips for the trip committee. I can assure you that all suggestions will be greeted with almost tearful appreciation by the hardworking committee chairmen! I want to emphasize now that this is your society, and the facilities are yours. Use them!

The second object is "The establishment and maintenance of a library and museum of geological works, maps, and specimens." I am sorry to say that the splendid library has been used only too infrequently in the past . . . there are 7 full-sized bookshelves totalling over 20 lineal feet of publications, located in the office of the Department of Geology and Mineral Industries, 702 Woodlark Bldg., ...let us make use of them. Miss Hughes has been Librarian for the past 5 years, and I can assure you that she has kept the library in spick and span order, and that it is a valuable adjunct, if we make use of it. Let us also add to the library this year, with our own personal donations.

We have been handicapped by not having a storage space for geologic specimens. Mr. Hancock, who has one of the foremost collections in the northwest, as well as Lloyd Ruff and Dr. Booth, all have yearned for places to deposit their loot. We hope that the Oregon Museum Foundation, Inc., of which this society is a member, will have a successful campaign this spring, and that we will be able to carry home more and better specimens, with the knowledge that they will be accepted and displayed as they should. If you haven't already made your donation to the foundation, you should do so soon.

The third object is "The encouragement of geological study among amateurs," and here I wish to emphasize the intense interest of the younger members of our community. Both Mr. Hancock and myself have recently had occasion to talk before school groups, and I for one, have been amazed at the keen interest and appreciation of the 6th, 7th, and 8th graders in whatever they can glean of geological subjects. Apparently there is a vast unsatisfied demand here, and I feel we should make an effort to corral these budding geologists. Perhaps we should appoint a

committee to contact the various schools; a speaker's committee, if you like. Perhaps we should make a new membership rating, a juvenile membership with a nominal fee, so that the youngsters can come on our field trips and take advantage of our talks.

The fourth object is "The support and promotion of geologic investigation in the Oregon Country." The finds of Mr. Vance and Mr. Hancock in the paleontological field has already been of great value to the professionals. Our NEWS - LETTER is a medium of publication for scientific articles that has been used repeatedly; it is one of the very few mimeographed publications that is listed in the U.S. Geological Survey publication, Bibliography of North American Geology.

The fifth object is "The designation, preservation, and interpretation of important geologic features of the Oregon Country," and in the first two respects we have rather fallen down in the past. Interpretation, yes, we have and will continue to publish articles explaining geologic features of interest. I conceive of a campaign to place signs along the highway, "Prepared by the Geological Society of the Oregon Country" at such impressive spots as Oneonta Gorge, Mount Tabor Crater, Rowena Loops, Crown Point, the Cove on the Deschutes, which would explain in simple language the history of what is exposed there.

The last object of the society is "The development of the mental capacities of its members in the study of geology and the promotion of better acquaintance and closer association between those engaged in the above objects." Here it seems to me we excel . . . we are a melting pot of different walks of life, all bound together by a common interest. Doctors, lawyers, merchants, (no thieves, I hope), photographers, engineers, and workmen of all sorts. As an example, of the 11 past presidents of the society, only 4 have been professional geologists; 3 have been civil engineers; 1 a hydraulic engineer, 1 a mechanical engineer; 1 a lawyer; 1 a postal employee. Let us keep it that way , . . we are in no sense a professional group, we are bound together by a consuming and continuing interest in the wonders of earth history.

The philosophy of the group can be summarized by a papaphrase on the initial letter of the name, G.S.O.C.:

Gathering geologic information, rocks, and fossils;
Studying them in the laboratory, library, and lecture hall;
Observing how they reveal the past history of the earth;
Comrades all in a community of like interests.

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MINERAL GROUP ORGANIZES AT EUGENE

To promote wider interest in the collecting and cutting of gems and minerals, a group of Eugene business men met here Wednesday evening to form the Eugene Mineral Association. They plan to make field trips to various sections of the Pacific Northwest in search of new mineral deposits.

Dr. Warren D. Smith and Dr. Lloyd W. Staples of the University of Oregon, Department of Geology, both popular speakers with the Geological Society, were elected to honorary membership.

Oregonian, March 31, 1946.

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DR. LLOYD W. STAPLES - BANQUET SPEAKER

The highlight of the evening was an illustrated lecture on "Rock cavities and mineral fillings," by Dr. Lloyd W. Staples, popular lecturer from the University of Oregon, Department of Geology. Dr. Staples, a mineralogist of national note, has the faculty of making such a technical subject appear simple (at least while he tells it) and, aided by amazingly beautiful slides, he kept his audience enthralled.

The slides were unusual in that in reality they were thin sections of rock and mineral matter cut or ground to the proper thickness, through which the light was transmitted to the screen with all its natural color. Considerable technical skill is needed to prepare these slides. The writer learned that Dr. Staples has many more such slides in his possession and it is hoped that he can be prevailed upon to show us the rest.

A new and interesting theory on the origin of "thunder eggs" was presented by Dr. Staples, who suggested that the angular shape is due to gas pressure from within resulting in expansion and later filling of the center. In case of some agates, he proposed that the outer roughly spherical zone developed later than the parallel bands in the center. It is to be hoped that Dr. Staples elucidates more fully on these very interesting, and, to the listeners, new ideas.

The audience, which included many of the most avid collectors in Oregon, was commended for its zeal but also cautioned about annihilating likely localities indiscriminately. Some rather nice road and railroad cuts which contain zeolites have been opened up recently. Some have been cleaned out by collectors who figuratively peer over the workman's shoulder. This is fine if the specimens are taken with due care and adequately labeled and placed in collections that will be available to scientific workers, either in private collections or municipal or university collections. Fortunately this is being done by several of our members. Those that collect in haste and throw away at leisure might be tempted to use some very nice mineralogic specimens as door stops or as ammunition for stray cats at midnight.

Another word of caution was leveled at those who hurriedly apply new rock and mineral names to what they think are new varieties. This is not desirable, partly because these names are usually not appropriate, might be preoccupied, and also because the supposedly new variety may not be significantly different from those that have already been carefully named, described, and recorded in the technical literature. Perhaps the same variety of mineral matter is known as "Oregonite" in Oregon and "Nevadite" in Nevada because of indiscriminate action of insufficiently trained "mineralogists."

The Geological Society is looking forward to a return engagement with Dr. Staples at which time more of the very interesting story can be told both visually and verbally.

E.M.B.

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REPORT OF SERVICE COMMITTEE

During Mr. Hancock's tenure as President the purchase of publications by members of the Society were as follows:

	List price	Net price
Publications purchased at a discount	$ 436.85	$ 312.68
Publications purchased at list price, mainly Government	52.62	52.62
Totals	$ 489.47	$ 365.30

Net savings to members $124.17 /s/ Franklin L. Davis, Chairman, Service Comm.

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SIX GEOLOGISTS OF OREGON

Six geologists of Oregon
To learning much inclined,
All went to see Mazama,
(Though all of them were blind),
That each by observation
Might satisfy his mind.

-1-

The first approached the Mountain
And happening to fall
Upon a smooth and striated rock,
At once began to bawl:
"God bless me, but the glacier here
Receded just last fall!!"

Dr. I.C.Stairs
by
Thomas Rakin

-2-

The second stepped in cinders deep,
Cried "Ho! what have we found?
Fresh lava flows on every side,
To me it seems quite sound,
"This wonder of a mountain's a
Composite lava mound!"

Dr. A.A.Pahoehoe
by
John Eliot Allen

-3-

The third, approaching the lofty peak
And happening to glean
A clam shell lying on the trail
That Vance had never seen,
"I see," quoth he, "The mountain here
Dates from the Eocene!"

Herr Prof. E.X.Tinct
by
E. M. Baldwin

-4-

The fourth grasped hold his willow wand
And paraded round the shore,
When suddenly the fork dipped down
And he cried with a lusty roar,
"Beneath us lies, undoubtedly, a
Ground-water reservoir!"

Herr Doktor Walter Mitchell
by
John Robinson

-5-

The fifth, while drilling all around
Felt his auger light
Upon a flow of iron-stained mud
And shouted with all his might:
"This mountain here is high-grade ore!
Ferruginous bauxite!"

Dr. Down D. Stope
by
Ralph S. Mason

-6-

The sixth no sooner had begun
When his eagle glance did light
Upon a glassy hunk of quartz
That fell within his sight.
"I see," quoth he, "the volcano
Is full of zeolite!"

Doktor Z.O.Lite
by
Lloyd L. Ruff

And so these men of Oregon
Disputed loud and long,
Each in his own opinion
Exceeding stiff and strong,
Though each was partly in the right
And all were in the wrong!

(over)

SIX GEOLOGISTS OF OREGON
(Continued)

So oft in geologic wars,
The disputants, I ween,
Rail on in utter ignorance
Of what the others mean,
And prate about the features
Not one of them has seen.

Apologies to John Godfrey Saxe
by LLR, JR, and JEA

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REPORT OF THE MUSEUM COMMITTEE

During the past year substantial progress has been made in furthering the establishment of a MEMORIAL MUSEUM OF HISTORY, SCIENCE AND INDUSTRY in Portland.

The OREGON MUSEUM FOUNDATION was incorporated in November 1944. This incorporation was the result of the work of the committee of 100 appointed by Governor Snell to canvass ways and means of securing an Oregon museum.

Following the incorporation of the Foundation, a Board of Trustees was selected in accordance with the By-Laws which had previously been adopted by the incorporators. There are thirty-five trustees in all. Five are ex-officio members who are Board members during their term of office. Eleven are recommended by various organizations. Nineteen are elected at large. The thirty elected trustees serve for three years each so that ten must be elected each year. The trustees are required to meet quarterly. All the meetings have been evidenced by a fine spirit of cooperation and helpfulness.

One of the objectives of the Foundation is to sponsor a series of lectures on timely scientific subjects. The first one of these was delivered by Dr. A.A. Knowlton, Head of the Department of Physics at Reed College, who gave a very interesting and instructive lecture on "Atomic Energy" on December 15, last. Lectures will be given under the auspices of the Foundation about every three months.

A preliminary campaign for funds by mail was undertaken during the year, which resulted in the receipt of about $15,000. The returns are still coming in slowly.

In addition to these cash receipts, the Museum has received very valuable gifts from the following: A.W.Hancock, President of this Society, has contributed his entire collection of fossils, minerals, and agates to the Museum Foundation. They will remain in Mr. Hancock's custody until the Foundation has the facilities for properly exhibiting them. Peter B. Peterson (since deceased) donated his entire collection of minerals, agates, and semi-precious gems to the Foundation. This material is now in the custody of the Probate Court and cannot be released until the will has been probated. Louis Schumacher donated a fine collection of mounted birds that will be very valuable for loan collections to schools as an aid in nature study. George Butler, executor of the Estate of C.G.Hambo, donated an extensive collection of Indian artifacts.

The plan of financing is gradually taking shape. Much educational work is necessary to make the people of Oregon museum conscious. Publicity work for this purpose is well under way and will be continued. The financing plans include the creation of a committee of seventy-five, who will make personal solicitations of about two hundred financially able citizens. Solicitation by mail will be continued. We want to secure a maximum number of individuals as members of the Foundation, including grammar and high school students, as well as adults. Gifts by corporations and organizations will also be solicited.

Three important committees have been appointed:

1. Committee on the museum building, Marshall N. Dana, Chairman.

2. Committee on a site for the museum building, chairman to be selected.

3. Committee on Specimens and Collections, Dr. John Eliot Allen, Chairman.

It takes time to get an enterprise of such magnitude under way. Decided progress was made during 1945, and we anticipate even more progress in 1946.

Headquarters have been established in the Portland Hotel, telephone AT 1171, Ext. 741. Viola L. Oberson has been employed on a full-time basis as Assistant to the President. Acknowledgments are due to Miss Rose Jennings and Mrs. Franklin Davis of this Society for valuable office help.

This report was accompanied by a little brochure outlining the organization and objectives of the Foundation.

Respectfully submitted,
/s/ J.C.Stevens, Chairman

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REPORT OF RESEARCH CHAIRMAN

Members of the Geological Society have been active in individual research and collecting of zeolites, fossils, and agate and mineral specimens during the year 1945.

Besides the activities of the individual members, several papers dealing with phases of the geology of the Oregon Country have appeared in print. The following list of papers published during 1945, exclusive of papers appearing in our NEWS - LETTER, are mentioned because of their probable general interest to members:

Allison, I.S., Pumice beds at Summer Lake, Oregon: Geol. Soc. America Bull. vol. 56, 1945.

Beck, G.F., Tertiary conifereous woods of western North America: Northwest Science vol. 19, no. 3, pp. 67-69; no. 4, pp. 89-102, 4 pl., 1945.

Brogan, Phil, Series of articles appearing in Sunday Oregonian.

Freeman, O.W., Forrester, J.D., and Lupher, R.L., Physiographic divisions of the Columbia intermontane province: Annals of the Assoc. Am. Geographers, vol. 35, June 1945.

Libbey, F.W., An outline of Oregon's mineral industry: Oregon Business Review vol. 4, pp. 1, 9-14, May 1945.

Libbey, F.W., Lowry, W.D., and Mason, R.S., Ferruginous bauxite deposits in northwestern Oregon: Dept. Geol. and Min. Ind. Bull. 29, pp. 1-97, 1945.

Schenck, H.G., Geologic application of biometrical analysis of molluscan assemblages: Journal of Paleontology, vol. 19, September 1945.

Warren, W.C., Norbisrath, H., and Grivetti, R.W., Geology of northwestern Oregon, west of the Willamette River and north of latitude 45°15': U.S. Geol. Survey Oil and Gas Investigations, Prelim. map 42, December 1945.

Weaver, C.E., Stratigraphy and paleontology of the Tertiary formations at Coos Bay, Oregon: Univ. of Washington Publications in Geology, vol. 6, no. 2, pp. 31-62, 1945.

E.M.Baldwin

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LIBRARY NOTES

The following books and periodicals have been added to the shelves of the G.S.O.C. Library, 702 Woodlark Bldg., 813 S.W.Alder Street, during the period from May 25, 1945 to March 16, 1946. The Society takes this occasion to express its thanks to those who have made contributions to the library during the past year.

The library has received the following:

From

Dr. John C. Stevens -
A collection of papers, by Dr. Charles P. Berkey:
Recent geologic explorations in Central Asia.
Peneplane of Mongolia.
Structural elements of the oldrock floor of the Gobi region.
Explorations in the Desert Region of Central Asia.
Geological Reconnaissance in Central Mongolia.
Basin Structures in Mongolia.

George F. Beck -
Life History of the Ginko Petrified Forest, by George F. Beck, 1939.

Oregon Department of Geology and Mineral Industries -
Bulletins:
No. 27. Geology and Coal Resources of Coos Bay Quadrangle, Oregon, by John Eliot Allen and Ewart M. Baldwin, 1944.
No. 29. Ferruginous Bauxite Deposits in Northwestern Oregon, by F.W.Libbey, W.D.Lowry, and R.S.Mason, 1945.

From

Oregon Department of Geology and Mineral Industries -

G.M.I. Short Papers:

No. 14. Notes on Building-block Materials of Eastern Oregon, by Norman S. Wagner, 1946.

The Ore.-Bin:

Vol. 7, no. 6 to vol. 7 no. 12, 1945.
Vol. 8 no. 1 to vol. 8 no. 3, 1946.

Academy of Natural Sciences of Philadelphia -

Notulae Naturae:

No. 153. Notes on Columbian Antbirds, Ovenbirds, and Woodhewers, with the description of a new form from Peru, by Rodulphe Meyer de Schauensee.

No. 155. A new genus and species of locust of the group euthymiae (Orthoptera Aeriididae Cyrtacanthacridnae) from South Africa, by James A.G.Rehn.

No. 156. Notes on Buteo Magnirostris, with a description of a new form from Peru, by Rodolphe Meyer de Schauensee.

No. 157. Orthoptera from Ulithi Atoll, Western Caroline Islands, with a description of a new subspecies of Valanga, by James A.G.Rehn.

No. 158. Description of two new fresh-water fishes from Columbia, by Henry W. Fowler.

No. 159. Description of seven new fresh-water fishes from Peru, by Henry W. Fowler.

Franklin L. Davis -

Science News Letter, published weekly by Science Service, Washington, D.C.

This gift consists of 430 bulletins dating from June 1934 through 1941. These bulletins will be library-bound for convenience of readers.

This long-period subscription serves as a basis for comparative cost under varying subscription rates, and directs attention to the economy of the two year subscription privilege and to the increased value of back numbers.

Science News Letter subscriptions - for two years $8.00; for one year $5.00; 15 cents per copy; back numbers more than six months old, 25 cents.

Comparative Costs:

For two years	104 copies cost $8.00		430 copies cost $ 33.00
For one year	52 copies cost $5.00		430 copies cost 41.35
		At 15¢ per copy,	430 copies cost 64.50
		Back numbers at 25¢ " "	430 copies cost 107.50

The Mazamas -

Mazama, Vol. XXVII, No. 12, 1945.

Federation of Mineralogical Societies, Bakersfield, California -

Bulletins:

Mineral Notes and News, No. 93, June 1945; no. 102, March 1946.

Ward's Natural Science Establishment, Rochester, New York -

Bulletins:

Natural Science, Vol. XVIII, No. 5; Vol. XIX, No. 1 - 2, 1945; Vol. XIX, No.3, 1946. Trade Catalog No. 456 and 433.

D.V.Hill, Salem, Oregon -

Catalog No. 18.

Margaret Hughes,
March 15, 1946.

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LUNCHEON NOTES - THURSDAY, MARCH 7, 1946

Twenty-seven geologists indulged in spirited conversation while eating creamed chicken on toast, until Chairman Hancock called for a showing of specimens..... Ada Henley passed a small piece of translucent material which several thought to be a kind of resin but which Miss Henley said was the thoroughly hardened albumen of a pullet's egg which had no yolk, and from which the shell had been removed. Some of the experts might have been able to classify it had the shell been intact..... Dr. Baldwin showed a fossil Pecten and Miopleiona which he had found near the spot where Mr. Hancock had picked up the fossil head of a whale..... Hugh Miller Jr. told of his experiences in and near Japan after the surrender. He had seen an active volcano on the most northern of the Marianas Islands..... Lloyd Ruff mentioned the various degrees of interest different people take in the same specimen, citing the reactions of Dr. Packard on discovering a dust-covered rare fossil under a laboratory table at the university..... Dr. J.C. Stevens called attention to the coming lecture by Dr. Arthur Greenhall on "The Saga of the Vampire" on March 20 under the auspices of the Oregon Museum Foundation. ..... Rose Jennings said that she had seen Carl Richards' colored pictures of the total eclipse of the sun. She considered them to be very marvelous.

O.E.S.

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LUNCHEON NOTES - THURSDAY, MARCH 14, 1946

Doctors Booth and Jones got to the meeting in time to get seats at the head table, but Dr. Adams, true to the ideals of the trio, was the last of the twenty-one geologists to arrive..... Dr. Wright and Miss Hutsell of Pasadena, California, were guests..... Franklin L. Davis reported that he had 53 names on the subscription list for Roy Chapman Andrews' book "Meet Your Ancestors," and was prepared to issue receipts to all who would pay at that time..... Mrs. Hugh Miller showed a small but pretty specimen of chrysocolla (hydrous silicate of copper) from Globe, Arizona..... F.W.Libbey brought a small piece of fused sand that was picked up about two hundred yards from the spot where the atomic bomb was exploded in New Mexico..... Dr. Courtland L. Booth, recently returned from the southwestern states, exhibited a remarkable and very rare specimen of mammillary malachite taken from the Mammoth mine at Tiger, Arizona, before 1900, since when no similar pieces have been found..... Dr. Wright said that he has secured a field ambulance to use in his trips for specimens so that he will not have to return to town for sleeping quarters in the midst of an exciting specimen hunt..... Dr. Jones, master of ceremonies for the annual banquet, and Dr. Baldwin, chairman of the program committee for the same event, had time for a few comments before chairman Hancock banged the gavel for adjournment.

O.E.S.

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QUAKES: IT COULD HAPPEN HERE

An interesting article concerning the possibility of earthquakes in the Northwest was printed in the Sunday Edition of the Oregon Journal, April 7, 1946. Dr. W. D. Smith, professor of geology at the University of Oregon, furnished the geological background.

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ANNUAL BANQUET-1946

STANLEY PHOTOS

ELEVENTH ANNUAL BANQUET

Director	Mrs. Louis E. Oberson

COMMITTEE CHAIRMEN

Program	Mrs. Mildred P. James
Place and Menu	Mrs. Courtland L. Booth
Decorations	Mrs. Lloyd L. Ruff
Program Design	Miss Dorothea Minar
Speaker	Dr. Ewart M. Baldwin
Tickets	Leo F. Simon
Reception	H. Bruce Schminky
Gifts	Earl Minar
Song Leader	Dr. Arthur C. Jones

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O F F I C E R S

1945	1946
PRESIDENT	
A. W. Hancock	Dr. John Eliot Allen
VICE-PRESIDENT	
F. W. Libbey	Raymond Baldwin
SECRETARY	
Miss Ada Henley	Miss Ada Henley
TREASURER	
Mrs. H. Mildred Stockwell	Mrs. H. Mildred Stockwell
DIRECTORS	
Dr. Courtland L. Booth	E. N. Bates
Leo F. Simon	Leo F. Simon
E. N. Bates	Dr. Courtland L. Booth
Lloyd L. Ruff	J. Dean Butler
Raymond L. Baldwin	A. W. Hancock

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M E N U

Salad Bowl
Cabbage - apple - celery - carrot

Baked Ham

Potatoes - gravy Green peas

Hot home-made rolls Butter

Apple pie

Coffee Tea Milk

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P R O G R A M

GREETINGS President A. W. Hancock

TOASTMASTER Dr. Arthur C. Jones

UFFICERS OLD AND NEW

A Review of 1945 A. W. Hancock
The New Year Dr. John Eliot Allen

ROCK CAVITIES AND MINERAL FILLINGS
Dr. Lloyd W. Staples Professor of Geology
University of Oregon

INTERMISSION

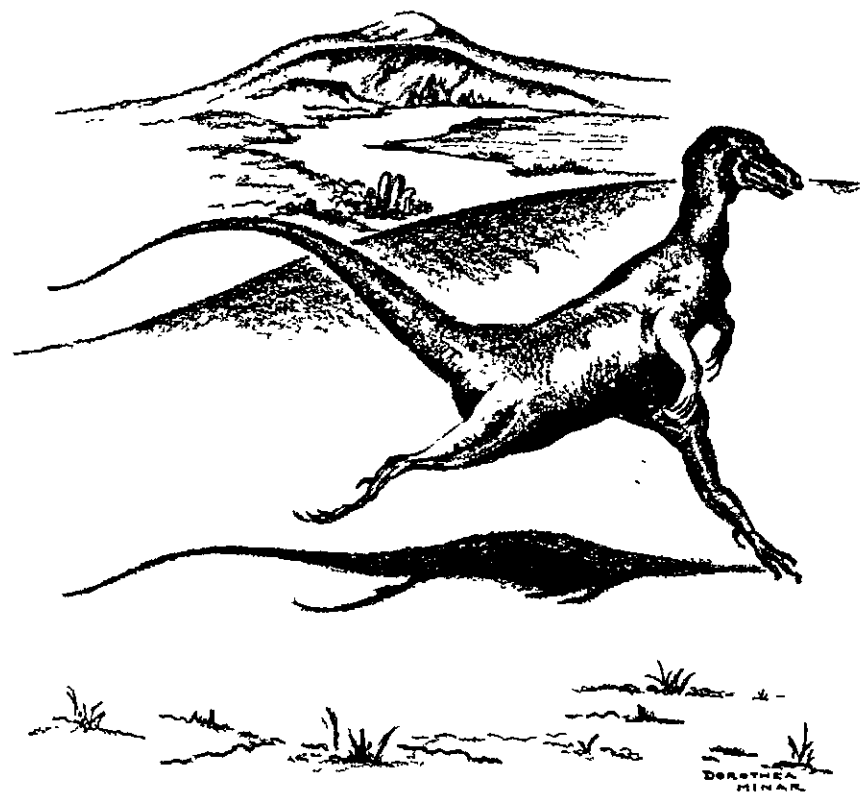
FOSSIL CHAPEAUX, LTD.

SOCIETY SONGS

SIX GEOLOGISTS OF OREGON

_____******_____

Eleventh Annual Banquet



March 16, 1946.

GEOLOGICAL SOCIETY NEWS LETTER

Volume 12, No. 6 June 1946

SOCIETY ACTIVITIES

LECTURES: On the second and fourth Fridays of each month at the auditorium (third floor) of the Public Service Building, 920 S.W. 6th Avenue at 8:00 p.m.

TRIPS: Watch for announcements of at least one trip each month if the old tires can take it. Make your desires known to trip chairman, H. Bruce Schminky.

LUNCHEONS: Every Thursday noon in the Victory Room of the House of Hicks restaurant, 425 S.W. Taylor Street, between S.W. 4th and S.W. 5th Avenues. Luncheon 75¢.

MEETING ANNOUNCEMENTS

Friday June 14 — Talk and colored movies of Antarctica by Carl Eklund, biologist for Admiral Byrd during exploration in 1939-41.

Friday June 28 — Oregon's Newest Building Material, by Dr. John Eliot Allen, Oregon Department of Geology and Mineral Industries.

FIELD TRIPS

Meet at Front and Yamhill Street opposite the large Market Building, 9:00 A. M., unless otherwise arranged.

Sunday June 16 — Lewis River Trip led by Earl Minar.

Sunday July 14 — Roads End Trip led by Mr. A. D. Vance. Meet at Roads End at noon. (This is 95 miles from Portland) 5 miles west of Otis Junction on the Coast Highway.

Sunday Aug.10-11 — Paulina Buttes Trip led by the Deschutes Geological Society. Tentative plans are to meet Saturday evening, August 10th, in Bend for a campfire get-together. The trip to Newberry Volcano will follow the next day.

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Members of the Geological Society were saddened by the unexpected death on June 1 of Miss Abigail Neikirk, a member of the society since 1941.

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This is the first issue of the NEWS - LETTER to be printed on the new multigraph machine recently purchased by the Geological Society of the Oregon Country.

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FAUNA AND FLORA OF THE TYRRELL QUARRY, SELAH, WASHINGTON

by

George F. Beck*

The writer has just received a preliminary report from Dr. Chester A. Stock concerning two hipparion (Nannipus) teeth, and a rhino tooth sent to the California Institute of Technology through the courtesy of Mr. Leo Tyrrell of Selah. This material comes from the fossil site located by Mr. Tyrrell several miles northwest of Selah. Of particular significance is the fact that these primitive hipparion teeth have been found both above and below the leaf quarry. They not only corroborate Dr. Chaney's opinion that the leaves are lowermost Pliocene, but indicate also that the sandstones of the Selah-Naches ridge are throughout essentially of a given age.

What we shall term Tyrrell ridge and Tyrrell quarry have now become the most significant fossil locality in the Ellensburg formation. They have by virtue of these recent finds probably exceeded the importance of Bull quarry in the Kittitas Valley from which the leaves were taken in the 1890's upon which Dr. Knowlton dated the Ellensburg sandstones and the underlying Columbia basalts. The fossil teeth taken from Bull quarry and sent to Dr. Condon at the same time, and later named and described by Dr. Merriam (as Hipparion condoni) seem to have become lost and are not available for current studies.

It was in the same general area as the Tyrrell quarry that the writer was given a rhino humerus by Wally Smith of the Selah schools almost ten years ago.

The Selah-Naches ridge is one of the two areas described as typical of the Ellensburg formation by Smith in folio 86 of the U.S. Geological Survey. It is likewise the area from which Merriam and Buwalda gathered some hipparion bones about 1917, and compared with what they took to be Equus (Plesippus?) teeth and bones from Hanford to demonstrate that the sandstones of the Yakima and the "White Bluffs" of the Pasco basin are considerably different in age.

Other leaf sites have been found but not exploited from the Selah-Naches ridge. Mr. Tyrrell has done most of the collecting from the quarry of his name and has turned up some significant specimens. These have been sent to Dr. Ralph Chaney at the University of California, Berkeley. Reports on both the fauna and flora of the Ellensburg formation are in progress and with the war concluded we may hope to see them in print soon.

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FOSSIL WOODS OF THE COLUMBIA GORGE

Several months ago a collection of about 40 woods was received at Ellensburg from A. H. Hoffman of Home Valley. These woods are said to have been collected from Bonneville to Rock Creek, and from various levels and conditions of deposition. They probably represent on the whole the period of the Columbia lava flows, or in general the Miocene epoch of from 5 - 30 million years ago. While some of these materials undoubtedly come from extensive sedimentary beds, such as the Eagle Creek formation, others probably come directly from the basalts and tie in with the Russell series of central Washington. This last is particularly true of the eastern limits of the Gorge.

*Central Washington College of Education, Ellensburg, Washington.

The area in question is historic in even a geological sense for here it was that David Douglas discovered the first fossil logs reported from the West (described in his journal). It was here also that Dr. J. C. Merriam encountered the Ginkgo leaf (Scribners Magazine, vol. 81, no. 2, pp. 130-34, Feb. 1927) that set the writer on the search for Ginkgo logs in central Washington. Here, also, the writer casually picked up a fragment of cedar of Lebanon wood on McCord Creek --- a fossil wood so intimately related to Asia Minor and the Old Testament. Here, Dr. Ralph Chaney of Berkeley began his research upon the fossil forests of the West ("Flora of the Eagle Creek Formation" --- Contr. from Walker Museum, vol. 2, no. 5, 1920.)

In Hoffman's collection of woods from the Gorge are the first elm, oak, sycamore, fir, and pine that I recall having seen from this area. There are several new examples of the Asiatic conifers, cedar of Lebanon, and keteleeria. The Chinese "redwood", Glyptostrobus, is another possibility. There is one certain true redwood and a number of probabilities. While no ginkgo wood has been recognized as yet from the Gorge, the writer feels that it will furnish the first examples to be found outside of central Washington. As usual, most of these early Tertiary hardwoods defy attempts to classify them. Several of the abundant leaf types encountered by Dr. Chaney such as red gum, hickory, maple, and oak have been found sparingly or not at all among the Gorge woods. These woods are, however, abundant among the Russell series further eastward and will undoubtedly occur in future Gorge collections of petrified wood.

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PERSONALS

Ellen Louise James will graduate in Geology from Oregon State College on June 9, at Corvallis, receiving her degree of Bachelor of Arts. She is, so far as the editor knows, the first Junior member of the Geological Society to become a full-fledged geologist, having been in the Society since 1940, or a year before entering college.

Lotus Simon will receive the degree of Bachelor of Arts in Biology from Reed College on June 9. Her thesis is on the ecology of Boiler Bay and she has been assistant to Dr. Macy during the last year. She will go to the University of Wisconsin next fall as graduate assistant in the Department of Zoology.

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NEWS NOTE

Dorothy Dale, daughter of Mrs. May Dale, was chosen Queen of the May Fete at Roosevelt High School. She reigned at the Coronation Ceremonies held May 10th at Roosevelt.

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NEW MEMBERS

Mr. and Mrs. J. M. Blair, 3201 Broadacres, Apt. 5567, Portland 17, Oregon
Mrs. Jacqueline Capelle, 8727 North Druid Avenue, Portland 3, Oregon.

RETURNING MEMBERS

Mr. and Mrs. Ray E. Mackenzie, 500 Pittock Block, Portland 5, Oregon.

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GLACIAL MAP OF NORTH AMERICA

A committee of 16 outstanding glacial geologists, headed by R. F. Flint of Yale University, was appointed in 1939 by the National Research Council to prepare a Glacial Map of North America. This map has been published as Special Paper 60, in two sections in color, on a scale of 1:4,555,000 or 1 inch equals 72 miles, by the Geological Society of America, 419 West 117th Street, New York, (Price $2.00).

The base map is a Lambert conformal conic projection which means that the parallels of latitude are concentric and the meridians are straight radiating lines. On this projection any small region has an undistorted shape, while areas are distorted less than 6 percent at a maximum. The base map shows land-form lines (generalized contours at 500, 1000, 2000, 4000, 6000, etc. feet) in brown and sea-floor form lines (at 500, 1000, and succeeding 1000 foot depths) in blue. Much of this data is from original sources and has never before been published, particularly in the northern regions and along the sea floor of the Alaskan coast.

The glacial conventions consists of colored areas, representing the various stages and sub-stages of glaciation, as well as the extent of outwash, glacial lakes, and areas of marine submergence. In Oregon, Wisconsin glaciation is shown in the Cascade, Wallowa, Elkhorn, Strawberry, and Steens mountains. Eight glacial lakes appear in the Klamath, Fossil Lake, Summer-Abert, Goose, Warner, Guano, Harney, and Alvord basins. Existing glaciers are shown on Mount Hood and the Three Sisters.

Symbols in blue show glacial striae, drumlins, boulder trains, eskers, erratics (omitted from the Willamette Valley!), fossils, varved sediments, outlets of glacial lakes, etc.

Small inset maps consist of a Glacial Map of the North Polar Hemisphere, and a map showing the principal loess distribution in the central United States.

Of particular interest to the writer is the great Alaskan trough, where the sea-floor drops from 500 to more than 20,000 feet in from 50 to 75 miles; the tremendous areal extent of the present day Alaskan glaciers; and the large areas of Alaska which have never been glaciated. Glacial Lakes Lahontan in Nevada and Bonneville in Utah stand out on the map as great connected bodies of water, as does Lake Agassiz farther north and east, and other glacial lakes in Canada.

An accompanying paper gives the extensive bibliography used in part in the compilation of the data. For example, 32 papers on Oregon are listed. Much additional information was obtained from geologists familiar with local areas, and these men are also listed on the map itself.

J.E.A.

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CHANGE OF ADDRESS

Mr. and Mrs. Marcel Sandoz, Box 835, Redmond, Oregon.

Miss Helen C. Brady, Hq. U.S. Forces, Austria, APO 777, C/o Postmaster, New York City.

Dr. and Mrs. Harold C. Harrison, #1 Fort Sewall, Marblehead, Massachusetts.

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G.S.O.C. BAUXITE FIELD TRIP

by

R. S. Mason

Nearly 50 members and guests in 12 cars made the 100-mile trip through the Washington County "Iron Ranges" Sunday, April 27th. A light drizzle during the forenoon served merely to dampen the dust, but by mid-afternoon it was really raining.

The party left Front and Yamhill promptly at 9:10 a.m., and thereafter endeavored to keep the leader, Ralph Mason, in sight. Traffic signals, freight trains, and Sunday traffic all conspired to sever various segments of the group. Throughout the trip the first stop was at Cooper Mountain where Texas Oil Company was drilling a test well which had reached a depth of approximately 8650 feet. The party then drove through Hillsboro and North Plains to the Hutchison-Nixon bauxite deposit on Pumpkin Ridge Road, just west of McKay Creek. After lunch some of the group collected pisolitic and porous granular specimens of ferruginous bauxite from an old open cut. Several of the Alcoa Mining Company drill holes were inspected, and a brief discussion of the geology was given by Mason.

The party then traveled to the Hendrickson farm area on Dixie Mountain which lies on the east side of McKay Creek. Here a pit excavated in ore was inspected. Alcoa has been shipping about a car a week from this cut, the sides of which showed an excellent section from the surface to the pisolitic horizon which occurs near the top of the ore section.

The party then continued on north and east to the northern end of the Skyline Road, then southeast to the Richfield test well which was down to a depth of approximately 5500 feet at the time. The group was particularly impressed by the type of equipment and installation in general that characterized both wells, which was in marked contrast to the usual rig used by stock companies in the State in the past. At this point the party broke up - muddily.

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LUNCHEON NOTES, THURSDAY, MARCH 28, 1946

It was a record turnout, according to President John Allen. I would not be surprised if he was right, the official count was 48. Considering the weather, the size of the crowd augurs a year full of interest and activity. Taking another point of view, it may have been in anticipation of seeing the pictures taken at the annual banquet, which, however, were not forthcoming.....President Allen handled the large crowd very well - must be his experience handling the school kids.

Guests were rather numerous today: Mr. Davis introduced Mr. Larsen, meteorologist for the U.S. Army Engineers, graduated from O.S.C. and more recently from the Army; Mr. Reeves introduced daughter Charlotte; Miss White presented four guests - Mrs. Swenson, Mr. Skerner, R. Engle, and C. McDaniel; Ex-president Hancock introduced Mrs. Kennedy, Mrs. Huddle, and Miss Charleme Rice; Mr. Boylan had his son Harold along. Other guests were Mr. Reynolds and Mrs. Cheney.

Some nice samples were passed around and included a polished piece of feldspar in blue chalcedony from the Mojave Desert, California (Miss Henley); wulfenite (lead molybdate) brown variety, from the Los Lamentos mine, Chihuahua, Mexico (Dr. Booth); a fossil nut (?) from the Trask River, Oregon (Mr. Orr), and

a Jurassic Ammonite from Dayton, Nevada. Swell samples - keep up the good work.

Hancock (again) mentioned the need for assistance in handling his talks to children's groups from schools - said he had to turn down one group today. In this connection John Allen has also been giving talks before the children in school. Dr. Booth also commented on public education in the geological sciences as well as making arrangements for juvenile membership in the Society. This should be one of the strongest aims of the Society - to interest children in geology and related subjects. Develop the interest when they are young and you will do them a favor and insure a stronger Geological Society of the Oregon Country.

Davis announced that the chemical charts had been received and would be delivered to those who ordered them at the Friday night meeting April 12. He also showed a copy of R. C. Andrews "Meet Your Ancestors" which had been borrowed from the library - and as usual pawned the book, this time to Dr. Adams, to return.

If you haven't paid your annual dues, you had better hurry.

President Allen announced Mr. Bert Boylan as the new program chairman, succeeding Al Vance, who has done a mighty fine job. Mr. Boylan was formerly president of the Deschutes Geological Society.

Overheard: comment directed to Mr. Hancock - "I know you are a fossil - man."

With that the meeting was adjourned.

Tom Eakin

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LUNCHEON NOTES - THURSDAY, APRIL 4, 1946

Of chief interest today were the varied specimens shown. Mr. Vance, who with Mrs. Vance "took a ride" last Sunday to the Woodland-Kalama area, produced from his pocket two nice crystal formations; one showing several stages of deposition topped with heulandite crystals, and another of small quartz crystals; also a fossil from the John Day, and a tiny rodent skull with several teeth (which prompted someone to inquire if it was a "pocket gopher"). Other fossils, brought by Mr. Hancock, included foot bones of the ground sloth and mastodon teeth from the Deschutes River; some vertebrae taken from Gateway, Oregon; and the point of a tusk found in the rhyolite above the floor of the John Day River. The vertebrae Dr. Jones suggested might be of Eocene age. A piece of green vein filling from Camp Lockett, California, was shown by Dr. Jones and identified by John Allen as a smear of epidote on the outside. Dr. Booth, whose contributions are always outstanding, brought some Arizona perlite containing obsidian inclusions, obtained from his recent southern trip. John Allen showed some of the finished product of perlite being mined on the Deschutes - a volcanic glass containing two to six percent water (the black nodules are known as marekanite). He also brought a square of acoustic plaster made of the same material, produced with wallpaper attached, so that the wall can be set up with the wallpaper right on it; also an ashtray made of perlite. The finished product is cheap to produce and is as fireproof as gypsum board. The mine is on the Deschutes River about 12 miles south of Maupin, and the plant is located at St. Helens. Incidentally, we were told that the man who located the mine receives $100.00 a month for 50 years for his discovery.

Ada Henley

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LUNCHEON NOTES - THURSDAY, APRIL 11, 1946

Twenty-two members attended - no guests. Pres. John Allen presided.... Everyone brightened up when trip chairman, Mr. Hancock, announced that a field trip had been planned for Sunday, April 27. Appetite for field trips which have been scarce during war years was keen. Mr. Mason is to lead the group. .....Dr. Baldwin passed around an interesting specimen of "Tetracoralla" from Idaho.....Dr. Allen had brought "Tungsten Mineralization in the U.S.," by Paul F. Kerr, Columbia University...."So Long Ago" by E. Boyd Smith was also passed around. It can be purchased for $2.00 with discount.....A newly decorated banquet room was enjoyed - and so was the butter. Or was that but a figment of my imagination? .....We missed Mr. Davis. Lunch was over 15 minutes ahead of the usual time. It couldn't have been due to the absence of this worthy member??????

May Dale

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LUNCHEON NOTES - THURSDAY, APRIL 18, 1946

Twenty-five members and guests of G.S.O.C. with Vice-President R.L.Baldwin in the chair had gathered around the new tables in a newly finished dining room at the House of Hicks, formerly the Winter Garden, when Dr. Courtland L. Booth joined the group with a blodk of natrium chloride which stole the show from the pitted pebbles from Ruckle Creek and photographs of the annual banquet brought by Orrin Stanley and the piece of light-weight volcanic ash with opal "setting" from Baker County, which F.W.Libbey thinks may enter the local field as a light-weight concrete aggregate.

Guests were Dr. Beck and Bruce Dieatrick from Ellensburg and Mercedeyse Westbye, the new secretary of the Oregon Museum Foundation. Dr. Beck has located a new petrified wood field which he offered to show to the G.S.O.C. if it will make the pilgrimage to the site. He also told of a recent visit to the Coulee Dam.

Mrs. Stockwell had a recent copy of the "Geode", published by the Salem Geological Society, on the front cover of which was a picture that she said looked like a baked potato. Well, one can eat a baked potato, but a geode, beautiful though it may be, is still indigestible.

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LUNCHEON NOTES - THURSDAY, APRIL 25, 1946

Carl Richards, member of the Society and president of the Salem Geological Society, was a visitor at the luncheon and suggested a field trip to Salem to visit the Falls City sedimentary rock or decayed basalt.....Mrs. Warner, who brought her daughter as a guest, passed around an exhibit of amygdules..... A. W. Hancock showed an agate slide showing how a saw can be used in polishing. .....Dr. Booth offered samples of smithsonite from New Mexico, where it is getting quite scarce.....Lloyd Ruff introduced a former member just out of the armed services, Paul Howell, who described a visit to the University at Warsaw, Poland, where the professor of geology took him to view the ruins of the library and laboratory, where everything had been destroyed. The professor made a plea for American textbooks to help rebuild the library. Dr. Adams suggested making a collection of books to send, and Mr. Howell promised to find out if such a

shipment could be sent at this time.....John Robinson passed around an example of "cross-chromatic dispersion" which turned out to be a good parlor game..... Mrs. Viola Oberson offered a picture of conditions in Switzerland as told to her by visitors to this country.

Miriam Shepard

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LUNCHEON NOTES - THURSDAY, MAY 2, 1946

A visit to the Smith Rocks tunnel was described by Mrs. Clyde Woodard (Florence Iverson) of the Deschutes Geological Club.....Dr. Jones passed around a specimen of vesicular lava which had poured out during the last eruption of Vesuvius, and in which had been embedded a fascist coin. He stated that this is an old type of souvenir, since an uncle of his had brought back a similar specimen from Italy in 1905.....As a boost to the membership committee, President Allen suggested that more guests be brought to the meetings.....Miss Stockwell displayed a copy of the Arizona Highways magazine.....Mr. Stanley announced that he and Mrs. Stanley would show pictures of the West Coast of Vancouver Island the next evening at the meeting of the Oregon Agate and Mineral Society..... Dr. J. C. Stevens spoke of the progress of the museum campaign and chided the members for being dilatory in making contributions. Miss Henley reported that she is telephoning the members to remind them that funds are needed, and that unless there is wider popular support the campaign cannot succeed. She suggested that the atmospheric pressure of Portland was responsible for the slowness of the members in contributing.

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Miriam Shepard

LUNCHEON NOTES - THURSDAY, MAY 9, 1946

The regular Thursday luncheon saw 28 members and guests present. One guest who had been here previously was Ensign Schneider. Dr. Booth made the introduction..... Specimens included those of Al Vance from the Woodland-Kalama locality. Quartz, stilbite, and heulandite were among his recent finds. Vance reported that the cuts are just about completed and very little additional blasting is likely. Bruce Schminky passed around trilobite and ammonite specimens obtained from an unknown locality. Mr. Boylan passed around a sample of coprolite replaced by limonite. Messrs. Hancock and Booth got to looking around again and naturally enough obtained some nice fossils. This trip was just out of Arlington between Alkali Creek and Eight Mile Creek. The fossils may have come from the Shutler formation (of Hodge). The described route probably could not be followed so readily unless a guide was along. Seems to be the germ of a G.S.O.C. field trip. The report is that a large mastodon tusk was found nearby several years ago. The suggestion was made that locality might be the same as that examined a few years ago by Dr. Horner and described in the Oregonian.....Mr. Hancock announced that the Agate and Mineral Society is to conduct a field trip May 19, 1946, to the Kennedy Ranch. The meeting place is at Willowdale, 9:00 a.m., from which the caravan will leave in a body for Kennedy Ranch to collect thunder eggs and anything else of interest. .....Bruce Schminky announced a tentative trip by the G.S.O.C. up the west side of the Willamette River to Peach Cove and New Era thence to Canby (if the ferry is operating) and return. This may be taken if there is no trip scheduled for Memorial Day.....President Allen announced the two coming Friday evening programs: May 10 - Ormond R. Bean, "Collecting Around the World," and May 24 - Roy Clark, "Birdseye View of Mexico."....It was announced that Mr. Klatt contributed $50.00 to the Oregon Museum Foundation fund. Have you made your contribution yet?.....The meeting was adjourned when Pres. Allen announced that beginning May 16 the luncheon will be 75¢.

Tom Eakin

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GEOLOGICAL SOCIETY NEWS LETTER

Volume 12, No. 7 July 1946

SOCIETY ACTIVITIES

LECTURES: On the second and fourth Fridays of each month at the auditorium (third floor) of the Public Service Building, 920 S.W. 6th Avenue at 8:00 p.m.

TRIPS: Watch for announcements of at least one trip each month if the old tires can take it. Make your desires known to trip chairman, A. W. Hancock. Phone SU 5285.

LUNCHEONS: Every Thursday noon in the Victory Room of the House of Hicks restaurant, 425 S.W. Taylor Street, between S.W. 4th and S.W. 5th Avenues. Luncheon 75¢

MEETING ANNOUNCEMENTS

Meetings to be announced later.

Thursday July 18 — See page 61 about a joint meeting with Salem.

FIELD TRIPS

Sunday July 14 — Roads End Trip led by Mr. A. D. Vance. The group meets at Weaver's Agate Shop which is on the road to Roads End as you start down the hill to the beach. This is approximately 95 miles from Portland and one should start early enough to assemble at 10:00 a.m. Mr. Russ Norton, a member of G.S.O.C., and some members of the North Lincoln Beach Agate Society will join us there. Bring your lunch.

Sunday Aug. 10-11 — Paulina Buttes Trip led by the Deschutes Geological Society. Tentative plans are to meet Saturday evening, August 10th, in Bend for a campfire get-together. The trip to Newberry Volcano will follow the next day. Any additional plans will be published in the August number of the NEWS - LETTER.

ANNUAL PICNIC

Friday Aug.23 — This date has been tentatively set for the annual picnic to be held in Mt. Tabor Park. Miss Lotus Simon is in charge. Watch the August issue of the NEWS - LETTER for further details.

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NEW ADDRESS

Mr. and Mrs. Ray E. Mackenzie, Route 11, Box 19, Milwaukie, Oregon.

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The annual list of members in good standing will be published in the August issue of the NEWS - LETTER. If you want your name included, be sure that your dues have been paid. Notify Miss Ada Henley of change in address or telephone number.

A GEOLOGIST'S WEEKEND IN EASTERN OREGON

by

Warren D. Smith

A report of some prospective archeological sites which might prove to be worthy of investigation on the Warm Springs Reservation and of puffs of steam alleged to have been seen on Bachelor Butte lured Dr. Cressman and the writer of to eastern Oregon a few weeks ago.

The trip via the Willamette Pass to Lapine and to Bend enabled us to get a good view of Bachelor Butte, but no sign of activity in that vicinity could be noted. On arriving at Bend we met a Mr. Ernest, a vigorous young skier, who claimed to have seen what he thought were intermittent puffs of a light cloud issue from near the base of the Butte. As he was several miles away he could not be sure. He promised to report again after a ski trip into the area. As yet we have had no further confirmation of activity in that vicinity.

Of course it is quite within the possibilities that a renewal of volcanic activity may be manifested in that area, but we are inclined to attribute this phenomenon to a snow fall which would send up a cloud of snow.

This report following the others of 'burps' within Crater Lake has given rise to all sorts of conjectures and has aroused great interest in the Bend country and in other parts of the state as well. While at Bend we were interviewed by an enterprising Oregonian reporter who was most anxious for a 'story' but alas we could offer nothing definite.

As Dr. Jagger has said, in his recent book Volcanos Declare War, "Our Cascade volcanos are not dead." And so, as for this 'eruption' on Bachelor--- "it could be," but we have as yet no valid evidence of a renewal of volcanic activity anywhere in the Cascades at present.

Arrived in Bend we met Phil Brogan, an old Oregon student who keeps the country well informed concerning geological discoveries in the Oregon country and has made an enviable reputation as a scientific reporter and interpreter.

On taking a stroll down the main 'drag' of Bend after dinner we ran into Dr. Allison and four of his students from the State College. They were on a field trip down through the lake country to the south where Dr. Allison has carried on his valuable researches for several summers. At the time of our meeting the talk finally got around to the baseball game which was played that afternoon in Eugene, but the outcome of which we had not yet learned. There was some good-natured banter as to the merits of our rival teams, but we didn't place any bets. Later on we learned to the writer's great satisfaction that the Ducks had won and with it the Northern Division championship.

On Saturday in company with Judge Sawyer, Phil Brogan, and State Highway Engineer Springer, we journeyed down to the Warm Springs Reservation. Being a geographer of sorts, as well as geologist, the writer took great interest in seeing a part of the new Madras Irrigation Project. This project will transform much of this country and add greatly to its habitability and productivity. No longer will the farmers of that region be subjected to the vicissitudes of dry land farming. Madras is already showing the effects and accommodations are hard to get there now due to the upsurge of business.

Then we plunged on down the long Vanora grade toward Warm Springs and midway in our trek Phil Brogan brought us up short by a fine road cut to show us where a State Highway engineer found some tree moulds in the tuffs. Ralph Chaney has described these in his paper on "The Deschutes Flora of Eastern Oregon." It seems that there is some question here as to the age of the formation. It looked to me, without very much study, to be Pliocene or very early Pleistocene. Chaney has determined some leaf impressions from a thin bed near the bottom of the section as being Populus, Salix, Prunus, and Acer.

Down near Gateway we picked up a few fragments of teeth and vertebrae which Furlong has tentatively identified for us as Hipparion.

The archeological sites were a disappointment, but we were shown an old camp site on Boulder Creek of U.S. soldiers in the early days of our occupation of this Indian country. From all indications there must have been a large body of troops, probably cavalry in there. From old mule shoes and other objects I would date this site as Post-Indian and Pre-Roosevelt.

Having bought a snack for lunch at the Warm Springs store we stopped along the creek in the bottom of the canyon. It was just one o'clock when we turned on the radio and heard very distinctly President Truman's dramatic speech to Congress dealing with the railroad strike situation.

Comments on this would best be left unsaid.

After lunch I visited the home of Forest Ranger Acteson who is well equipped for agate cutting and polishing and was shown some fine specimens from that part of the country and thunder eggs from Priday's ranch. It seems that all the agate hunters in the U.S. must have been to this famous ranch!

Later we all went up to one of Dr. Hodge's localities where some fragments of camel bones were found. Although I saw no rattler on the warm hillside I did see Dr. Cressman doing some sort of a dance there in the sagebrush and later was told that he heard one.

It was late in the afternoon when we turned south toward Bend. The late spring is a fine time to see this plateau country. There is a fascination in this scene, so different from our Western Oregon landscape. I can readily understand the feelings of the little freshman girl who came to the University some years ago from Eastern Oregon and one day was found crying in her room. When asked what the trouble was she blubbered "I can't see any rim rock over here." This country is certainly "high, wide, and handsome" and the people are different from the valley dwellers.

Much credit is due Dr. Hodge and his students who have mapped this great area and given us a picture of the geological events in the building of this region.

At Redmond we detoured for a short distance to see the excavations made by the U.S. Army to secure road metal for the Redmond Air Base. This pit exposes the largest accumulation of volcanic cinders I have ever seen. This is a place the G.S.O.C. should visit sometime, if not already seen by the members. I picked up two pretty good spindle-shaped breadcrust bombs in this pit.

Sunday morning we spent a pleasant hour in the home of Judge Sawyer looking over some of his artifacts, books, and beautiful garden.

(Continued on page 60)

EAST FORK OF LEWIS RIVER TRIP

"Giddyap Napoleon, looks like rain" could have been Earl Minar's song when he started out with his small caravan on the field trip up the East Fork of the Lewis River, Sunday, June 16th. It looked like rain, and it did rain a little, which probably had something to do with the small turnout. Only two cars turned out to follow the leader. One car carried Leo and Mrs. Simon and their daughter, Mitzi, who had her little daughter with her, and Leo and Helen Haven were in the other car. It seemed like old times to have Mitzi with us and how her daughter does worship Grandpa Leo Simon. This was the first trip for the Havens, but they are of the stock which formed the G.S.O.C., and a little rain didn't dampen their ardor. The writer rode with Earl and Mrs. Minar and Dorothea, which accounts for the whole party.

At 9:30 a.m. we left the Jantzen Beach Park, and within a few minutes were through Vancouver and in the open country breathing the good clean ozone. Not a speck of dust was in the air to mar the pleasure of the trip.

At the Heisson bridge we stopped for a minute to point out the leaf fossil locality to the new members, and turned up the East Fork of the Lewis River. The hills became higher and steeper and the stream was lined with fishermen. It stopped raining and except for the low hanging clouds which restricted the view the day was ideal. About 2 miles beyond the Sunset Guard Station we stopped for a council of war. Earl Minar and your scribe walked down the hill and found the site from which the spectacular diorite porphyry was quarried on the bank of the river just where Slide Creek adds its considerable volume to the East Fork of the Lewis. Boy, is the Lewis River a beautiful stream! Crystal clear, one can count the pebbles on the bottom under 6 or 8 feet of water.

It didn't rain enough to bother us at all, and it did feel good to be afoot in nature's wonderland again. Leo Simon was surprised and the rest of us were delighted to find the beautiful Squaw Grass in blossom at so low an altitude (a little over 1000 feet).

We sat in the cars to eat our lunch and Mrs. Haven divided a delicious berry pie with those who managed to rush over to their car when she cut it. Since some of the heavy eaters weren't along ye scribe managed to get there in time.

While we were eating lunch one of the company interested in getting out the monument stone drove up and told us that a boulder outcrop high on a ridge across the Lewis River was of the same granitic rock but it did not have the large phenocrysts which were found at the river edge. These outcrops are probably part of an intrusive mass which must underlie the mountains south of the river and crops out again in the Skamania mining district which the Society visited in 1935.

After all had visited the quarry the caravan started back, and perhaps a quarter mile toward the Sunset Guard station we stopped and, on foot, the men followed an old road back toward Slide Creek. The road was overgrown with tall grass and bush, and here we encountered the only unpleasant part of the trip. The bush and grass were wet and we all got the same way almost to our waists, but two black tail deer trotted along the road a short distance ahead of us and gave us one of those unexpected thrills which always make the field trips so delightful.

The outcrop of rock we found here was a finer grained, lighter colored rock without the large phenocrysts of the first quarry, but seemed to have been worked more extensively than the first quarry.

Returning to the cars we started home, and where our road joined the Yacolt Road, we stopped to hunt for zeolites. Several specimens were found, but not of fine quality. While we were here Mr. Richard M. Hoard and his wife joined us. They were returning from their summer cabin which is farther up the river than we had traveled. Mr. Hoard told us of a placer claim he had a short distance down the road and under his guidance we stopped and hauled out the plates from our lunch baskets and panned for gold. If we had had regular gold pans we probably would all be rich now, but with only plates to work with we couldn't even find color.

It was a perfectly dandy trip and Earl Minar gets a vote of thanks for a most interesting outing.

A. D. Vance

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NEW PUBLICATIONS

Chromite-bearing Sands of the Southern Part of the Coast of Oregon
by
A. B. Griggs

(Abstract) Chromite-bearing sands, commonly known as "black sands" because of their color, occur in the present beaches and on ancient raised beaches along the coast of Coos and Curry Counties, Oregon. Most of the deposits are on the lower terraces between Coos Bay and Port Orford. The black sand occurs in layers and lenses as much as 42 feet thick, 1,000 feet wide, and a mile or more long, and is covered with as much as 75 feet of overburden on the terraces. The deposits on the present beaches are transitory and vary from year to year. Besides chromite, the sands consist of quartz, olivine, pyroxene, zircon, ilmenite, rutile, garnet, magnetite, and epidote, and contain minute amounts of gold and platinum. The deposits were worked in a few places for gold late in the last century. In 1943 two plants were producing rough chromite concentrates, which were to be further concentrated to a grade of about 40 percent of Cr_2O_3 in a plant owned by the Defense Plant Corporation. The reserves consist of about 1,900,000 long tons of sand in deposits averaging more than 5 percent of Cr_2O_3, and 1,200,000 long tons of sand in deposits averaging 3 to 5 percent of Cr_2O_3. The report is a chapter in the series "Strategic minerals investigations, 1944," published by the U. S. Geological Survey as Bulletin 945-E, price 55 cents.

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Black Sands Minerals Described

Origin, composition, and economics of black sand and dune sand deposits of the Oregon Coast from Coos Bay to the Columbia River are described in a bulletin recently issued by the State Department of Geology and Mineral Industries.

The author is Dr. W. H. Twenhofel, one of the leading authorities on sedimentation and former head of the Geology Department at the University of Wisconsin. He made a detailed field study of the coastal region during the summer of 1943.

The concentrations of black sand contain magnetite, the magnetic oxide of iron, and ilmenite, a titanium mineral. Some of the deposits contain zircon, a mineral from which the rare metal zirconium is obtained. Chromite from which chrome-iron alloys are made is also present in many of the deposits.

A similar study of the Oregon Coast sands from Coos Bay southward was published in two parts by Dr. Twenhofel in the February and March issues of Volume 244 of the American Journal of Science.

* * * * * *

Willamette Valley Limestone

Farms of the Willamette Valley continually require a large quantity of limestone to neutralize acidity and to provide calcium for crops. The amount of limestone which a farmer can use depends mainly on cost and one of the principal factors in this cost is transportation. Most of the limestone used in the Willamette Valley is now brought in by railroad from deposits in eastern and southern Oregon, because these deposits are much higher grade than known Willamette Valley deposits. If high-grade limestone could be found in the Willamette Valley, transportation cost would be lowered and farmers could use more of the needed limestone.

These facts together with descriptions of Willamette Valley deposits are discussed in a short report just issued by the State Department of Geology and Mineral Industries entitled "Reconnaissance Geology of Limestone Deposits in the Willamette Valley, Oregon," by Dr. John Eliot Allen. It is No. 15 of the series of G.M.I. Short Papers.

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LUNCHEON NOTES - THURSDAY, MAY 16, 1946

Anniversaries are the lot of the membership this month. Miss Margaret Hughes announced that she would leave May 18 for Toronto, Canada, in order to attend the fiftieth anniversary of her graduating class at St. Catherine's. The train is too slow, and so she is taking to the air. .....Mr. Stanley told of his plans to leave May 23 for Mt. Vernon, Iowa, to take part in the 50th anniversary of his class at Cornell College. .....Mr. W. E. Reeves, a member of this organization and of the Salem Geological Club, issued an invitation to join the latter group in a field trip up the McKenzie River May 19, with Dr. Smith leading the outing. .....Vice-President Ray Baldwin, who presided at the luncheon, reported on a suggestion that had been made to meet in the Park Blocks during the summer months. The plan was tabled for further discussion. .....Mr. Bates brought to the attention of the group an article on the Cape York meteorite, the largest in the world, and the difficulties attendant upon its removal from Greenland. This led to a discussion of the Willamette Meteorite by F. W. Libbey. .....Attendance at the luncheon was the smallest in several weeks.

Miriam Shepard

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THE COMPOSITION OF OCEAN WATER*

Element	Percent	Element	Percent
Oxygen	85.89	Silicon	0.0001
Hydrogen	10.80	Fluorine	0.0001
Chlorine	1.93	Rubidium	0.00002
Sodium	1.07	Lithium	0.000007
Magnesium	0.130	Zinc	0.000007**
Sulphur	0.088	Phosphorus	0.000006
Calcium	0.042	Iodine	0.000005
Potassium	0.037	Arsenic	0.000002
Bromine	0.0066	Copper	0.000001
Carbon	0.002	Caesium	0.0000002
Strontium	0.001	Silver	0.00000003
Boron	0.001	Gold	0.000000001

*From "Raw Materials From the Sea."
**"This value appears to be ten times too great."
Chemical & Metallurgical Engineering, March 1946, p. 273.

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LUNCHEON NOTES - THURSDAY, MAY 23, 1946

A former student of Dr. Hodge, Noble Dutton, assistant director of the traffic safety commission of Portland, was a guest of Mr. Vance. .....Mr. Minar's daughter had brought him some specimens of ore from the copper mine near Salt Lake which included iron, lead, and copper. .....He had as his guest his brother, Edwin L. Minar, secretary-treasurer of the Salem Geological Society.....Dr. Allen, just returned from a trip to Eastern Oregon, displayed a specimen of white limestone from a vertical vein in Clarno andesite found east of Madras and north of the town of Grizzly. Another specimen which he passed around was tuff from a columnar formation of the rimrock near Burns, which has been erroneously called Harney rhyolite. .....Mr. Hancock showed a polished specimen which included moss agate, banded agate, and a cavity, which came from the confluence of Wilson Creek and Hay Creek 16 miles from Madras. .....He also outlined the trips which are in view for the group during the summer. .....Mr. Boylan reported on the semi-monthly evening meetings which the club is to enjoy. .....Dr. Booth reported that the zeolite cliffs near Oregon City had been pretty well worked over by last fall. He described a vein of a striking red that looks like hematite in the wall of the quarry, and a limestone similar to Dr. Allen's specimen from the Madras district.

Miriam Shepard

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NEW MEMBER

Miss Ruth Emily Coats, 702 East First Street, Tillamook, Oregon.

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SIGNS OF INFLATION! The price of U.S.G.S. topographic maps will double October 1st. Note: Members and Service Committee.

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(Continued from page 55)

At this point I would like to pay a little tribute to the Judge. Fortunate indeed is Bend and Central Oregon in having a man of such catholic interests. Not only has he done much for his city and Central Oregon, particularly in matters pertaining to irrigation, but he has aided and encouraged scientific work in the fields of geology and anthropology. We need more citizens like him.

Bend also is fortunate in having a live geology club. The dissemination of basic information about old Mother Nature and particularly geology is becoming increasingly important. Bend, more than many other cities of this state, is dependent upon its geological foundation as it is the gateway to some of the finest scenery in the Pacific Northwest.

After an uneventful, but pleasant trip home we arrived Sunday night refreshed for another week of teaching with some new information for our students.

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NEWS OF MEMBERS

Mrs. W. Claude Adams, Portland Center student for the past sixteen and one half years, will graduate from the University of Oregon this June. During this period Mrs. Adams has faithfully attended classes during the year and many of the summer sessions.

Her entire college program of credits has been earned in the Portland Center although she spent some time in the early nineteen hundreds studying music on the campus at Eugene.

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Mella White flew to Hampton, New Hampshire, to spend the summer with "The Eltons."

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Clara A. Nelson was recently elected to Delta Kappa Gamma, national honorary in Education.

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Miss Ellen James has accepted a position with the Geological Division of the Army Engineers.

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EARTHQUAKE

The earthquake that rocked the Northwest must have been foreseen by Mr.F.W.Libbey. An article in the June issue of the Ore.-Bin explaining the cause of the recent tidal wave that struck Hawaii was quoted in the June 25th issue of the Oregonian.

The article, based upon information released by the U.S. Geological Survey, told how the waves from an earlier quake traveled fanwise through the water at a speed of approximately 470 miles per hour until they spent themselves through distance or were intercepted by shorelines. They sped through the water at 80-mile crest intervals creating surface wave swells not more than 4 or 5 feet in height. The wave forms tripped on the shallow sea floor near the Hawaiian Island coasts and toppled over to create a series of racing super-breakers which by their momentum were able to reach as high as 55 feet above normal high-tide levels in certain exposed areas on the northern coasts.

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NEW EOCENE FOSSIL LOCALITY

A few Eocene marine fossils were recently found by Herbert Harper and W. D. Lowry along Butte Creek 2½ miles east of Scotts Mills in the Molalla quadrangle. They were tentatively identified by Dr. H. E. Vokes, professor of paleontology at Johns Hopkins University and a member of the U.S. Geological Survey, as Ficopsis sp. and Molopophorus (?) sp. indet. Dr. Vokes states that the Ficopsis is the shouldered type suggestive of F. meganosensis.

The fossils occur in a conglomeratic sandstone underlying an associated basaltic flow which forms rapids in Butte Creek. Harper, who is mapping the area and preparing his masters thesis, has found numerous well-rounded pebbles and cobbles incorporated in the basalt. He has named the unconformable overlying marine sandstone, which carries a fauna reported to be of lower Miocene age, the Butte Creek formation. These Eocene marine fossils are thought to be the most northeastern occurrence yet reported in Oregon.

W. D. Lowry BM 6 11

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MEETING OF SALEM GEOLOGICAL SOCIETY

June 28, 1946

Geological Society of the Oregon Country
Portland, Oregon

Gentlemen:

Jim Karle, representing the Astronomy Study Group of Portland, will speak before the Salem Geological Society, Thursday evening, July 18th. His subject will be "Geology Applied to Selenology." This as a friendly and reciprocal gesture between the Salem Society and the A.S.G. Carl Richards having appeared before us earlier in the year and gave a talk on his trip to Canada to observe and photograph the Total Eclipse of the Sun, about a year ago on July 9th.

A number of us and also members of the Amateur Telescope Makers (who are more or less inter-related) expect to accompany Mr. Karle, and will have a few portable telescopes along which we will use after the meeting, on the Campus Grounds, that is weather permitting, and we surely should have cloudless skys by the middle of July. If sufficient number to warrant it wish to make the trip, we thought we would charter a bus for the round trip. A 25-passenger bus will cost $35.98, and if 25 go the cost pro rata would be $1.44.

I write this with the thought that some of the Portland Geological Society might wish to accompany us, and this is an invitation to do so. We will endeavor to make this pilgrimage an interesting evening. We would expect to leave Portland about 6 or 6:15 from the downtown area, and leave for Portland as soon as convenient after the close of the meeting, possibly about 10:30 or 11:00 p.m. I have asked Mr. Schminky of your society to take the names of any who wish to go, and I will get in touch later.

The Astronomy Study Group meets the first Wednesday of the month in Room "A" of the Central Public Library at 7:00 p.m., and we wish to cordially invite you to any of our meetings. Mr. Karle, by the way, is to speak at our next meeting, July 3rd.

Cordially yours,
/s/ H. J. Carruthers, Vice-president
Astronomy Study Group, Portland, Ore.

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ROADS END FIELD TRIP

The Roads End trip was scouted in advance by Mr. A. D. Vance accompanied by Ewart Baldwin. The former to refresh his memory of trails etc. that were followed when this area was inspected under his leadership some eleven years ago. The preview left no doubt that this area would be of interest to members of the Geological Society.

Some interesting features occur along the way. As the trip will not be conducted enroute to Weaver's Agate Shop near Roads End, the members will be free to view the geologic wonders enroute at their own discretion.

Most of the way between Willamina and Grande Ronde, the highway is excavated in sediments that lie directly upon Eocene basalts. The sediments are also believed to be Eocene, perhaps of Cowlitz age. Some of the basal beds are composed of dark-colored basaltic grains such as those in the bank of the Yamhill River at Wallace Bridge, just a few miles west of Willamina.

The basalt may be viewed in a quarry at the mouth of Widow Creek, 85 miles from Portland and 6 miles this side of Otis Junction. At this quarry many very well-shaped "pillows" have been developed. Small scale columnar jointing in the periphery of the pillows points toward the center but do not extend farther than the outer shell. This type of basalt also contains many zeolites but perhaps not of good enough quality to attract the collectors. The following points were logged more closely near Roads End.

91 (miles from Portland) - Otis Junction.
95.4 - Turn off to right on Roads End Road.
96.0 - Top of hill overlooking beach.
96.1 - Weaver's Agate Shop where the group is to gather.
97.4 - Where the group will turn around and park before going down to the beach.

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LUNCHEON NOTES - THURSDAY, JUNE 6, 1946

Samples which Mrs. Warner passed around the table included a green semi-opal and a specimen of basalt from a new quarry south of Condon. .....Bruce Schminky had a piece of rock which looked like opal but is formed of siliceous clay. ..... Mr. Vance's contribution was a crystal from a broken geode found in the Kalama road cut, together with a series of ten colored Japanese photographs of buildings and landscapes, sent by his son-in-law, who is stationed near Tokyo. ..... Mr. Hancock described the field trip to be taken June 16. .....Dr. Stevens led in a discussion of the Columbia Valley Authority.

Miriam Shepard

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GEOLOGICAL SOCIETY NEWS LETTER

Volume 12, No. 8 August 1946

Society Activities

LECTURES: On the second and fourth Fridays of each month at the auditorium (third floor) of the Public Service Building, 920 S.W. 6th Ave., at 8:00 p.m. If announcements do not appear in NEWS - LETTER, see Oregonian or Oregon Journal, previous to regular meeting date.

TRIPS: Watch for announcements of at least one trip each month. If you know of or can lead a trip yourself, call A.W. Hancock, SU 5285.

LUNCHEONS: Every Thursday noon in the Victory Room of the House of Hicks restaurant, 425 S.W. Taylor Street, between S.W. 4th and S.W. 5th Avenues. Luncheon 75¢.

MEETING ANNOUNCEMENTS

Friday Aug. 9 — No regular meeting due to field trip.

Sat.-Sun Aug. 10-11 — NEWBERRY CRATERS TRIP led by Phil Brogan and Deschutes Geological Society. Meet at South City Limits Auto Court, Bend, at 7:00 p.m., on Saturday evening for informal campfire get-together and stunts. Rumor has it that Hancock will add one of his inimitable impersonations to the festivities. Early Sunday (8:00 a.m.?) the party will leave the Auto Court, the first stop being at the top of Lava Butte, 10 miles south of Bend, and now accessible by good road. Here Dr. Allen will deliver a short talk on the history of volcanism in central Oregon. Other stops will be made at an unnamed cinder crater, excavated to show the central lava plug; several stops will be made at the Paulina lava Buttes. Bring along your Newberry Craters and Bend topographic quadrangles, and your North Central Oregon geologic map; as well as Howel Williams paper. Those who have time to make a short trip Saturday afternoon may visit the Cove, southwest of Culver; Smith Rocks, northeast of Redmond; Lava Cast Forest, south of Bend; or other points of geologic interest.

Friday Aug.23 — Come one, come all! To the ANNUAL GEOLOGICAL PICNIC, held in the heart of an extinct (we hope) volcano, Mt. Tabor. Enter the park through the 69th Avenue entrance at S.E. Yamhill Street and drive west to the parking place near the crater. The festive board will be spread at 6:30 (you bring the food, and Miss Fowler, Miss Nelson, et all, will serve the coffee and cream). Miss Jennings, who is more or less in charge of the stunts, assures us that some of the most worthy potentates of the society will parade their talents. She only has now to convince the potentates. We also have assurance from the Salem G.S.O.C. that the weather will be balmy (they chased away the rain for their star-gazing night, so they ought to be able to arrange this little thing for us). It might be noted that there will be no moon during the program, but that should not discourage any young hopefuls. They can always stick around until it comes up at 1:15.

Menfolk who feel husky are urged to come early and help arrange the benches in the crater-auditorium.

Friday Sept.13 — "Quartz and Mica Mining in Brazil", with colored slides, by James F. Bell, assistant to the president, Portland Gas and Coke Company. This discussion of one of the most important "war babies" of all, should prove of great interest. Quartz, used in making frequency-regulating plates for radios, had the highest of priorities during the war.

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OSBORN'S PROBOSCIDEA

by

Warren D. Smith*

The Department of Geology at the University has just received a gift of very great interest to students of Paleontology -- the monumental two volumes on the Proboscidea (Elephants and Mastodons) by the late Henry Fairfield Osburn, the great authority on Mammals.

The gift is from Eustace L. Furlong, formerly of the California Institute of Technology. Mr. Furlong as some of you may know had just about completed the preparation of Condon's collection of John Day vertebrate material now in our Natural History Museum at the University when he was struck down by an automobile in Eugene last October. He has recently been moved to a private home, is recovering slowly, and hopes to be able to return to Pasadena late this summer. His recovery from this unfortunate accident has been a remarkable one and as a patient he has won the admiration of all who have been privileged to know him. Furlong is considered an authority on the antelopes and has directed the work of making some very fine restorations of this interesting group for the California Institute. However, this article is chiefly about Osborn's elephants and not about antelopes.

Before we look into these massive volumes (octavo size) with a total of 2517 pages, 30 plates (some in color), and 1244 text figures, let us give a little information about the author.

Henry Fairfield Osborn died in 1935 and at that time was Honorary President of the American Museum of Natural History, Curator-in-chief of Vertebrate Paleontology, American Museum of Natural History, Senior Paleontologist, U.S. Geological Survey, Professor of Research Zoology, Columbia University, and the recipient of a hatfull of honorary degrees and member of a score of the leading scientific societies all over the world.

The work on this monumental piece of work began in 1889 and continued until Dr. Osborn's death. With him were associated one hundred and twenty-three collaborators from the leading Museums and Universities of the world. To mention only a few of these we name the following:

C. W. Andrews of the British Museum of Natural History.
Saffa Stefanescu, University of Bucharest, Rumania.
Max Schlosser, Bayerische Staatssammelung für Paleontologie, Munich, Germany.
Giovanni Capellini, University of Bologna, Italy.
Chas. Depéret, Dean of the Faculté des Sciences, University of Lyon, France.
W. D. Mathews, Professor of Paleontology, University of California.

Osborn's method of treatment employed research in geology, comparative anatomy, animal mechanics, biology and paleontology, involving an enormous amount of measurements and study of thousands of specimens from widespread localities which had been accumulated for many years by hundreds of individuals.

The study and knowledge of this interesting group of animals received its greatest impetus from the discoveries by Andrews and Beadnell in 1901 in the oasis of the Fayum a short distance southwest of Cairo, Egypt. Osborn conducted an expedition to this region in 1907.

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*Professor of Geology and Geography, University of Oregon.

Vol. I of this monograph deals with the Moeritheroidea, the Deinotheroidea, and the Mastodontoidea.

Vol. II -- the Stegodontoidea and the Elephantoidea.

All this work, beginning with Andrews' and Beadnell's investigations, indicates that the Proboscidea probably originated in N. Africa and from there spread to most all parts of the world except Australia, New Zealand, Northeast N. America, and Greenland. Of all the long line of elephants and their relatives we now have only the elephants surviving and they are confined to Central Africa and Southeast Asia (including Borneo).

There were, according to Osborn, three primary stocks from which all existing elephants were derived -- these were Moeritherium, Phiomia, and Paleomastodon.

As the readers of this society probably all know, we had both elephants and mastodons in many parts of Oregon in the Pleistocene and some even earlier. One of the first to be described was from Baker County, Mastodon Oregonensis, by Dr. Hay.

Our Natural History Museum at the University has one large elephant molar tooth found by Condon near Silver Lake and a fine lower jaw with tooth in place of a mastodon from the Yamhill river, also several teeth of both elephants and mastodons, besides an eight foot mammoth tusk sent to us from the gold diggings near Fairbanks, Alaska.

It was pointed out above that Borneo is the farthest place today where living elephants are found. There are none in the Philippines, but E. Naumann, a German explorer reported a stegodon tooth from the Pleistocene of Mindanao.

There is so much of interest in this vast subject that one can only indicate a few of the most significant results.

The work of Osborn illustrates his theories concerning the origin of new characters through aristogenesis, or creative bio-mechanical rectigradation, published by him in 1894. This is best illustrated in the changes in the grinding teeth and in the upper and lower incisive tusks. For the benefit of those who are not posted on these technical terms, aristogenesis means origin of the best and rectigradation means definite variations of organisms.

"In general the specialization of certain organs becomes more intense while closely contiguous organs remain absolutely stationary." This can easily be seen by comparing the head and teeth changes with those of the body.

Perhaps Osborn's greatest contribution, as a result also of his other great work on the Titanotheres, and this, was his phylogenetic classification which is much more scientific than the classification usually followed by the zoologists. Of course the paleontologists have an enormous body of knowledge, which to many zoologists, who deal only with living forms, is a closed book.

The four great branches of Proboscidea, the Mastodonts, Elephants, Deinotheres, and the Moeritheres are known to have evolved along no fewer than forty-one lines of ascent. This great record begins as far back as the Eocene, some 70 million years ago.

Several other things appealed to this writer about this work of Osborn's.

First, it is the result of cooperative research in which men and women of many races, nationalities, color, and religious belief's participated, but nothing counted except their knowledge of elephants.

Second, it is a fine example of sustained effort, on Osborn's part nearly a half a century. It is thorough and enormously painstaking.

Third, this study and its publication was made possible by capital contributed by a capitalist, no other than J. Pierpont Morgan. It is the work of free men living in a free society, working at this problem because they wanted to do it and not by regimentation. It is in short another demonstration of the "American Way."

It may be of interest to those that have seen Mr. A. W. Hancock's excellent specimen of tetrabelodon, that this form is discussed and described by Professor Osburn.

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IN MEMORIAM

Members of the Society were saddened last month to hear of the unexpected death of Mrs. Orrin E. Stanley, a well-loved member of the G.S.O.C. for eight years.

The cause of death was a cerebral hemorrhage, which occurred at Burley, Idaho, while returning from a vacation trip to the place of her birth and other Iowa cities.

The funeral was held at 11:00 a.m., Monday, at the Portland Crematorium.

Minnie Tucker Stanley was born in Mason City, Iowa, September 24, 1875; and died at the Portland Sanitarium July 18, 1946.

She was the daughter of Will Ed Tucker and Frances Dillingham Tucker. Her father was a Civil War cavalry veteran; editor of the Mason City Express, and later treasurer of Cerro Gordo County, Iowa.

Mrs. Stanley was educated in the Mason City public schools and at Drake University. She taught in the public schools in Mason City and Swaledale, Iowa. She studied nursing in a Chicago hospital, and was a volunteer nurse in the Spanish American War.

She married Orrin E. Stanley in Mason City, Iowa, March 20, 1901. Surviving are her husband, two sons, Robert Tallmadge of Salem, and Howard Burton of Portland, one granddaughter, Elaine Stanley of Salem, and a sister, Ethel Tucker Roberts of Riverside, California.

Mrs. Stanley was a student of English Literature, and had but recently been elected president of the LaBarre Shakespeare Club of Portland.

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ROADS END FIELD TRIP - July 14, 1946

by

A. D. Vance

To avoid caravan difficulties in heavy traffic, the society members were asked to leave Portland in time to assemble at Weaver's Agate Shop at Roads End by 10:00 a.m. Sunday morning. The 95 miles to the meeting point was covered in two hours by some members, while the more conservative drivers took two and a half hours.

At the appointed time 18 cars with over 50 members and guests were counted at Weaver's Agate Shop, and many of the older members were pleased to see the first editor of our G.S.O.C. News-Letter, Russell Norton, now an officer of the North Lincoln Beach Agate Society, there to meet us. He and Mr. Weaver joined our party. A few minutes after 10:00 a.m., the party moved on to the end of the Roads End Road, and leaving the cars, we started up the beach.

Dr. and Mrs. Hodge were on the trip. The doctor hasn't lost any of the charm with which he explains the geological features encountered. When Dr. Hodge is on a trip, the leader's worries as to its success are over.

The first stop was at a point where buried tree trunks indicated an ancient land slide or raised beach. There were certain features at the beach line which led to a discussion involving comparison with the Coquille formation (Baldwin '45). No definite conclusions were reached.

The party then moved on to the cliff at the end of the beach, which is clearly of igneous source. Difference of opinion again prevented agreement as to age. One suggestion that it might be of Metchosin age was discussed, without complete acceptance but most agreed that the shaly sediments abutting the volcanics were either laid down later, or that the igneous breccias had been thrust-faulted up over the shales.

On the way back a series of dikes 6 to 10 inches in diameter cutting the sedimentary beds almost at right angles provided the most interesting geology of the trip.

Ranging from fine-grained volcanic ash to approximately the size of grape seeds, the dikes were classed as igneous until fragments of shells were found in them. Upon the finding of the shell fragments, statements gave way to questions. In place of "This must be so, because," the trend turned to "Why then didn't this or that happen?" One proposal was that under-water volcanic dust forced up through cracks picked up shell fragments from the sidewall sediments. Another called for a filling of under-water cracks from above.

A rain squall quickened the pace returning to the cars, where we arrived just at lunch time. The light rain prevented an old time gathering for lunch but when the food had been stored away, the rain ceased and we started an easy climb over the hill to look at the other side of the point.

From the top of the cliff we looked down on to new evidence which needed closer inspection. Dr. Allen, Earl Minar, Ellen James, Irving Jones, and the writer went over the edge and down the slope where a feeder dike, possibly four feet in diameter, apparently came up through the sediments and divided near the top. A flow overlying and apparently interbedded in sediments led to speculation as to the agglomerate-like volcanics being of nearly the same age as the sediments.

Another rain squall cut short our investigations, and we reached the cars about four o'clock.

All voted the trip as worthwhile, and Dr. Hodge indicated that if business would permit he would go on other trips with the G.S.O.C., which, needless to say, met with universal approval.

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LUNCHEON NOTES - THURSDAY, JUNE 13, 1946

Guests, and members who are in infrequent attendance at the luncheon meetings, took the limelight today. Among them were Lotus Simon, such a new member of Phi Beta Kappa that she has not yet received her key with which to dazzle the less-brilliant. With her was Jean Corwood, a biology student at Reed. Lotus is chairman for the picnic to be held at Mount Tabor park. .....Arlene Shaw, who has not attended the luncheons lately, was also present. Another member not seen for some time was Mr. Travis, who chatted about the land-clearing along the coast highway. .....Dr. Booth and Mr. Vance had interesting specimens for the edification of the group. .....Dr. Booth reported on the subject of the Columbia Valley Authority as discussed at the City Club.

M.R.S.

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LUNCHEON NOTES - THURSDAY, JUNE 20, 1946

A charter member of the society reported her plans for delving into the ancient rocks of Albion. Miss Eva Catlin, who has been teaching in Tacoma the past few years, told of arrangements which had been tentatively made for her to teach in an "infant School" in London and live in the home of the girl who was to take her place in the States. However, she reported later that the plans had been cancelled, since under the present Washington state law no alien could obtain a temporary certificate to teach there, and the exchange teacher would remain in England. Miss Catlin's address is 1007 6th Ave., Tacoma 3, Washington. .....Clara Nelson had as her guest at the luncheon, Miss French. .....Mr. and Mrs. Hancock are on an extended trip to California, Arizona, and New Mexico. We hope in gathering up the fossils they leave a few for the rest of us, even though they bring back an elephant or two. .....Ellen L. James, who has just graduated from O.S.C. as a major in geology, was at the meeting, vowing that she is going to start a garbage collection agency and offering to cart off the valueless rocks not needed in the society's collections. It was deemed not safe to let some of the wives hear about this - collections might disappear in toto. ..... Another seldom-seen member is J. Martin Weber, who has been responsible for the enthusiasm of many junior members. An army friend had sent him ashes which were allegedly human bones which had been enclosed in a vase obtained in the volcanic region of Italy. The ashes and fragments were turned over to Dr. Arthur Jones with the request that he determine if they are chicken bones. Mr. Weber has requested a lengthy scientific study on the post-mortem. He also brought a piece of tuff from central Washington, where he found it liberally mixed with the basalt. Work of excavating for the dam which will fill up Grand Coulee itself had just been started when he arrived there. .....Russ Norton, a member of this Society, wrote for the North Lincoln Co. Agate Society and suggested a meeting with the group at Roads End. .....Mr. Libbey introduced his guest, Jim Bell, a graduate of Stanford University in geology, who has strayed a bit away from that field since his return from the service. Mr. Bell has spent some time in Brazil, working particularly with quartz and mica, and has some colored slides which the Society hopes to see.

Miriam Shepard

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THOMAS CONDON, AN OREGON PIONEER

by

Ellen Condon McCornack

Published in University of Oregon Monthly, June 15, 1900

Preamble to the Article by Mrs. McCornack

by

Dr. W. Claude Adams

While visiting my sister and brother-in-law, E. A. McCornack, grandson of Dr. Thomas Condon, in Eugene recently, I came across in the files left by Mrs. Ellen Condon McCornack, Dr. Condon's daughter, a copy of the commencement number of the University of Oregon Monthly published June 15, 1900, in which appeared an article written by Mrs. McCornack about her father's work during his early days in Oregon. This account interested me especially, as it contained little-known and personal facts and incidents concerning his life.

The grandson's home where we visited is in the grove owned by Mrs. McCornack and which is famed for its huge oak trees. It was here that Dr. Condon spent his last days. He spent much time in the grove sitting under the old trees as he communed with nature and instructed his young grandsons in the mysteries of geology.

While attending Commencement exercises at the University of Oregon, we walked over the old campus and stood under the spreading branches of the famous Condon Oak and admired it for its beauty, its antiquity and for its association. The tree bears a bronze plate on which the class of 1897 inscribed the dedication in Dr. Condon's honor. In imagination, we could see Dr. Condon as he used to look - a small man with a gray beard wearing the dark overcoat with the cape. We passed by and gazed fondly at old Deady and Villard Halls where he held his classes. His first museum of his specimens was located in Deady Hall. Dr. Condon occupied the chair of Geology and Natural Science from the time of the founding of the university in 1876 to shortly before his death in 1907.

During Commencement the library and museums were open to visitors and it was our privilege to visit Condon Hall which houses his collection of fossils and which was built expressly for this purpose. We were graciously conducted through the museum, class rooms, and laboratory by Dr. Warren D. Smith, head of the Department of Geology and Geography, who showed us some new acquisitions of the department and explained many exhibits. Of special interest was the log in Dr. Condon's own handwriting of his trip to Oregon around the Horn in 1852 on the clipper ship "The Trade Wind."

Part I

Nearly fifty years ago, there sailed from New York harbor a beautiful clipper ship bound for San Francisco and carrying many missionaries to the distant Pacific States. Among these were Thomas Condon and his young wife, whose lives were to be mingled with the sturdy pioneers of Oregon. Much of interest might be written of

the long and romantic voyage around Cape Horn with its fire at sea, when both the courage and physical strength of the missionaries were tested during the three day struggle with the flames in the smoldering cargo. These days of peril are remembered, by the few who are still living, as among the most thrilling experiences of their long and eventful lives.

In Western Oregon they found the population largely from New York and New England; its people bringing with them their appreciation of schools and churches; here too were many ministers. After ten years of work in this favored region, Mr. Condon was unable to resist the longing for a more needy field; so in 1862 he moved his family to the eastern part of the state, finding in The Dalles of this early day a missionary field to satisfy the most ardent and devoted spirit. Being the head of navigation on the Columbia, The Dalles was a gateway through which all the wild reckless mining population poured eastward to the newly discovered El Dorado of the West.

Here he found a few Christians organized into a Congregational church but without a house of worship. But it required only time and patient effort to find himself the pastor of a strong working church that would have puzzled any student of ecclesiastical history to classify. There were Congregationalists from New England, Presbyterians from New York, Episcopalians from Virginia, and Baptists from the south, all forgetting themselves and their differences in a common enthusiasm for the work of The Master. To be sure, the minister carried an oil can, for his people were only human; but the wise, tactful use of the lubricating spirit proved one of his most potent elements of success. Then, too, every opportunity was given his people for hearing ministers of their own denomination; for years a set of prayer books was kept in the church, ready for the Episcopal service; and many times the bishop or white-robed rector accepted a cordial invitation to hold services with the church of many creeds. The pastor learned to love his band of helpers, but his heart went out with all the yearning of his loving nature to the wild reckless sinners around him. And who can calculate the power for helpfulness of one such life? Saloon-keepers, drunkards, and gamblers loved him; and to many his earnest beautiful life so full of the spirit of The Master was the only tie that bound them to the higher spiritual life. He enticed their children into the Sunday School, where his faithful helpers threw their greatest enthusiasm. And when the Sunday School gave an evening concert, these same rough characters would go to the church and stand if need be for hours delighted with the childrens' work. On one such occasion the concert was about to close when a saloon-keeper near the door asked to say a word. He said, "The Sunday School is doing a good work; we saloon men like it for our children; we believe in it and want to help." "Now Vick," he called to a comrade, "let's take up a collection. You take your hat and go down that aisle and I will take this side." And the collection was one to be remembered.

A minister without a study, Mr. Condon often took his pencil and paper, and climbing the steep bluff above the town, roamed over the breezy hillsides while thinking and jotting down notes for the Sunday's sermon. When the sermon was all thought out, and the outline down on paper, a stop might be made at the old stone quarry; and a tool not usually carried by a minister, a geologist's pick and hammer, produced from some capacious pocket; a few skilful blows upon the quarry stone, might reveal a beautiful branch of Acacia with its long tapering thorn, and each folded leaf clearly outlined against the gray stone. The teacher of the Sacred Book would look fondly upon the unburied treasure, as a leaf from God's other book that so few Christian men were then studying. The old question of "how long ago" suggested by the Acacia leaf brought with it no doubt, for to him the Bible was given not to reveal scientific, but spiritual truth. And this spiritual light was often revealed to the human mind through the veil of human ignorance, without reference to its knowledge of physics, chemistry, or geology. So when he found the Bible

account of creation did not accord with the geological record, it brought no shock to his faith in God's revelation of spiritual truth. After all, the cozy study of a more luxurious lefe would have lacked the fresh breeze of the hillside, the inspiration of the distant snow peaks, the grandeur of the mountains, the calm majestic progress of the onward flowing river, and the study shelf could have held no commentary so rich in its grand outlook into God's past as the Acacia branch of the quarry. The sermons thought out on the hillside may have lacked some of the polish of the study table, but they were full of strength and originality, with a breadth of spiritual vision given by communion with the Creator of a greater world than Hebrew prophet or Christian sage could have dreamed of in the past. But as he slowly wended his way down the mountain, his joy was tinged with pathetic sadness as he realized the long and painful struggle through which the church must pass during the revolution of religious thought even then so surely coming.

This study of nature had been to him a recreation from his boyhood. His first experience as a practical geologist was in Central New York, where as student and teacher, he spent many leisure hours studying the structure of the different formations and making a fine collection of Trilobites, Crinoids, and other ancient forms so common in the limestone quarries of that region. When he sailed for the Pacific Coast, it was necessary to part with the first collection and to come empty-handed to the new and unknown field. He found at The Dalles a military post, from which companies of cavalry were sent out to protect settlers from the hostile Indians of the interior. An army officer, returning from one of these Indian campaigns, brought home a few Trigonia and other fossil shells that awakened a strong desire to explore this unknown field. Finally Mr. Condon obtained permission to travel with a company of cavalry on an Indian campaign. Of course the geologist, with his many stops and side wanderings, found it difficult to keep up with the dashing cavalry; and this trip, so fraught with danger, only served to whet his appetite for more. Meanwhile he made friends with the teamsters who carried supplies in long freight trains, interested them in picking up all curiosities in their way. Many an empty freight wagon, with its long line of dusty mules and tinkling bells, halted at Mr. Condon's door long enough to gladden his heart with some rare fossil or sparkling crystallization, carried for scores of miles by the kind-hearted teamster. In return, his home might be enriched by a book or other token from the intellectual world otherwise so little known. When at length it became safe for a small party to penetrate the John Day Valley without armed escort, Mr. Condon found before him a grand field which kindled an enthusiasm in geological research that has never ceased to be one of his chief delights. Besides his personal work, he employed men living in the valley to explore for fossils; so his collection became larger and more valuable with the wash and wear of each winter's storm.

About the year 1866, while digging a well across the Oregon border line in the state of Washington, a fragment of bone was found buried 86 feet below the surface. Supposing it to be a human bone, the owner sent it to Mr. Condon who pronounced it the distal end of a humerus of a horse. This discovery seemed to him the more remarkable, for so far as he knew, no remains of a fossil horse had ever been found in America; and it was then believed that the horse was not indigenous to the western continent, but had been imported from Europe at an early day. This discovery formed the subject of a lecture given in the city of Portland the following year, an outline of which was published in "The Oregonian" and can doubtless still be found among the files. Had Mr. Condon announced his discovery of an American fossil horse, in a scientific journal, instead of a large daily newspaper, he would have forestalled the technicality which made any later claim credible. From a work on paleontology he was able to identify other members of the horse family among his fossils: the Anchitherium of the Miocene and Hipparion of

the Pliocene age, their bones and teeth being finely preserved in the old lake beds of the valley. All this had been accomplished before any Eastern scientist had even looked upon the John Day Valley. And when we realize the many trained specialists now required to determine properly the different forms of life found in a great geological collection; and that each specialist has access not only to all the scientific literature in his line of research, but to museums containing mounted skeletons of both fossil and modern forms for comparison, we can better appreciate the magnitude of the work accumulating in the hands of one busy man, he thousands of miles from other collections, without the needed books and far from other scientists with whom to confer. He gathered bleached bones of modern life from the hillsides, examined the dentition of patient animals with more than a dentist's care. And, "they say," he even trained a poor old donkey to follow him, lest its last resting place be too remote from the naturalist. The sequel "lends color to the tale," for the donkey's bones have long been honored by a place in his collection. There was something heroic in his patient persistent struggle for light. But in spite of all his efforts, many stone heads with their beautiful agate molars, and long canines firmly locked over a bite of gray sandstone, stared at him with exasperating silence, when he vainly questioned as to their names, lineage, and family connection.

(To be concluded in September issue)

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BACHELOR BUTTE SAFE, DOCTOR SAYS

Reports of volcanic activity from craters on Bachelor Butte, in the Three Sisters country, have proved unfounded, according to Dr. Warren D. Smith, professor of geology at the University of Oregon.

Oregonian, July 11, 1946.

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NEWS ITEMS

Mr. and Mrs. Thomas Eakin have recently moved to California. Mr. Eakin was formerly employed by the Ground-Water Division of the U.S. Geological Survey at the Portland office.

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Dr. W. Claude Adams gave a talk last Thursday, July 18th, at the University of Oregon Dental School on the subject "Geology" and stressing tooth structure and comparative anatomy. Dr. Adams had many slides and specimens, some of which were from Dr. Condon's original collection.

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NEW MEMBER

Dr. Ruth E. Hopson, 1429 S.W. 14th Avenue. Instructor in General Science, General Extension Division, State System of Higher Education, 207 Education Center Building, 220 S.W. Alder Street.

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MEMBERSHIP LIST
Compiled by Miss Ada Henley

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Latourette, Kenneth Scott,	409 Prospect St., New Haven 11, Conn.		
Lawrence, Dr. & Mrs. Donald B.,	2420 - 34th Ave., South, Minneapolis 6, Minn.		
Libbey, Mr. & Mrs. F. W.,	2259 N.W. Everett St.,	10	BR 2145
Lindeman, Mr. B. J.,	Oregon City, Oregon,	Oregon City	6396
*Mackenzie, Mr. & Mrs. Ray E.,	500 Pittock Block,	5	
MacLeod, Miss Hannah E.,	1915 N.E. 62d Ave.,	13	MU 5694
Marshall, Miss Emily,	3471 S.W. Patton Road	1	BE 6720
Marsters, Mrs. Livia Bond,	2406 N.E. 46th Ave.,	13	GA 0302
Mattern, Dr. & Mrs. Alfred E.,	2214 N.E. 39th Ave.,	13	GA 0511
McClure, Mr. & Mrs. Willard,	2154 N.E. Weidler St.,	12	TR 6887
McCoy, Miss Sallie E.,	1032 S.W. 12th Ave.,	5	BR 9774
Meyer, Mrs. Charles R.,	3919 S.E. Grant Court	15	LA 6435
Miller, Mr. & Mrs. Hugh,	2591 S.W. Buckingham	1	AT 0704
Neikirk, Miss Jessie,	5231 S.E. Lincoln St.,	15	LA 8961
Nelson, Miss Clara,	9529 North Edison	3	UN 0869
Nelson, Miss Mildred Jean,	4815 N.E. 11th Ave.,	11	GA 2866
Nordgren, Miss Emma,	4936 N.E. Going St.,	13	
*Norton, Russell R.,	Box 326, Wecoma, Oregon.		
Oakes, Mr. Alva,	921 S.W. Broadway	5	BE 5435
*Oberson, Mr. & Mrs. Louis E.,	3569 N.E. Stanton St.,	12	WE 3685
*Phillips, Mr. & Mrs. Clarence D.,	7630 S.E. 30th Ave.,	2	SU 5655
*Phillips, Mr. & Mrs. Kenneth N.,	2213 S.E. 52d Ave.,	15	SU 0029
*Poppleton, Miss Grace,	Route 1, Oswego, Oregon,		AT 2222
*Poppleton, Mrs. R. R.,	Route 1, Oswego, Oregon		AT 2222
Priestaf, Mr. & Mrs. Robert,	13409 Hartwell Ave., Detroit 27, Michigan,		VE 72660

Name	Address	Zone	Telephone
Reeves, Mr. & Mrs. W. A.,	1055 N. 16th St., Salem, Oregon		
*Reichen, Mr. & Mrs. Sam,	8131 S.E. Crystal Springs Blvd.,	6	SU 8775
Reid, Miss Margaret	1915 N.E. 62d Ave.,	13	MU 5694
*Reimers, Mr. & Mrs. Fred,	6535 S.E. Clinton St.,	6	SU 9188
Rice, Mr. & Mrs. Richard L.,	535 East Oak St., Hillsboro, Oregon		
*Richards, Mr. & Mrs. Carl P.,	530 North 19th St., Salem, Oregon		
Robinson, Mr. & Mrs. John W.,	4020 N.E. 78th Ave.,	13	WE 5079
Rosa, Miss L. Kate,	807 S.W. 14th Ave.,	5	BE 0297
Ruff, Mr. & Mrs. Lloyd L.,	3105 N.E. 45th Ave.,	13	TR 6980
*Rydell, Mr. L. E.,	P.O. Box 895	7	
Sandoz, Mr. & Mrs. Marcel F.,	P.O. Box 835, Redmond, Oregon		
*Schminky, Mr. & Mrs. H. Bruce,	1030 S.E. 54th Ave.,	15	LA 3903
Shaw, Miss Arline,	6956 N. Columbia Blvd.,	3	UN 0057
Shepard, Miss Miriam R.,	Box 164, Route 2, Portland		AT 7141 Ext.896
*Simon, Mr. & Mrs. Leo F.,	711 S.W. Ankeny St.,	5	BE 0300
Simon, Miss Lotus,	7006 S.E. 21st Ave.,	2	LA 0549
Simpson, Mr. & Mrs. Ellis P.,	1209 N.W. Despain, Pendleton, Oregon		
Smith, Mr. & Mrs. Ben F.,	1350 S.E. Flavel St.,	2	EA 1565
*Smith, Dr. Warren D.,	1941 University St., Eugene, Oregon		1334W
Stanley, Mr. Orrin E.,	2601 S.E. 49th Ave.,	6	TA 1250
Steere, Margaret L.,	1954 Independence Ave., Ann Arbor, Mich.		
Stevens, Miss Eliza,	#11 Cooks Addition, Bonneville, Oregon		
*Stevens, Dr. & Mrs. J. C.,	434 N.E. Royal Court,	15	EA 9333
Stiles, Henry M., Mr. & Mrs.,	4025 Jackson St., Milwaukie, Oregon		EA 2121
Stockwell, Mrs. H. Mildred,	1015 S.E. 25th Ave.,	15	EA 4281
Stoddard, Mrs. Dorothy D.,	2406 N.E. 46th Ave.,	13	GA 0302
Sunderland, Mrs. Florence E.,	4125 S.E. Oak St.,	15	EA 9821
*Teeters, Miss Glenna	3107 N.E. 32d Ave.,	12	GA 6205
Tisdel, Mr. & Mrs. Fred W., Jr.,	3615 S.E. Clinton St.,	2	
Thompson, Miss Ethel L.,	1417 S.W. 10th Ave., Apt. 201,	1	AT 2986
Travis, Mr. & Mrs. H. F.,	7225 S.W. Corbett	1	AT 1445
Triol, Miss Ella,	2708 Broadacres, Apt. 3650, Vanport City, Portland, Oregon		WE 3244 Ext. 11
*Underwood, Dr. H. L., & Dr. Dora J.,	5226 S.W. Menefee Drive,	1	HR 4692
*Vance, Mr. & Mrs. A. D.,	5516 N.E. Rodney	11	MU 5204
*Wade, Mr. & Mrs. Tracy,	3326 N.E. 25th Ave.	13	TR 6060
Warner, Mrs. Clara,	168 N.E. Lombard St.,	11	
Weber, Dr. & Mrs. D. E.,	8005 S.E. Morrison St.,	16	TA 1965
Weber, Mr. & Mrs. J. Martin,	2410 N.E. Multnomah St.,	12	TR 1645
Weinzirl, Dr. & Mrs. Adolph,	3536 N.E. 27th Avenue,	12	GA 5706
White, Mella C.,	415 N.E. Laurelhurst Place	15	EA 8384
Wilkinson, Mrs. M. J.,	2807 N.E. 23d Ave.,	12	GA 2579
*Woodard, Mr. & Mrs. E. Clyde,	1527 Division St., Bend, Oregon		
Woods, Owen J.,	6423 S.E. 66th Avenue	6	
Zimmer, Miss Ruby M.,	805 S.E. 60th Avenue,	15	LA 8319

Name	Address	Zone	Telephone

Junior Members

Pruett, Miss Jeanna	3203 S.E. Gladstone St.,	2	

NEWS - LETTER Subscribers

California Institute of Technology,	1300 San Pasqual St.,	Pasadena 4,	California
Catlin, Miss Eva,	1007 Sixth St.,	Tacoma 3,	Washington
Cleghorn, J. C.,	219 High St.,	Klamath Falls,	Oregon
New York Public Library, Reference Department, Room 116,	476 Fifth Ave.,	New York 18,	N.Y.
Partridge, Mr. F. W., Jr.,	609 W. Hamilton,	Flint 4,	Michigan

Summary:

Honorary Members	2
Charter Members	32
Members	91
Junior Members	1
Total	126

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LUNCHEON MEETING - Thursday, July 11, 1946

Mr. M. E. Roberts of the State Department of Agriculture at Pendleton was a guest of Mr. Baldwin. Mrs. Moss was a guest of her son-in-law, John Allen.... Miss Hughes spoke of her enjoyment at circling over Niagara Falls on her recent flying trip to Toronto and other Eastern cities. One day was spent at the Ward Institute at Rochester, and she "collected" there some samples of minerals which she brought back to the members.....Mr. Hancock reported that he didn't do any collecting on his trip south, but spent an interesting time at the zoo in San Francisco.....Lotus Simon reported on the plans for the August 23rd picnic at the crater on Mt. Tabor park.....Leo Simon reported on a recent trip into Canada, when the roses were in their prime at Nanaimo and Victoria. One of the trip's highlights consisted of the difficulties of getting on the Port Angeles ferry.... Dr. Arthur Jones spoke of the Franciscan formation from San Francisco Bay north along the coastal hills, which has just enough fossils to identify it as Jurassic. Dr. Allen interpolated that the formation extends into Oregon.....Dr. Edwin T. Hodge made one of his all-too-rare visits and discussed work he has been doing in connection with the Multnomah Falls landslide, working on a method of stabilizing the too uncertain terrain. The top of the ancient landslide there is covered with andesite blocks forming talus slopes. During the winter boulders slide down. The talus slopes have about reached stability and the boulders stop near the bottom of the slope. Dr. Hodge pictured the Indians erecting piles of rocks to hold the boulders in check. He suggested that building a series of walls would stop the worst of the danger.

Miriam Shepard

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GEOLOGICAL SOCIETY NEWS LETTER

Volume 12, No. 9 September 1946

Society Activities

LECTURES: On the second and fourth Fridays of each month at the auditorium (third floor) of the Public Service Building, 920 S.W. 6th Ave., at 8:00 p.m. If announcements do not appear in NEWS-LETTER, see Oregonian or Oregon Journal, previous to regular meeting date.

TRIPS: Watch for announcements of at least one trip each month. If you know of or can lead a trip yourself, call A.W. Hancock, SU 5285.

LUNCHEONS: Every Thurs. noon in the Victory Room of the House of Hicks restaurant, 425 S.W. Taylor St., between S.W.4th and S.W.5th Aves. Luncheon 75¢.

MEETING ANNOUNCEMENTS

Friday Sept.13 "Quartz and Mica Mining in Brazil", with colored slides, by James F. Bell, assistant to the president, Portland Gas and Coke Company. This discussion of one of the most important "war babies" of all, should prove of great interest. Quartz, used in making frequency-regulating plates for radios, had the highest of priorities during the war.

Friday Sept.27 F. E. Williamson, information specialist for the U.S. Forest Service will present movies with a lecture on "Wild Life in the National Forests."

FIELD TRIPS

Sept.28-29, Sat.-Sun. Field trip to Deschutes Perlite Mine, led by A.W.Hancock, John Allen, and Fred Gustafson. WRITE IMMEDIATELY to the Williams Auto Court or the Maupin Auto Court for reservations for Saturday night. Those who wish to leave Saturday morning will meet at noon with Mr. Hancock at Little Crater Lake, 7 miles off the Wapinitia Highway, for lunch.. Turn off highway 10 miles south of Government Camp, drive 5 miles on Skyline Road to Ranger Station, turn west 3 miles to camp ground. Afternoon will be spent on trip to Sunflower Flat and vicinity. Caravan will assemble Sunday at Williams Auto Court, across river east of Maupin, and will leave at 8:30 a.m. for the drive up river to the mine. There must be no stragglers, as we have to go through a locked gate. Mr. Fred Gustafson, engineer at the mine, will meet the party and take them through the mill and workings. A good section of Clarno rocks is exposed. See or call Mr. A.D.Vance if you have room for extra passengers; or if you have no means of transportation. Call MU 5204 evenings.

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NEW MEMBERS

Mr. and Mrs. Virlis L. Fischer, 2336 S.W.Osage St., Portland 5, Phone BR 4639.
Mr. Ford E. Wilson, 3360 N.W.Manila Ave., Portland 10, Bus. Phone BR 0621, Ex.255, Salem address: 1327 Plaza St.

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CORRECTION

The following three names were inadvertently omitted from the membership list published last month. Please correct your list accordingly:
Carney, Mr. & Mrs. Thos.A., 7269 S.E.Thorburn, Zone 16, Phone SU 9290.
Minar, Mr. & Mrs. Earl W., 3666 S.E.Woodstock Blvd., Zone 2, SU 7693.
Smith, Miss Almeda, Rt. 1, Box 610, Oswego, Oregon. OS 7802.

Also the name of Mrs. S.L.Haaser, 6132 N.E.Failing, should be listed as a charter member.

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HIGHLIGHTS OF THE BEND TRIP

by

Miriam Shepard

The members of the GSOC who left Portland early the week-end of August 10th, to be guests of the Deschutes Geological Society, geologized along the way at the Crooked River Bridge and at Peterson's Rock Gardens. Those who were slaves to industry Saturday morning bowled along through some of Eastern Oregon's higher temperatures, but all arrived in time for dinner before taking the spectacular drive to the top of Pilot Butte. Phil Brogan welcomed the visitors on behalf of the Bend group. Mt. Thielsen had faded into the dusk before most of the group had reached the butte, but the sunset afterglow sharply outlined the Three Sisters, their "related" peaks the Little Brother and Old Bachelor, and the entire stretch of dramatic skyline north to Mounts Jefferson and Hood. Mr. Brogan and Dr. John Allen identified the Newberry Shield and the other highlights of the visible volcanism.

The South City Limits motel was the setting for a campfire meeting over which Mr. Brogan presided and at which Mr. Hancock told one of his tall stories. Mr. Springer of the State Highway department of Bend spoke, and Dr. Stevens outlined the purposes of the Museum foundation. The altitude seemed to have affected the visitors' appetites, because even after eating the ice cream served by the Bend club it required a surprising number of people to call at the nearby restaurant on the excuse of finding out if breakfast were available at 6 o'clock.

Soon after 7 o'clock in the morning, the caravan left, making its first stop at the summit of Lava Butte, where Mr. Brogan pointed out the course of the lava flows. Dr. Allen lectured on the formation of the butte, with the group gathered around the look-out. Near Lapine the caravan turned eastward on a forest road to Paulina Creek falls, where the rapid stream appears to be wearing back the andesite which caps a softer formation of tuff a matter of several inches a year. After passing Paulina Lake, the group scrambled out, picks in hand, to flay a pile of obsidian boulders. The more hardy climbed a pumice covered butte between Paulina and East lakes. From there an impressive view was obtained of the interior of the Newberry caldera. It was appreciated that the weather bureau had arranged for a clear sky but rather cooler temperatures. The caravan's next stop was at East lake before returning to the Paulina Forest camp for a picnic lunch.

The group left at 1:30 for Camp Abbott, where two cinder cones which had been excavated were pried into with much curiosity. At the first stop, there was much picking over of the scoria for purely unscientific reasons - those opalescent colors look effective in a fishbowl. At the next stop, the group clambered over rough terrain in search for "bombs" that had been dropped by the volcano long before Camp Abbott brought along a different kind of bomb. At the center of this cinder cone was the lava core which had been exposed by the diggers and which they had at first attempted to remove.

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HEARD AT GSOC LUNCHEON

Mrs. Oberson, when viewing a fossil wolf skull of Mr. Hancock's collection exclaimed, "My, what a small brain he had." Clarence Phillips who sat near by knowingly assured her that all wolves had small brains.

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THE STORY OF THE LAVA LANDS

by

Phil F. Brogan

"What are some of the natural attractions of the Bend country?"

Tourists from the east, park conscious after crossing the Rockies and probably following the park-to-park trail from Crater Lake to Rainier, ask this question frequently. The Central Oregon country itself provides at least part of the answer, but back of the volcanic mountains, cinder cones, tilted lands overlooking Crooked river, timbered peaks and lava flows are some of western America's strangest stories of geology.

Visible from Pilot Butte, at the eastern city limits of Bend, are the Oregon Cascades--not just another string of mountains, eternally white on the western skyline, but huge volcanoes that are not dead; they are only resting. Hot gases still escape from a fumarole on Mt. Hood. Tall Lassen, holding down the anchor position far to the south, was in eruption only two decades ago. Furthermore, the Cascades of Oregon are not mere fire mountains: they have been deeply cut by rivers of ice and, in winter, are shaped into gentle curves by drifting snow.

The Cascades are probably the greatest of all natural attractions viewed from Bend, but there are others nearby. These include the cinder cones, some so recent that they appeared to have ceased eruption only yesterday. One of the most interesting of these cones is Lava Butte, on Highway No. 97 just ten miles south of Bend. A new road to the top of Lava Butte has made this cone the most accessible of its type in the volcanic lands of the west. No visitor to the Bend country should pass up the easy, spiral trip to the top of Lava Butte, for this extinct volcano serves as one of the grandest observatories in America. Visible from the crater rim are the Cascades on the west, the aged Blue mountains to the east, the faulted Smith rock formation to the north and the massive Paulina shield to the south. At the very foot of Lava Butte is a great flow of black lava--a sheet of frozen slag that spreads westward to the Deschutes River, then swings north toward Bend. All of this flow, covering many sections of land, issued from the south wall of Lava Butte. Here is a huge "lava gutter", strange "push-ups", jagged lava and slabs seared by hot gases. On Lava Butte is a crater that is about 150 feet deep.

Reaching from the foot of Lava Butte and extending some 20 miles to the south is a lava fissure. At least five volcanoes, Paricutins of a not distant age, formed along this giant earth crack. Spatter cones are abundant in the area, and nearby is Oregon's far-famed Lava Cast forest--a region in which molted rock spilled into an ancient forest, forming moulds as it chilled against tree trunks.

Not the least in interest are the lava tunnels, dozens of which are found southwest of Bend and in the Redmond country. At least two of these, Lava River tunnel and Skeleton cave, are more than a mile in length, and large enough in places for two trains to run side by side--if it were possible to get trains into the rocky bowels of the earth.

Always of interest are the strange ice caverns of the Bend country. Most famous of these is the Arnold ice cave, some 15 miles southeast over a rather rugged road. Bend in early days obtained its summer ice from this cavern, which holds more ice than does the far-famed ice caves of New Mexico. Even in the warmest days of summer, ice exists in these strange caves.

In the Bend area are many abandoned river channels, one, Dry river, which trails across the high desert to the east some 90 miles, from the Hampton highlands to Crooked River. This channel, so geologists say, is a fossil river, and was formed in that epoch when heavy precipitation and melting snow provided heavy runoff.

Off to the east, some 70 miles, are the world-famous John Day fossil beds, which yield stony remains of such creatures as three-toed horses, rhinos, ancestral camels and the great clawed horse, moropus. North of Bend, and visible from Pilot Butte, an ancient land mass, the Clarno represented by Smith rocks dips under the Bend basalts in a great downwarp.

No visitor to this part of the state should miss seeing the strange "inner canyons" of the Crooked river-Deschutes river junction region. Here, floods of molten rock long ages ago spilled into ancestral gorges, partly filling them. Since then, Crooked river has cut an inner canyon through the recent flows.

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NEW OREGON PUBLICATIONS

Map of Crater Lake National Park and vicinity, Oregon.

Crater Lake, famed for its marvelous blue color, lies in the deep bowl of an extinct volcano. It is the central feature of Crater Lake National Park, which is in the heart of the Cascade Range in southern Oregon. The lake is 6 miles wide, 2,000 feet deep, covers an area of 20 square miles, and is enclosed in multicolored cliffs that rise 500 to 2,000 feet above it. The water surface is 6,160 feet above sea level and fluctuates very little from year to year, as the water is derived from rainfall and snowfall, and evaporation balances the precipitation. The lake is not known to have any outlet except by seepage. The rim of Crater Lake and the surrounding lava fields bear evidence to students of geology that here once stood a majestic mountain comparable to Mount Rainier and Mount Hood. A volcano it was--restored by geologists as Mount Mazama--and during one of its violent eruptions it collapsed, leaving a crater to be occupied in later ages by the beautiful lake. In addition to Crater Lake National Park, shown on earlier maps, the new map includes a border area 4 to 6 miles wide. In all, this map represents an area of about 650 square miles. Approach roads, shown in red, as well as the 35-mile scenic road around the lake, are paved and connect with main highways east and west of the park. (1 sheet, 34 by 25 inches. Price, 40 cents, in care of U.S. Geological Survey, Washington, D. C.)

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OREGON MINERALS MAPPED

A map showing the location of over 300 mineral deposits in the state of Oregon has just been published by the State Department of Geology and Mineral Industries. Principal localities of 43 minerals are shown in red on a base map measuring 22 inches by 34 inches. Brief explanatory notes describing 12 of the most important ores are printed on the margin. A small index map showing generalized locations of beach and stream gold placer deposits is also given. Copies of the map may be obtained at the department's office, 702 Woodlark Building, Portland, or at the field offices at Baker and Grants Pass. Price postpaid 10 cents.

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CHANGE OF ADDRESS

Owen J. Woods, 6423 S.E. 66th Ave., Zone 6

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LUNCHEON MEETING - JULY 18, 1946

Only 18 members and guests were present for the smallest luncheon attendance for some weeks.....Miss Eliza Stevens from Bonneville brought as her guest her niece, Marilyn Stevens, who recently returned from eight months in Costa Rica and Guatemala, where she spent some time in the picturesque mountain town of Chichicastenango.....Mrs. Barr introduced her son-in-law, Walter Gustafson, who recently brought his family from Evanston, Illinois, to Portland to make their home.....Mr. Baldwin, who presided at the meeting, had received a note of thanks from Mr. Stanley for gladioli sent to Mrs. Stanley, but the group was saddened by word that Mrs. Stanley had died that morning.....Dr. Booth reported that he and Mr. Rockwell had recently been to Redmond in a search for the plume bed near the Eagle Rock area. The structure seemed to have been blasted out, and only a specimen of the rock was found. Dr. Booth passed around a rock specimen which he found in a gravel bed 20 miles south of Prineville, but despite demands of the curious, no one offered identification.....Miss Hughes passed around a wide selection of publications which she had obtained from the Royal Museum at Toronto in answer to her request for information in regard to the geology of the country through which her trip had taken her.....Dr. Booth displayed a card bearing announcement of the Northwest Federation of Mineralogical Societies conclave in Boise on August 31 to September 1.....Mr. Bates voiced his fears in regard to the effect the proposed atom bomb under-water explosion will have. There will be tremendous pressure exerted and tremendous temperatures reached as the result of the blast, according to Mr. Bates, who thinks it is rather a risky thing to do. He lightened the serious moment by remarking that the reason scientists are not objecting more loudly is that if they are proved wrong they will be laughed at, but if they are proved right no one will be here to realize it.

Miriam Shepard

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LUNCHEON MEETING - THURSDAY, JULY 25, 1946

Dr. Ruth Hopson made her first appearance at a luncheon meeting, to be greeted as a new member. Dr. Hopson is a science instructor for the extension division of the State System of Higher Education.....Twenty-five were in attendance, among whom was Carl Richards, who brought greetings from the Salem Geological Society, of which he is president, in a very practical way. "We have had some very pleasant visits from several members of this organization to our meetings. One thing our visiting members have noticed is that we have a geological chart suspended before us at our meetings. We thought that we would like to express our respects to the Geological Society of the Oregon Country by having a print made of the chart." (We shall look forward to having the large and easily-read chart before us at the meetings.).....Mr. Richards also described a trip he and Mrs. Richards took to Michigan to attend a conference of the Amateur Astronomical Society of America at Cranbrook Foundation, 20 miles from Detroit. He was enthusiastic about the geological exhibit. Around the academy is the Boulder Trail, all of the boulders being labeled. He found it notable in looking out of the train windows to see the groups of stones stacked up, erratics from the tail end of the ice sheet.....Maurice Brady, recently returned from the Marine Corps to Portland, was a guest of Dr. Allen.....Dr. Baldwin passed around an oyster shell showing the muscle scar, which came from the Ellendale quarry west of Dallas, apparently from the Middle Eocene.....Mrs. Oberson stated it was time to present an orchid in the form of a letter from Mr. V. D. Hill of Salem regarding Mr. Hancock's collection donated to the Museum Foundation.....Dr. Hopson expressed her gratitude for assistance given her in teaching, when Mr. Hancock spoke to her class and Dr. Allen conducted a trip up the Columbia Gorge.....The practicality of taking field trips by chartered bus was discussed.....Mr. Bartow drew attention to the availability of "Wild Flowers of the Pacific Coast" at a cost of $2.80 instead of the regular $3.50.

Miriam Shepard

THOMAS CONDON, AN OREGON PIONEER

by.

Ellen Condon McCornack

Published in University of Oregon Monthly, June 15, 1900

(Continued from August issue)

Part II

When at last the iron rail had spanned the continent, and the tide of tourists found their way to Oregon and up the noble Columbia, they received a cordial greeting from the isolated scholar so long shut off from the outside world. And when word came that Professor Marsh with a party from Yale would visit the new fossil field, no welcome could have been more hearty. Here at last seemed the coming of light and help and scientific companionship. Mr. Condon himself met him far from home and showed him through his new geological field. He also introduced him to his home collection where Professor Marsh spent many hours examining the Anchitherium and Hipparion bones and teeth. Here too he carefully sewed to a firm foundation the delicate bones of the three-toed Hipparion foot, trying hard to persuade Mr. Condon to part with the prize; for he knew well only one other such specimen then existed, and that in distant France.

By this time the John Day Fossil Beds of Oregon were becoming well known to the student of paleontology as among the most valuable mines of ancient life. Only the Sewelic Hills of Northern India, the "Molasse Beds" of the Swiss Alps and two or three other localities in the United States and Europe can compare with their wonderful record of mammalian life through the Middle and Late Tertiary. A little later Mr. Condon had the pleasure of visiting the John Day Valley with Professor Le Conte of California; and here Professor Cope of Philadelphia and Professor Marsh of Yale have since made valuable additions to their great collections.

About this time a Portland minister called at Mr. Condon's house accompanied by a representative of one of the great eastern schools who wished to purchase the geological cabinet, but he found the Oregon collection was not for sale. The offer was liberal and the callers persistent, but neither gold nor persuasive eloquence could influence the owner to consider seriously the proposition. Finally the Portland gentleman became impatient at what seened the folly of an enthusiast. "Why Mr. Condon," said he, "how can you refuse? Here you are, a poor minister with a family to educate and your wealth centered in this great collection crowded into a common wodden house. Don't you know a fire at any time may destroy it all?" But even threatened disaster could not prevail and the discouraged callers finally took their leave.

The day had been intensely hot and full of care, and the night was still too warm for sleep; but it was gladly welcomed for its quiet hours of thought. The offer for his cabinet had been so unexpected and so persistently urged that he had found himself taking the defensive, without stopping to analyze his decision. And now in the quiet night he asked himself whether he had been too hasty, whether there was more sentiment than reason in his determination not to sell. As he reviewed the history of his geological work, its relation to his family and society, he found his judgment fully sustained his decision. In the emergency he had acted from an intuitive conviction, itself the result of years of quiet half-unconscious thought. Yes, he had cold financial reason on his side, but it was always warmed and uplifted by the enthusiasm of his love. Besides, to part with the cabinet would seem like shattering his own personality of which it had

become a part. Did not each specimen have its own identity? Its own personal story known only to himself? And yet, after all the caller was right, a fire might destroy it any day. Then the thought of fire so took possession of his tired nerves that he could not rest. Finally he grew indignant at his own useless worry and resolved to plan for the danger and then put all thought of it aside. He remembered a large tank of water beside the hydrant, some discarded carpets, boards and timbers within reach. He planned what to do if a fire should break out down town with the usual summer wind from the west. Finally when every detail had been planned, the tired minister fell asleep.

The next day while the family were at their noonday meal, the fire bell rang, and Mr. Condon saw a column of black smoke pouring from the old Globe Hotel several blocks away. There was a stiff breeze from the west, and remembering his midnight plans, he immediately began work upon the scaffolding. It was barely finished and he was spreading the carpet upon the roof when he turned to find the flames sweeping furiously through the next block. The fire had fanned the breeze into a gale, everything had melted before the fierce heat, cinders were already falling around him and a wall of flames was surely, swiftly coming on. In another moment twenty men were running to his help. And how they worked! The roof took fire, and one man fell prostrate from the heat, but the heroic work, the vacant lot on the west, tall trees on the east, and thorough preparation, all helped. And those who had time to note the progress of the fire saw it burn everything near, even the tall factory beyond; and yet the little house of wood stood unharmed in its setting of charred and blackened trees. When it was all over, everything was found in confusion, many things had been carried out only to be burned; and worst of all, the shelves that held the cabinet were bare, the choicest specimens were gone.

Late in the day when the scattered people had again gathered at their homes and the homeless ones were sheltered, Mr. Condon began holding a reception which lasted many days. First came a sturdy blacksmith carrying a fine Oreodon head. "Well, Mr. Condon," said he, "I am awful glad you were not burned out - Yes, I lost everything, house, shop and all. My little boy heard your house was on fire, so he rushed in and got this stone head. I don't see how he ever got away with it for it's awful heavy. He said, 'he was bound to save something for you, and he always liked this head with its fierce looking corner teeth.' Once he stepped on a cinder and most dropped it, but I guess it's all right." Then a young man called to leave a box of horse and rhinocerous bones and teeth that he had saved; still later came a little blue-eyed girl with her gingham apron full of beautiful sea shells. She said: "I could not bear to have them burned up so I just took those I liked best and carried them in my apron for you." Finally just at dark came a small boy bringing home the head of a fossil dog. "You know, Mr. Condon, you showed me your rocks one day and I liked this because it's a dog. So I just saved it for you." Day after day they came until nothing seemed missing except a little cube of amber in which insects were entombed and after weeks had passed even it was found in the street. It is not strange that this tribute of affection made a new and tender tie between him and his people.

Mr. Condon was a pioneer by nature; it gave him real pleasure to sit down beside a great rough block of sandstone with only the corner of one glistening tooth in sight; to pick, chip and chisel until another tooth and part of the jaw were seen; to continue the patient chipping until the beautiful agatized molars were laid bare; to work patiently on until there stood before him no longer the shapeless mass of stone, but a fine fossil head to add its testimony to the record of the past. But it gave him greater pleasure still to work with rough unpolished human character, to discover the glint of gold hidden under the rough exterior.

The book of nature was indeed fascinating but did not appeal to him as did the work with men. He had the artist's eye for seeing the beautiful in character and the enthusiasm of a Christian Phidias for shaping rough faulty human nature until its beauty reflected the Divine. To many minds these two lines of interest, the development of character and the study of nature would seem incongruous, but to him they were both God's truth, the one the preparation, the other the culmination of God's work. And yet strange and unusual as is this combination of a geological minister, it seemed exactly the combination needed to equip one for usefulness thirty years ago. For the storm foreseen by our minister at the stone quarry was already brewing; these were years of great strife in the scientific world. The author of "the origin of species" and "the descent of man" had given his theory of evolution to the world. The grand truths developed by that galaxy of brilliant English writers, Spencer, Huxley, Tyndall, and others, had already been seized by German materialists who were calling upon all thinkers to discard the Bible as out of date, because not in harmony with scientific thought. If Christian ministers had only been ready, these rash demands of materialists would have been quickly set aside. But Christian ministers were not scientists; and the principles of "higher criticism," if thought of at all, were considered dangerous heresies, against which to warn their people. To Mr. Condon the theory of evolution presented to the human mind a wider conception of God than the world had ever known before. It involved a plan of unthinkable grandeur; beginning with the smallest, simplest things, gradually unfolding into more complex life, often interrupted by some great upturning of nature; but never losing the continuity of purpose, the steady progress toward the culminating glory of all; the spiritual life of man. To have all this new wealth of spiritual vision, seized upon and appropriated by materialists, was the source of deepest sorrow. The storm starting on the intellectual heights of Europe was slowly traveling westward, but our prophet of the stone quarry found all effort to prepare the churches vain. A little later the magazines were full of the subject, and materialism was creeping into college life with the claim that evolution was antagonistic to religion. The young men who studied science found no Christian leader to interpret the beautiful adaptation of evolution to the spiritual life. It was no wonder that college boys, studying geology, affected materialism, because to be a Christian was to b "behind the times". Our geological minister saw that the old ramparts erected by theologians were no longer a safe retreat; that the church must be defended by science herself, and he longed to help unfurl the Christian flag over this newly discovered land of truth. He felt his most effective work could be done with his cabinet, in shaping the immature minds of Oregon's sons and daughters. This with other motives led him finally to accept the chair of Geology and Natural History in Oregon State University. Here he moved his large and valuable cabinet gathered during twenty years of ministry in Oregon, and here he has remained faithfully devoted to the work he loves so well. Of course the ultra orthodox have criticised his teaching, but mothers have thanked him with grateful tears for his spiritual leadership through the storm.

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NEWS NOTE

Miss Agness B. Jones, who has been a member of this Society since November 1941, left on August 31 to accept a position in the Public Library of Providence, Rhode Island, where she will do readers' advisory work and vocational counseling. She will first visit her home at Richmond, Virginia, and will report for duty in Providence on September 23.

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RECONNAISSANCE OF THE LOWER ROGUE RIVER VALLEY

by

Warren D. Smith and Ewart M. Baldwin

A remarkably fine ammonite was found near Agness by Larry Lucas, well-known guide and resort owner at the so-called head of navigation on the Rogue River, who loaned it to Dr. Warren D. Smith, head of the department of geology and geography at the University of Oregon. The writers decided to visit this area to make a thorough search for other fossils that might help to date the strata in that locality.

Arriving at Gold Beach Sunday evening July 14th, we tried to book passage on a boat for Agness the next morning. Both the mail boat and Elliot's boats were full and it wasn't possible to leave till a day later. In the meantime we decided to traverse the region near Gold Beach. The road along the south side of the river passes through an area underlain by serpentine for nearly a mile and then through steeply folded grit, sandstone, and shale to the mouth of Indian creek where it passes out onto the bar and ends.

The road along the north shore from the highway bridge is predominantly in serpentine for several miles. The road that turns off to go to the mouth of Lobster Creek passes through steeply dipping Mesozoic sediments similar to those across the river, to a point several hundred yards west of the mouth of Lobster Creek. Butler and Mitchell (1916) and Treasher (1943) show an outcrop of schist between sedimentary areas a short distance even farther west of Lobster Creek.

A short traverse to the vicinity of Geisel Monument along the beach crossed an area underlain by serpentine. A wavecut terrace two or three miles north of the river mouth along the beach has been formed upon vertical dark-colored sediments composed largely of reworked basic rock. Yellow Pleistocene sands with pebbles lenses lie horizontally upon this bench. The terrace is perhaps 100 feet high but slopes upward toward the hill.

The boat left from Elliot's boat house about 8:30 Tuesday morning with 12 passengers and much luggage aboard. The river is very low and the boat scraped bottom at nearly every riffle.

After passing the mouth of Lobster Creek, the rock is mostly Colebrooke schist which J. S. Diller, U. S. Geological Survey geologist, assigned (1902) to the pre-Devonian. The schist includes patches of slaty rock, graphitic schists, and phyllite. A small inlier of Mesozoic sediments crops out around Adams place in the central part of the gorge.

A basalt dike mapped by Diller forms a narrows in the gorge about 2 miles west of Agness that would make an admirable dam site. A lens of serpentine lies between this and the Mesozoic sediments on the east. The contact between the sediments and serpentine is clearly faulted. The fossil locality from which known ammonites have been taken lies on the south side of the river opposite Crooked Riffle, very close to the contact with the serpentine mass. This is the particular locality that Mr. Larry Lucas obtained his fine ammonite specimen which resembles Acanthoplites perrini Anderson. The greatest diameter of the shell is 17.8 cm. This specimen shows primary ribs branching into four secondary ribs instead of three as in Anderson's specimen. This will probably be referred to Dr. S. W. Muller of Stanford University for final determination. Several small and somewhat fragmentary remnants of ammonites and several fairly well preserved pelecypods, some of which appeared to be Pholadomya sp., were found.

On Thursday July 18th we went northward to the top of the divide between Illahe and the South Fork of the Coquille River. Most of the area is underlain by Eocene sediments that dip in general eastward. They are well bedded dark-colored tuffaceous siltstone and shaly sandstone with several massive beds of sandstone, grit, and conglomerate. Although several thousand feet were exposed, few fossils were seen. One bed of oyster shells, Ostrea idriaensis Gabb, is exposed along the grade above Illahe about 1 mile from the summit. The range of this form extends throughout the lower and middle Eocene. The entire road section dips 50-60 degrees eastward along the western edge of the Eocene sediments but flattens to 15 degrees or less toward the river at Illahe. Excellent exposures of well bedded sediments which dipped steeply eastward are exposed in the road cuts between Illahe and Two Mile Creek.

One day, Friday, July 19th, was spent in search for fossils along the Illinois River about one mile up stream from the mouth of Lawson Creek and above Oak Flat. There several shell beds are exposed both in place and in boulders along both sides of the river beside the first prominent riffle beyond a point where the valley narrows to a box-like canyon. The shell beds consisted almost entirely of Aucella sp. but a few larger pelecypods which may be Inoceramus sp. were found. The beds at this locality in general trend north and dip from 60-90 degrees eastward. Most of the beds were badly broken by numerous small faults.

The weather was extremely hot in the vicinity of Agness during the time that we were there. We took the boat from Agness for Gold Beach about 11:30 Saturday morning and stopped at Lowery's for lunch. Gold Beach was reached about 3:00 pm and by hurrying we reached Eugene late that night.

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1943 Reconnaissance geologic survey in Curry County along the coast highway from Gold Beach to the California state line: Geol. Soc. Oregon Country News - Letter, vol. 9, no. 13, pp. 80-82.

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LUNCHEON MEETING - THURSDAY, AUGUST 1, 1946

Dr. Francis Jones, who has been visiting parents and relatives for two weeks showing off his "specimens" of new life, Dorothy, aged 2½ and Burton, age 1½, was a guest at the luncheon. Dr. Jones left Pacific University at Forest Grove to work as chemical microscopist in the Physiochemical and Analytical Division of the Western Regional Research Laboratory, U.S.D.A., at Albany, California. In September, 1942, he married Marjorie Gray, and they now live at 735 Everett St., El Cerrito, Calif.....Virlis L. Fischer, who was a guest of Dr. Allen, received his membership card.....Lucile Jordan, who seldom gets to the luncheon meetings, was among the group in attendance.....Miss Fowler introduced her guest, Miss Barton.....Mrs. A. J. Cumming of Minneapolis, Minn., was the guest of Miss Hughes. The latter passed around a box of specimens which she referred to as her "lost opportunity", since she had not known what to select out of a wealth of specimens made available to her at the Royal Museum at Ontario. They included copper from Lake Superior, copper-nickel ore from Sudbury, Ont., asbestos rock from the Province of Quebec, radium ore from Wilberforce, Ont., and blue talc from Mt. Eisenhower.

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GEOLGOCIAL SOCIETY NEWS LETTER

Volume 12, No. 10 October 1946

SOCIETY ACTIVITIES

LECTURES: On the second and fourth Fridays of each month at the auditorium (third floor) of the Public Service Building, 920 S.W. 6th Ave., at 8:00 p.m. If the announcements do not appear in NEWS-LETTER, see Oregonian or Oregon Journal, previous to regular meeting date.

TRIPS: Watch for announcements of at least one trip each month. If you know of or can lead a trip yourself, call A.W. Hancock, SU 5285.

LUNCHEONS: Every Thursday noon in the Victory Room of the House of Hicks restaurant, 425 S.W. Taylor St., between S.W.4th and S.W.5th Aves. Luncheon 75¢.

MEETING ANNOUNCEMENTS

Friday Oct.11 — "Stump the Experts". A geological quiz program. Bring your questions to the meeting and a prize will be awarded the best question presented before the meeting begins. (The decision of the judges will be final etc.) (Director's meeting immediately after regular program.)

Friday Oct.25 — "Bugs in the Rocks". R.E. Stewart of the State Department of Geology and Mineral Industries will speak on Micropaleontology. Specimens, illustrations, and a microscope will be used to show types of microfossils.

Friday Nov.8 — Jack DeMent will speak on the Atomic Bomb Tests at Bikini at Benson High Auditorium under the auspices of the Oregon Museum Foundation. Members of the Geological Society are urged to attend. Admission will be 50¢ for adults; 25¢ for High Schoolers. Members of the Foundation are admitted free. He will give his impressions of the test and show technicolor sound movies of the bomb in action.

November 12 & 14 — Dr. Ralph W. Chaney, Head of the Department of Paleontology at the University of California, will speak under the auspices of the Condon Lecture Series at Library Hall at 8:00 p.m. Dr. Chaney is one of the foremost paleobotanists. He has done much of his work in Oregon and his talks should be of particular interest to members of the Geological Society.

FIELD TRIP

Sunday Oct.20 — A field trip to the Dallas-Valsetz area will be led by Ewart M. Baldwin. The weather is rather important so it seems best to meet at Front and Yamhill at 9:00 a.m. unless it is raining. If some hardy souls would be willing to risk even cloudy weather the group can decide to proceed to Dallas where we will reassemble along Main Street opposite the courthouse. The limestone quarry will be visited and then the group will proceed up the Little Luckiamute River to Black Rock and then westward to Fanno Peak from which an excellent view of the Valsetz basin and surrounding Coast Range may be obtained.

NEW MEMBERS

Mr. and Mrs. Darrell Currier, Zigzag, Oregon.

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ANNUAL PICNIC

The weather man supplied a perfect warm evening setting on Friday, August 23, at Mount Tabor Park, when 145 Geesockers met and enjoyed themselves at their annual picnic and program. Outstanding visitors and out-of-town members present included Dr. Warren D. Smith from Eugene; Dr. Herman Clark, Carl Richards, and three other members of the Salem Geological Society, and "Dead-Eye Ada", who more or less disrupted the meal by picking off, with her sure-shot rifle, numerous innocuous (paper) birds and beasts perched upon the surrounding firs (in explanation to the uninitiated, this was a rib on Ada Henley, who had unwisely related the week before how she had been trying to scare away the sparrows who were annoying the songbirds in her yard, and had quite inadvertently, but most unerringly slain one of said sparrows, much to her consternation! May Dale was responsible for the impersonation).

Promptly at 8:00 p.m. the meeting was called to order in Mount Tabor Cinder cone amphitheatre by President John Allen, who, after introduction of Founder and Honorary Life Member Dr. E. T. Hodge and Charter Member Dr. W.D. Smith, proceeded with the most important event of the evening, the presentation of a parchment certificate (No. 2) of Honorary Life Membership to A.W.Hancock, past President and charter member of the society. The certificate read as follows:

"In recognition of outstanding contribution to the advancement

of knowledge of the Geology of the Oregon Country,

The Board of Directors

of the

GEOLOGICAL SOCIETY OF THE OREGON COUNTRY

has unanimously elected

A. W. HANCOCK

HONORARY LIFE FELLOW

with all the rights and privileges thereto pertaining.

Given at Portland, Oregon, this twenty-first day of March in the

year Nineteen Hundred and Forty-six."

The meeting was then turned over to the master of ceremonies, Dr. Adolph Weinzirl, who began the stunt program with the traditional song, led by Dr. J.C. Stevens. The program, under the direction of Lotus Simon, ably assisted by Rose Jennings, was "best ever" as it always is, and had the additional, and not-always-before-realized advantage of being short enough so that the audience did not tire of the hard park benches. It started with what at first appeared to be routine report of the Service Committee chairman, Leslie Bartow, who called upon Leo Simon to review a new set of books in which he thought the society ought to be interested. Leo came on the scene toting a 20-pound tome, which he announced was the first volume of a set, edited by Dr. W.D. Smith, entitled "Geologists At Their Best," or "The Other Hobbies of Amateur Geologists."

He then proceeded to enumerate and review individual chapters of the volume, each of them written by famous (and infamous) members of the society, concluding with the remark that succeeding volumes would be for sale for $1000 each.

The next stunt consisted of a meeting of the research staff for the publishing firm of Baldwin & Baldwin held in the Museum of Science and Industry. The meeting was called to order by the chairman, Miss Berrie Horton, and the female contingent of the society was interviewed concerning their respective hobbies (and their hubbies' hobbies). The general impression received by this male member of the audience was that the married ladies had time for little else than taking care of the latter; while the "girls who walk alone," interviewed by Glenna Teeters, went to town on a variety of fields too numerous to mention. The grandmothers, however, practically stole the show with their display of their grandchildren's pictures.

The prominent, petrologic poetaster (J. Dean Butler) then took the stage, with a rhymed biography of the man of the evening, Lon Hancock. Mrs. Hancock swears that the facts are true, and she ought to know!

Upon request, Dr. Smith spoke a few informal words, and then the meeting broke up (ahead of time!) with the singing of "There's a Long, Long Trail."

J.E.A.

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LUNCHEON MEETING - THURSDAY, AUGUST 8, 1946

Mr. Hancock, having been conscripted, presided at the meeting.....In addition, he brought a varied assortment of fossils, including horses' teeth and other small teeth, dry land snails, and a small wolf's head from the John Day (it looked like a nasty-tempered beast).....Dr. Booth inquired if, with Mr. Hancock's ability to recreate an entire skeleton from a handful of bones, he could also produce the sound the wolf made. Mr. Hancock did not have an opportunity to exercise his imagination - he was forestalled by a convincing whistle from down the table.....The appearance of Clarence Phillips, a charter member long missing from the luncheons, rated rousing applause.....Mr. Fischer had intended to bring a specimen gathered on a trip to the top of Mount St. Helens, but instead brought a guest, Mr. Ken. R. Whitney.....Dr. Stevens reported that the Museum Foundation has additional space in its headquarters at the Portland Hotel and that the hotel carpenter has offered to build a case for a display of specimens. Since a variety of exhibits will be needed, he asked that the members look over their collections, and, if they find something especially attractive, bring a selection to the office for a time. He also invited members to call any day except Saturday.....Miss Rose Jennings displayed a tinted photograph taken at the annual banquet.

Miriam Shepard

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NEWS NOTES

Mr. and Mrs. J. Martin Weber and family have moved to Parker Dam, California, where Jim has taken a position as principal of the high and elementary schools. He also teaches in the high school. Because of the distance from Portland, he feels that he should resign as membership chairman of the G.S.O.C. but we are glad to note that he still retains his membership in the society.

John Robinson attended a conference of the Western Division of the Water Resources Branch of the Geological Survey in Carson City, Nevada, September 18-20. Tours of Virginia City and Steamboat Springs were taken by the conferees.

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NEWLY ELECTED FELLOWS

Past Presidents of the Geological Society in good standing were elected FELLOWS in the Society at a meeting of the Board of Directors held on April 12, 1946, and it was suggested that hereafter the election of the retiring President to this honor be made a part of the Annual Banquet program.

Fellows of the Society are now as follows:

	Date of Presidency
Clarence Phillips	1936
A. D. Vance	1937
Dr. J. C. Stevens	1940
Kenneth Phillips	1941
Bruce Schminky	1942
Lloyd L. Ruff	1943
E. N. Bates	1944

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EXTENSION COURSES

Dr. John Eliot Allen, geologist, State Department of Geology and Mineral Industries, will present three courses in geology during the coming school year under the auspices of the Portland Extension Center.

Dr. J. F. Cramer, dean of the general extension division of the Oregon state system of higher education, reports that Dr. Allen's fall term course will be "Rocks and Minerals," a three credit-hour course that will be presented Thursday evenings. Classes will meet at Lincoln High School, 6:45 p.m. to 9:25 p.m. Fall term classes begin September 23 with late registration permitted as long as two weeks after that date.

During the winter term Dr. Allen will teach "Geology of Oregon," also a three hour course.

"Life of the Past" will be Dr. Allen's spring term subject.

Fall term registrations prior to the start of classes are being accepted during regular office hours at Room 207, Education Center Building, 220 S.W.Alder street. After September 23, students may register during evenings Monday through Thursday at Lincoln High School.

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MEMBERSHIP RENEWED

Mr. and Mrs. Ted Gordon, Box 100, Route 4, Salem, Oregon.

CHANGE OF ADDRESS

Mr. and Mrs. J. Martin Weber, Parker Dam, California.
Miss Lotus Simon, 514 N. Lake, Madison 6, Wisconsin.

CORRECTION

	Zone	Phone
Mrs. H. Mildred Stockwell, 1015 S.E. 26th Avenue(not 25th Ave.)	15	EA 4281

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DESCHUTES PERLITE MINE TRIP

Ten cars with 37 members of the geological society took out over the Wapinitia Pass Saturday, September 28, under the joint leadership of Hancock and Allen. Most of the group left early enough to meet for lunch at Little Crater Lake, 3 miles west of the Skyline Road and 7 miles south of the highway. This little gem of a lake lies out in the center of a wide mountain meadow, and is only 50 to 75 feet across, and is nearly circular in outline. It is, however, as deep as it is wide, with vertical or overhanging walls on three sides. A considerable flow of crystal clear water from the lake feeds the stream down through the meadow. Various hypotheses were advanced as to the origin of the lake, but the concensus of opinion seemed to be that it is most likely a collapsed lava tube, which would best account for the steep and overhanging walls and the flow of water.

After lunch at the little campground a few hundred yards from the lake, the group, under the direction of Lon Hancock, proceeded to Sunflower Flats where several localities of agate and nodule material were investigated, with fair luck, considering that the Agate and Mineral Society had been there the week previous. The party then drove on in to Maupin for the night, stopping by the way to examine a roadside quarry in Deschutes gravels, which were found to be predominantly rhyolitic in composition.

At 9 o'clock sharp Sunday morning President Allen called the group together for a short talk on the sights to be seen during the day, and for warning as to the basic caravan rule "Keep the car behind you in sight!". The party then started the 14-mile trek up the Deschutes Canyon to the mine boat-landing. The first stop was at a washout, where a flash flood had swept down a narrow rocky gorge in the wall of the canyon, had taken out the road, carried boulders as large as 10 feet in diameter along with it, and had half-dammed the river with a wide alluvial fan. It was an admirable illustration not only of the "5th power (formerly called 6th) of the velocity rule" but of the power of loaded mud to carry large sized boulders. Two stops were made in the portion of the canyon walled with Columbia River basalt, to observe, first, a feeder vent to a lava flow within the series, and second, to discuss a curious arch-shaped structure between the flows, for which the several explanations all seemed more or less unsatisfactory. As the party progressed up the river, and deeper in the stratigraphic section, the entire basalt sequence was traversed. Four miles below the mine, the canyon enters into Clarno rhyolite. Two miles below the mine the perlite zone crosses the river, and is exposed in the road cut, where a stop was made for examination and for specimen collecting.

The group reached the boat-landing at 11:00 o'clock, to be met by Mr. Paul B. Schmidt, manager of the Lady Francis Mine, who ferried the party across the river, four at a time, in an outboard power boat. Time out was taken for lunch under the only tree at the mine camp, a "Hackberry," according to Leo Simon. Then the entire 37 people in the party crowded into the dump body of the company 2-ton truck (37 x 150 : 5,550 pounds - after lunch -) and were carried one mile up the bumpy steep road which climbs 500 feet up to the mine portal.

There the group were taken through a part of the 3000 feet of underground workings and saw the perlite in place within the mountain, as well as the lenses of rhyolite interbedded with it and the nodules and incipient thunder eggs in the rhyolite. After the trip through the mine, led by John Allen, a few of the more hardy souls side-hilled around the mountain and across Landslide Cove to an agate locality, while part of the remainder walked down the hill and a few received a rather thrilling ride down the hill in the truck.

The boat ferry commenced operations again at 3:00 p.m., this time 5 at a time, and the party passed through the locked gate on the road soon after 4 o'clock on their homeward way. The weather had been perfect for the two-day outing, clear and warm. But the next day it rained!

J.E.A.

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FALLS OF THE SILETZ RIVER SYSTEM

Perhaps the highest waterfall on a major Coast Range stream is located on Warnick Creek, one of the large tributaries of the Siletz River in western Polk County. The stream drops approximately 200 feet into a boxlike canyon caused by headward erosion of the creek through a thick diabasic sill that penetrates upper Eocene sediments. Warnick Creek is accessible only by private logging road and forest trails. The headwaters of the stream flow through a broad valley bordered by first growth timber, which unlike most of the western Oregon forests, contains a stand of white pine.

Another prominent falls is situated on Boulder Creek, another large tributary of the Siletz, approximately a mile above the mouth of Little Boulder Creek. The falls have a sheer drop of nearly 40 feet and likewise plunge over a sill, this time in the middle Eocene volcanic series.

The falls of the Siletz marked upon the Valsetz topographic map (29th Army Engineers) is situated nearly 2 miles below the forks of the river. It is more of a cataract than a sheer drop. The total fall is about 60 feet as the river wends its way around huge blocks of volcanic breccia of the middle Eocene volcanic series. This cataract would be very interesting during flood time.

Ewart M. Baldwin

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VERTEBRATE FOSSILS NEAR SILVERTON

A remarkable collection of vertebrate fossils was unearthed at the Paul Pinson farm located in Evans Valley, 2½ miles northeast of Silverton. Mr. Pinson, aware of the scientific value of these fossil remains, halted further excavation so that the fossils could be carefully removed at a later time.

The deposit has been visited by Dr. W. D. Smith of the University of Oregon and Dr. E. L. Packard of Oregon State College, as well as many other interested parties. Dr. Smith has expressed the hope that adequate funds could be procured to finance the excavation of these valuable remains under the direction of a committee comprised of interested scientists and the superintendent of state parks. Considerable care must be used during excavation and the proper preservatives applied soon, otherwise the bones crumble and are lost. At present the remaining fossils are buried beneath the water table and therefore preserved much as they have been for thousands of years. As soon as the winter rainy season is past, though, plans could be made to secure excellent specimens for both the state college and university as well as the Oregon Memorial Museum to be located in Portland.

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GEOLOGIC TIME SCALE

The following chart was compiled by Mr. L.F. Heuperman of the Salem Geological Society and reproduced here with his permission. Additional copies may be obtained upon request.

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GEOLOGIC TIME CHART

ERA	PERIOD / EPOCH	OROGENIC EVENTS	DOMINANT LIFE: ANIMAL	DOMINANT LIFE: PLANT	DURATION (Figures are Millions)	BEGINNING YEARS AGO (Figures are Millions)
CENOZOIC	QUATERNARY — RECENT		Man		25000 Years	25000 Years
	QUATERNARY — PLEISTOCENE	Cascadian Revolution			1	1
	TERTIARY — PLIOCENE				11	12
	TERTIARY — MIOCENE			Deciduous Trees	18	30
	TERTIARY — OLIGOCENE		Mammals Birds		10	40
	TERTIARY — EOCENE				15	55
	TERTIARY — PALEOCENE				5	60
MESOZOIC	CRETACEOUS	Laramide Revolution			55	115
	JURASSIC	Nevadian Disturbance	Reptiles	Conifers Cycads Gingkos	40	155
	TRIASSIC	Palisade Disturbance			35	190
PALEOZOIC	PERMIAN	Appalachian Revolution		Scale Trees Cordaites Seed Ferns	30	220
	CARBONIFEROUS — PENNSYLVANIAN		Amphibians		30	250
	CARBONIFEROUS — MISSISSIPIAN				30	280
	DEVONIAN	Acadian Disturbance	Beginning of Spiders and Insects; Fishes; Corals	Ferns and Seed Ferns	40	320
	SILURIAN				30	350
	ORDOVICIAN	Taconian Disturbance	Higher Invertebrates including Trilobites		60	410
	CAMBRIAN				80	490
PROTEROZOIC — CRYPTOZOIC EON (PRE-CAMBRIAN)	KEWEENAWAN	Killarney Revolution			1300	
	HURONIAN		Worms and other Soft-tissued forms	Algae		
	TIMISKAMIAN	Algonkian Revolution				
ARCHEOZOIC	KEEWATIN	Laurentian Revolution				Oldest known rocks 1800

TIME CURVE

Compiled by L.F. Hauperman

0 — 100 — 200 — 300 — 400 — 500 Million Years

SCALE of TIME

LUNCHEON MEETING - THURSDAY, AUGUST 15, 1946

A vacation at his Oregon home after 35 years as a missionary in Africa is being enjoyed by Dr. Fred W. Neal, who was introduced as a guest of the Oregon Museum Foundation by Dr. Stevens. Dr. Neal brought from Africa a large anthropological collection,and some of the pieces will be on view in the Foundation office. He stated that he commenced to collect things when he first went to the Dark Continent. He naturally returned to Oregon for his vacation, since he is an Oregonian of the third generation, his grandparents having come here in the early days.....Dr. and Mrs. Tom Thayer were introduced as his guests by Dr. John Eliot Allen. They will be in Oregon for the next year, mapping in the John Day region. Dr. Thayer has already been asked to lead a trip into that country next spring.....Also a guest of Dr. Allen was Maurice Brady, who will study at the University of Nevada this fall.....Miss James introduced Mr. Meyers, who is geologist with the U.S. Army Engineers.....Among the 38 persons present at the luncheon were Mrs. E. H. Whitney and Miss Manetta Nelson, guests of Miss Clara Nelson.....Chunks of gabbro rock from the Warsaw, Wisconsin, district that came out of the Commonwealth Building were passed around by Mr. Minar.....Leaf fossils had been reported from the Smith Rocks irrigation canal of Central Oregon, but Leo Simon ruefully described a trip in unsuccessful search of them, after taking a wrong turn. The samples of conifer fossils he showed had been collected by Florence Woodward. He also had a cut and polished limb cast to show.....A miner in the John Day country at the head of Spanish Gulch told Mr. Hancock there were fossil oysters and that in a nearby ditch there were a lot of living oysters "just like them!" Other natives verified the story. Mr. Hancock returned with a rock liberally stuffed with marine bivalves, but perhaps the salt content of the irrigation water was low that day - he didn't even find a fresh-water mussel.....Malachite and chrysocolla from the Miami mines of Arizona were displayed by Dr. Booth....."We want the museum in the civic center, wherever that may be situated," declared Dr. Stevens, who reported on the plans that had been made to submit the civic center proposal to the voters in the November election.

Miriam Shepard

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THURSDAY, AUGUST 22, 1946

A new manuscript concerning the Oregon coast from California to the Columbia River brought Dr. Warren D. Smith to Portland and resulted in his attendance at the luncheon meeting. His contribution to the volume described the scenic features of the region with highlights on geology. Dr. Smith, a charter member, recently returned from two weeks in the John Day country with Dr. Cressman, Dr. Reed and four students, examining archaeological sites. They found some interesting things but found more of geological interest. Especially noteworthy was a rhinoceros jaw, brought in in the matrix. "Dr. Packard and I first camped there in 1917 at a ranch where this year they let us camp and furnished us meals. Near Turtle Cove one day Dr. Cressman took out the thermometer to find it was 122° on the ground. One trouble in collecting fossils there now is that in the recent storm everything was covered with mud from 6 inches to one foot thick, which veneers the cliffs. The best possibilities for collecting are in some of the road cuts. Dr. Cressman was trying to find traces of the migration of the Oregon Indians. We found Dentalium shells that could only have come from the coast." Dr. Smith asserted that he hopes Portland will get a museum because it is needed, although he asserted "We have some things in our museum that Portland hasn't.".....Dr. W.A.Anderson of the city health bureau was a visitor introduced by Mr. Vance.....Miss Hughes had as her guest Miss Ethel Strome Lothian.....The new secretary of the Museum Foundation office, Miss Ella Stone, was presented by Mrs. Oberson, who asserted that with the addition of exhibits which are being shown there, the office already is the "Oregon Memorial Museum".....Miss Iris Simon was a guest of her cousin, Miss Lotus Simon.....Pyrite from the mouth of the Raft River in Washington was shown by Dr. Baldwin.....When John Robinson found a clamshell in the Olympic mountains 20 miles from tidewater, he wondered if Mr. Vance had been there ahead of him, so he brought the shell with him to inquire.

GEOLOGICAL SOCIETY NEWS LETTER

Volume 12, No. 11 November 1946

SOCIETY ACTIVITIES

LECTURES: On the second and fourth Fridays of each month at the auditorium (third floor) of the Public Service Building, 920 S.W. 6th Ave., at 8:00 p.m. If the announcements do not appear in NEWS-LETTER, see Oregonian or Oregon Journal, previous to regular meeting date.

TRIPS: Watch for announcements of at least one trip each month. If you know of or can lead a trip yourself, call A.W.Hancock, SU 5285.

LUNCHEONS: Every Thursday noon at the House of Hicks restaurant, 425 S.W. Taylor St., between S.W. 4th and S.W. 5th Aves. Luncheon 85¢.

MEETING ANNOUNCEMENTS

Friday Nov. 8 — Jack DeMent will speak on the Atomic Bomb Tests at Bikini at Benson High Auditorium under the auspices of the Oregon Museum Foundation. Members of the Geological Society are urged to attend. Admission will be 50¢ for adults; 25¢ for High Schoolers. Members of the Foundation are admitted free. He will give his impressions of the test and show technicolor sound movies of the bomb in action.

November 12 & 14 — Dr. Ralph W. Chaney, Head of the Department of Paleontology at the University of California, will speak under the auspices of the Condon Lecture Series at Library Hall at 8:00 p.m. Dr. Chaney is one of the foremost paleobotanists. He has done much of his work in Oregon and his talks should be of particular interest to members of the Geological Society.

Friday Nov.22 — Meeting to be announced. Watch the daily papers.

NEW MEMBERS

	Zone	Phone
Mr. and Mrs. Norris B. Stone, Rt. 1, Box 179A, Oswego, Oregon,		OS 6631
424 Henry Bldg.		AT 5416
Dr. and Mrs. John H. Hershey, 9222 N. Woolsey Court, Portland	3	UN 4639
Mr. R. Erickson, Oswego, Oregon,		OS 8782
738 Morgan Bldg.		BE 7191
Mr. and Mrs. Richard J. Anderson, Res. Geol., Alcoa Mining Co., Hillsboro, Oregon, Box 199.		
Dr. and Mrs. Ward A. Anderson, 10216 N.E.Skidmore St., Portland	13	WE 5228
Emergency Hospital		AT 6611

CHANGE OF ADDRESS

May R. Dale, 1728 S.W.Market St., Portland 1, Oregon.

Mr. and Mrs. E. Clyde Woodard formerly of Bend, Oregon, have moved to the following address: Rt. 9, Box 951, Portland 16, Oregon.

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Mr. and Mrs. Darrell Currier were mistakenly listed as new members in the October issue. Mrs. Currier is a charter member of the Society.

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G.S.O.C. Note: The Berenson Hardware Company, 907 S.W.Front Avenue (near the new Journal Bldg.) reports the arrival of 3 dozen Stanley Geologic Picks.

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PREAMBLE

To the members

The by-laws of the Geological Society of the Oregon Country were published in the NEWS-LETTER of February 25, 1937, (Vol. 3, pp. 31-33).

New members of the Society have no reference to this document which contains important information concerning the objectives, offices, membership, dues, and duties. It is believed that re-publishing this material will be of value to the membership, and the president asks that each of you read it carefully.

Sincerely,

/s/ John Eliot Allen.

* * *

BY-LAWS

of

GEOLOGICAL SOCIETY OF THE OREGON COUNTRY

A Corporation

ARTICLE I

Name, Location and Object

Section 1. The name of this Corporation shall be the GEOLOGICAL SOCIETY OF THE OREGON COUNTRY.

Section 2. The offices of the Society shall be located in the City of Portland, Oregon.

Section 3. The objects of the Society shall be:

(1) To provide facilities for members of the Society to study Geology, particularly the geology of the Oregon Country.

(2) The establishment and maintenance of a library and museum of geological works, maps and specimens.

(3) The encouragement of geological study among amateurs.

(4) The support and promotion of geologic investigation in the Oregon Country.

(5) The designation, preservation and interpretation of important geologic features of the Oregon Country.

(6) The development of the mental capacities of its members in the study of geology and the promotion of better acquaintance and closer association between those engaged in the above objects.

ARTICLE II

Membership

Section 1. The Society shall be composed of members who, by knowledge, experience and honorable standing are qualified to advance the objects of the Society, and who shall be elected to membership as hereinafter provided, and shall be divided into four classes of membership, as follows: Junior, Member, Fellow and Honorary Life Fellow.

Section 2. The Executive Committee, in its discretion, may issue membership cards in such form as they may determine.

Section 3. Qualification for membership:

(1) A Junior shall be a person over eighteen and under twenty-one years of age who is interested in and supports the aims and objects of the Society, and who has been recommended by the membership committee.

(2) A Member shall be a person at least twenty-one years of age, who is interested in and supports the aims and objects of the Society and who has been recommended by the membership committee.

(3) A Fellow must be elected by two-thirds of the Executive Committee for some definite contribution to the welfare and objectives of the Society.

(4) An Honorary Life Fellow must be elected unanimously by the Executive Committee for outstanding contribution to or attainment in the study of Geology.

ARTICLE III

Dues

Section 1. The annual dues for a Junior shall be $1.00, the dues for members living in counties not adjacent to Multnomah County shall be $2.50, and all other members shall pay annual dues of $3.50; provided however, that there shall be extended to the wife or husband of a member, as the case may be, all privileges of the Society, except the right to receive the publication of the Society. Honorary Life Fellows shall not be required to pay dues.

Section 2. Dues shall be payable annually, in advance on or before March first of each year. All applications for membership shall be accompanied by the first year's dues. The executive committee, by resolution, may fix part year dues for applicants for membership, which shall only be effective for the balance of the year in which such application be received.

Section 3. Any member whose dues are more than two months in arrears shall be notified by the Secretary, of his delinquency. Should said delinquent dues be not paid when they are four months in arrears, the delinquent member shall lose the right to vote; if such dues become six months in arrears, the delinquent member shall forfeit his connection with the Society. Any member delinquent in his dues shall not receive the publications of the Society.

ARTICLE IV

Officers and Directors

Section 1. The officers of the Society shall be a President, a Vice-President, a Secretary and a Treasurer, and said officers shall act as members of the Board of Directors, and in addition thereto three Directors at large shall be elected as hereinafter provided.

Section 2. The Board of Directors shall be known as the Executive Committee, and shall be composed of nine members, as follows: The two latest living past Presidents continuing to be members, the President, Vice-President, Secreatry, Treasurer and the three Directors at large provided for in Section 1 of this Article IV.

Section 3. The terms of office of all officers shall be one year with the exception of the Directors who shall serve for three years, provided that at the first election the nominee for director receiving the highest number of votes shall serve for three years, the nominee receiving the next highest number of votes shall serve for two years, the the nominee receiving the third highest number of votes shall serve for one year. Thereafter one Director shall be elected each year. Until such time as the Society has existing living past President, the positions provided for them on the Executive Committee shall be filled by appointment by the elected members of the Executive Committee.

Section 4. The Executive Committee shall appoint officers to all vacancies except that the Vice-President shall complete the term of the President in case of a vacancy.

Section 5. The President shall be ineligible for re-election to succeed himself.

ARTICLE V

Management and Duties of Officers

Section 1. All the powers of the Society shall be vested in the Executive Committee, who shall manage the affairs of the Society in accordance with the Articles of Incorporation, By-Laws and such statutes as may apply to this Corporation.

Section 2. All expenditures of money shall be authorized by the Executive Committee, and warrants for the payment of such expenditures shall be drawn on the Treasurer, and shall be signed by the President and Secretary, and checks shall be signed by such persons as may be authorized by the Executive Committee.

Section 3. The President shall serve as the executive head of the Executive Committee. The President shall have general supervision of the affairs of the Society. He shall preside at the meetings of the Society and of the Executive Committee and shall be ex-officio member of all committees.

Section 4. The Vice-President shall preside at meetings when required to do so by the President or in the absence of the President he shall exercise the duties of that office.

Section 5. The Secretary shall be under the direction of the President and the Executive Committee. He shall be expected to attend all meetings of the Society and of the Executive Committee and prepare the business therefor and record the proceedings thereof. He shall see that all monies due the Society are collected. He shall scrutinize all expenditures and use his best endeavour to secure economy in operation of the Society. He shall personally certify to the correctness of all bills and vouchers on which money is to be paid, to the best of his ability and belief. He shall perform all duties which may be assigned to him from time to time by the President or the Executive Committee.

Section 6. The Treasurer shall receive all monies and deposit the same to the name of the Society. He shall pay all bills when certified and audited by the Secretary, and warrants for the payment of the same have been drawn on him by the President and Secretary.

Section 7. At the expense of the Society, the Treasurer may be required to give bond in such amount and form and with such sureties as the Executive Committee may determine.

ARTICLE VI

Fiscal Year

Section 1. The fiscal year of this Society shall begin with the first day of March of each year and end with the first day of March of the succeeding year.

ARTICLE VII

Meetings

Section 1. Meetings of the Society shall be held at such times and places as fixed by the Executive Committee.

Section 2. The annual meeting of this Society shall be held at some time during February, at such time and place as may be fixed by the Executive Committee, at which time the officers of the Society for the ensuing year shall be elected. Twenty members shall constitute a quorum at any meeting of the Society.

Section 3. Regular meetings of the Executive Committee shall be held immediately following the annual meeting, and special meetings of the Executive Committee may be held at such times and places as the President shall designate. At all meetings of the Executive Committee five or more members shall constitute a quorum for the transaction of business.

Section 4. Notice of the annual meeting of the Society shall be sufficient if the time and place thereof be designated in the official publication of the Society. At least 24 hours notice shall be required of meetings of the Executive Committee.

ARTICLE VIII

Nomination and Election of Officers

Section 1. A Nominating Committee shall be appointed consisting of five members, none of whom shall be officers or Directors of the Society. Not later than

the 15th day of December, prior to the time of the annual meeting of the Society, the nominating committee shall file with the Secretary its nominations, containing the name of one nominee for each office to be balloted on. On or before the first day of January of each year. The Secretary shall notify the members in writing, or by a publication in the official publication of the Society, the names of nominees for each office. Other nominations may be made by members of the Society by filing with the Secretary, on or before the 15th day of January of each year, a list of such nominations, which shall be signed by at least ten members of the Society. The names of the additional nominees shall be communicated by the Secretary to each member, either by writing or by publication in the official publication of the Society, which communication shall be made not less than fifteen days prior to the annual meeting.

Section 2. A letter ballot containing the nominees of the regular and special tickets shall be enclosed and mailed to each member. All ballots must be returned and in the hands of the Secretary prior to the annual meeting at which meeting the Secretary shall announce the result thereof. In case a majority of all the ballots shall not have been cast for any candidate for any office, the Society shall proceed to make an election, in open meeting, for such office from the two candidates having the highest number of votes.

Section 3. All officers elected shall take office as of the first of March following the annual meeting.

ARTICLE IX

Order of Business

Section 1. The order of business at the regular annual meeting and all business meetings shall be in conformance with Roberts' Rules of Order, or any other rules of order adopted by the Executive Committee.

ARTICLE X

Seal

Section 1. This Society, as a corporation, shall have a seal, the impression of which shall be as follows:

(Not reproduced)

ARTICLE XI

Committees

Section 1. The Executive Committee may create such committees as it may deem advisable, and appoint the members thereof.

Section 2. All committees shall be appointed by the Executive Committee not later than thirty (30) days after the regular annual business meeting. All committee members shall perform the duties of the respective committees until their successors are duly appointed. The number of members on the various committees shall be left to the discretion of the Executive Committee.

ARTICLE XII

Amendments

Section 1. Proposed amendments to these By-Laws must be reduced to writing and signed by not less than ten members in good standing, except such amendments as made by the Executive Committee, and amendements shall be submitted and acted upon as follows:

Section 2. Proposed amendments shall be filed with the Secretary who shall submit same to the Executive Committee at its first regular or called meeting thereafter for its approval or disapproval. At least fifteen days prior to the date of the regular annual meeting the proposed amendment, accompanied by the action of the Executive Committee, shall be mailed to each member of the Society. If the proposed amendment is filed with the Secretary more than ninety days prior to the regular annual meeting a letter ballot may be enclosed with said proposed amendment, which ballot shall be returned to the Secretary within fifteen days from the date of mailing by the Secretary. No proposed amendement shall be considered at the regular annual meeting unless filed with the Secretary at least thirty days prior thereto.

Section 3. If the proposed amendment has been approved by the Executive Committee, then an affirmative vote of a majority of all ballots cast shall be necessary to the adoption of the amendment.

If the proposed amendment has not been approved by the Executive Committee, then an affirmative vote of two-thirds of all ballots cast shall be necessary to the adoption of the amendment.

Any amendment defeated by letter ballot shall not be re-submitted for adoption except at a regular annual meeting or until one year has elapsed.

Amendments shall become effective immediately, provided that the officers of the Society, at the time any amendment may be adopted shall continue in office until the expiration of the time for which they were elected.

Section 4. Notwithstanding the foregoing provisions in this Article XII, the Executive Committee may by a two-thirds vote of those present at a meeting duly called, amend the By-Laws provided that the Secretary shall have given written notice of such amendment to each member of the committee at least seven days before the meeting at which action thereon is to be taken. Such amendments shall become effective immediately, but shall be submitted for ratification at the next succeeding annual meeting.

ARTICLE XIII

Chapters

Section 1. Formation and designation:

Ten (10) or more persons, who are interested in carrying out the objects and purposes of this Society, may petition the Society as herein provided, for a Charter from the Society, and if granted such persons may hereafter form a Chapter of the Society, subject, however, to the Articles of Incorporation and By-Laws of the Society. Chapter shall be designated by consecutive numbers, followed by the name of the city or town where the chapter is located.

Section 2. Petition:

Petitions for the formation of Chapters, and the granting of a charter shall be addressed to the Society, and shall be signed by not less than ten (10) persons, as herein provided, and shall set forth, among other things, the location of the proposed Chapter, and the names and addresses of the charter members of the proposed Chapter.

Section 3. Charter:

If such petition be granted, the Society, shall issue a Charter certificate to such Chapter, in such form as may be authorized by the Executive Committee. Petitions for such charters for the formation of Chapters, shall be considered at the Annual Meeting of the Society. After granting of charter, all members of such chapter shall then be members of the Geological Society.

Section 4. Dues and membership:

Any Chapter of the Society shall have the right to fix the dues of such Chapter, provided however, that the minimum dues fixed by any Chapter, shall not be less than the dues fixed by the By-Laws of the Society. Each Chapter shall remit to the Treasurer of the Society, not less than Two Dollars ($2.00) for each member on the rolls of such Chapter, such remittance to be made on or before the 1st day of April, of each year, the names and addresses of the members in good standing in such Chapter as of Marsh 1st of each year.

Section 5. By-Laws:

Each Chapter and the members thereof, shall be governed by the By-laws of the Society, but each Chapter shall have the right to adopt any additional by-laws or regulations solely for the government of such individual Chapter, provided however, that such additional by-laws or regulations shall not conflict with the Articles of Incorporation of this Society, or the By-Laws of this Society, or the laws of the United States or of the State of Oregon or any other state in which the Chapter might be situated.

Section 6. Revocation of Charter:

In the event that any Chapter shall fail or refuse to abide by the Articles of Incoporation or By-laws of this Society, or regulations promulgated by the Executive Committee, or violate any of the provisions of such Articles, By-laws or regulations, the Executive Committee may revoke the Charter of such Chapter, at any regular or special meeting of the Executive Committee provided however, that at least ten (10) days notice in writing shall be given by the Secretary of the Society to the Secretary of such Chapter, by registered mail, notifying such Chapter of the time and place of such meeting of the Executive Committee. At such meeting any member or members of such Chapter may appear before the Executive Committee and show cause why such Charter should not be revoked.

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JUNIOR MEMBER

Mary Tisdel - arrived October 21st,1946. c/o Mr. and Mrs. Fred Tisdel, 3615 S.E. Clinton St., Portland, Oregon.

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MEMBERSHIP RENEWED

Mr. and Mrs. Chester A. Wheeler, 2944 N.E. 47th Ave., Portland, 13, Ore. GA 8243

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ITS ON ICE

By

Ralph S. Mason

Were it not for the thoughtfulness and diligence of Franklin L. Davis, the trip around the west side of Mt. Hood described here would never have been made. It seems that Mr. Davis, who is, among other things, a Mazama, was asked by the Research Committee of that organization to assist in establishing control points for checking the recession of Mt. Hood's glaciers. Mr. Davis, being very busy with other affairs, or something, and knowing of the writer's interest in mountains, did the obvious thing, and at 3 a.m. one morning toward the last of August, while one Mr. Davis was happily slumbering, the writer found himself preparing for three days of the hardest work and the most fun he has had in some time.

Ken Phillips headed the party of five which included Messrs. A. J. Gilardi, Don Onthank, Paul Livingstone and myself. After driving to Cloud Cap Inn on the north side of Mt. Hood, we hiked westward on the "Round the Mountain" Trail as far as Coe Glacier. At this point Phillips and Gilardi left to start their part of the task, which included marking the snouts of Coe, Eliot, Newton Clark, and White River glaciers. Our party continued over the trail to Elk Cove, then cut back up the valley and climed over 99 Ridge to Ladd Glacier. After locating the exact snout, or terminus of the glacier, two big yellow crosses were painted on rocks on the crests of the lateral moraines. The crosses were so placed that a line connecting them would pass through the snout. By measuring the distance from a boulder painted several years ago to the present position of the snout, a recession of 140 feet was determined. After camping near Eden Park, we continued on over scree, heather, and névé to Sandy Glacier where we again painted some huge yellow crosses and recorded the distance and bearing. Sandy Glacier showed very evident signs of having largely wasted away. Glacial till left below the snout for a considerable distance, plus striations high on the canyon walls were ample evidence of the glacier's former size. The second night's camp was on the ridge just north of Reid Glacier at an elevation of 7300 feet.

From camp the Columbia River near Camas could be seen clearly just at sunset, then the lights of Portland and other towns nearby became visible. During the night our sleep was interrupted several times by the loud cannonading as huge blocks of snow and ice crashed down over the cliffs which separate the upper part of Reid Glacier from its lower portion.

Crossing Lower Reid Glacier involved dropping down nearly 500 feet over scree and then climbing back up an equal distance again. At one time this traverse would have been much simpler since it would have meant merely walking across on the glacier which completely filled the now nearly empty canyon. Finding the snout of Zigzag Glacier was rather difficult. The glacier has shrunk to such an extent that only a tiny patch was found. On the way over from Reid the logs of the Stadter Buried Forest were seen far below. Last leg of the trip passed below Illumination Rock, and above Mississippi Head to the Summit Trail below Crater Rock, thence to Timberline Lodge.

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CHANGE OF ADDRESS

Mr. and Mrs. Hugh Miller, Winwood Court Rt. 4, Box 53, Sherwood, Oregon
Mr. and Mrs. Thomas E. Eakin, Box 79-Avalon, Catalina Island, California

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REVIEW

Postglacial Forest Succession and Climate in the Oregon Cascades

by

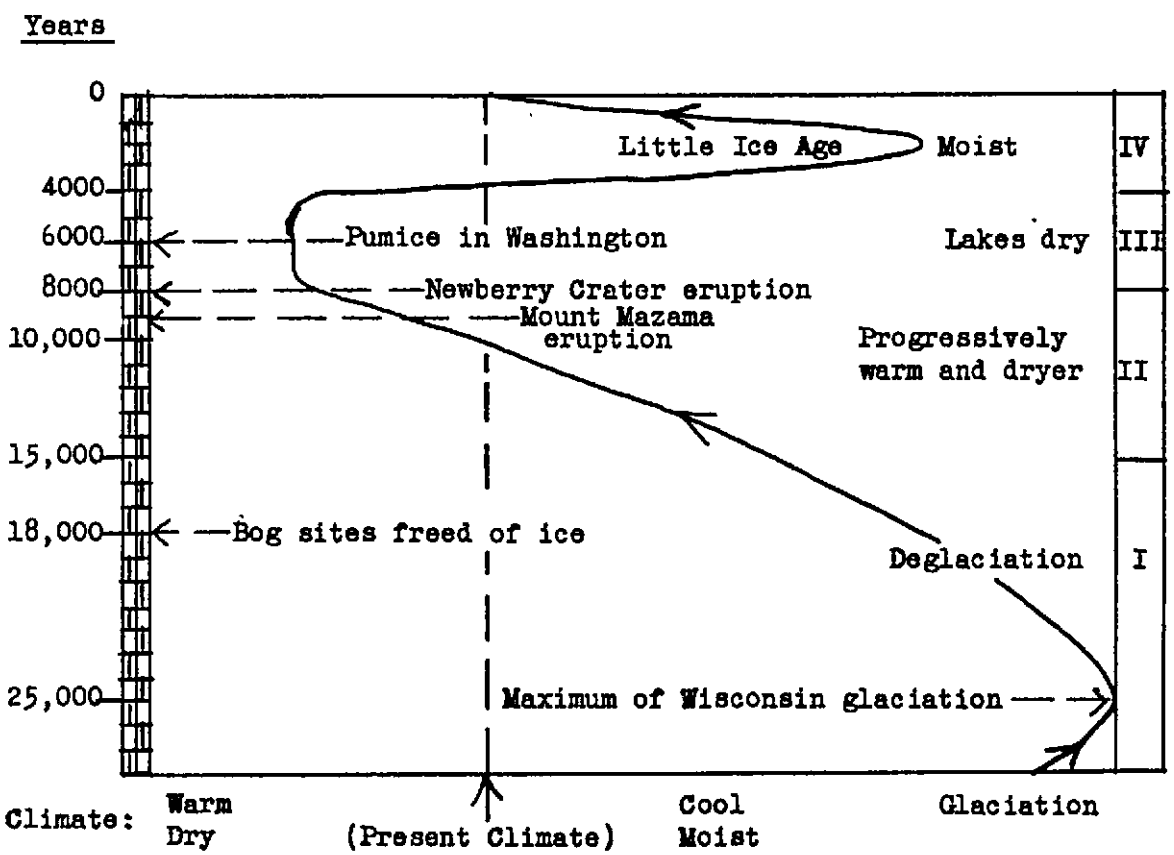
Henry P. Hansen

American Journal of Science, vol.244, no. 10,
pp. 710-734, October, 1946

Dr. Hansen continues in this paper his work on pollen profiles from bogs and swamps in western Oregon, and in addition he here summarizes and coordinates for the first time the chronology of postglacial time which is being gradually worked out in greater and greater detail by western volcanologists (Howell Williams), sedimentologists (I. A. Allison), and climatologists (E. Antevs) and glaciologists (F. Matthes) and botanists (Hansen). The varied attack on this problem by men in these different fields has yielded results - a fine example of the value of co-ordination in science.

Although Dr. Hansen presents no chart, the writer has taken the liberty of drawing up the following graph which summarizes the conclusions presented in this paper.

Postglacial Climate and Chronology



There are several points of interest to the student of the post-Pleistocene. The Mount Mazama and Newberry Crater eruptions are dated by Hansen as having occurred from 8,000 to 10,000 years ago; a point midway between Williams' original estimate of 4,000 to 7,000 years; and Allison's later conclusion of 10,000 to 14,000 years ago. The period of drouth lasting from 8,000 to 4,000 years ago was dated in 1945 by Antevs. During this period most of the eastern Oregon lakes

dried up completely. The "Little Ice Age" began about 4,000 years ago, and the present retreating glaciers on the high peaks in the Cascade Range are remnants of this period of moist cold weather, and distinctly not remnants of the last great (Wisconsin) glacial advance.

This paper adds to our knowledge of the plant life in the Cascades during the past 18,000 years, and gives a long term picture of plant successions and assemblages. Charts from five localities (Clackamas Lake, Clear Lake, Rogue River, Prospect, and Diamond Lake) give pollen diagrams for the following seven forest trees: lodgepole pine (Pinus contorta), white pine (Pinus monticola), yellow pine (Pinus ponderosa), douglas fir (Pseudotsuga taxifolia), western hemlock (Tsuga heterophylla), mountain hemlock (Tsuga mertensiana), and true fir (Abies sp.). Data from five other bogs previously discussed by Hansen are incorporated into his conclusions.

An extensive bibliography (39 papers) is appended for those who wish to refer to the original papers concerning this interesting problem.

John Eliot Allen

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LUNCHEON MEETING - THURSDAY, AUGUST 29, 1946

Reaction from the annual picnic received the blame for the light attendance at the luncheon from Mr. Baldwin, who presided, but it would also appear that the Geological Society of the Oregon Country can be baffled by a very light Oregon mist.....The few who were present had an unscheduled "floor show" in a spectacular fire two blocks away, which delayed the program a few minutes....."In Curry County you always see a lot of sheep" remarked Mr. Bates in reporting on his two weeks' trip to California. "I always look for a polka dot sheep, but this time I saw a red one, the kind thay make red flannels out of." He showed a cut and polished specimen of hardwood, manzanita or madrone, which came from a spot about 50 miles from San Francisco. At Klamath Falls he found an auto court where the office was faced with stone and petrified wood. Although he had been fearful of not obtaining accommodations, the owner found him a room "as he could see I wanted to go into oblivion in the presence of obsidian." Near McCredie Springs Mr. Bates worked hard to get the rock specimen he brought to the meeting.....Leo Simon also had a specimen, this time from the Wallowas, which he vowed was caviar but which no one was tempted to sample, since the color and texture seemed doubtful.....Photographs of tusks and teeth and pieces of jawbone of mammals recently found near Silverton were also Mr. Simon's contribution. The spot is 2½ miles northeast of Silverton known as Evans Valley, and the landowner has taken out many bones and put them in a barn with the intention of exhibiting them at a price. The bones are about 5 feet under the surface, and there are fragments all around. Most of the tusks, however, are badly rotted. Mr. Simon said that the thrill of seeing these came from observing the bones in place in the earth.....Mr. Vance described temptingly the trip to Crater Meadows and the perlite mines near Maupin scheduled for September 29.

Miriam Shepard

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LUNCHEON MEETING - THURSDAY, SEPTEMBER 5th,1946

Among the guests was Carl Stanley of Seattle, a brother of O. E. Stanley. Mr. Norris Stone, a new member, was introduced. Several members had just returned from the John Day area. Leo Simon reported on the terrible storms, lightning and rain. He went by way of Antelope, Clarno, and Spray. When he reported the lightning hung in loops, Dr. Hodge said, "You don't need to go any further - you've won the prize already". Ewart Baldwin reported hail bigger than ping pong balls from the Mt. Vernon area. The John Day region is a country of magnificant scenery and magnificent stories. Mr. Stanley sent around specimens (photographic) that he had obtained at the Mt. Tabor picnic. Miss Ada Henley circulated specimens of vesuvianite from Butte, California. Dr. Stevens presented the problem of adjusting the name of the museum to conform with recent moves by the Oregon Historical Society. He asked the advice of members. The concensus of opinion was voiced by Dr. Hodge who advised him, "to stick by his guns and leave the name as it was originally incorporated."

V. Oberson

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LUNCHEON MEETING - THURSDAY, SEPTEMBER 12,1946

An arresting formation of calcite crystals that look like a tree and which were found in Marion County was displayed by Mrs. Ted Gordon. Mrs. Gordon and Mrs. W.A. Reeves, both of whome are members of the Salem Geological club, were introduced by Mrs. Richards....Alice La Bonte and Kathryn Raley were visitors....At Mr.Vance's suggestion Mr. Hancock presided at the meeting. Mr. Hancock also provided one of the highlights of the meeting - a head, complete with lower and upper jaw, which he explained is not an oreodon although of similar order. It came from the John Day country near Turtle Cove....Dr. Beck of Ellensburg,Washington, who has been a visitor at various times the past year, described petroglyphs to be found in Washington, particularly at Whale Island (an artist friend told him the carved rock which gives the island its name is a walrus, not a whale). These are not ordinary petroglyphs but are deeply carved. An attempt is being made to have the island set aside as a national monument....A new member, Norris B. Stone, was present for his first luncheon meeting....An eight-foot petrified stump, which should be preserved at its location east of Burns, was described by Dr. Booth...."Indian Relics of the Pacific Northwest", a recently-published book by N. C. Seaman, was displayed....

Miriam Shephard

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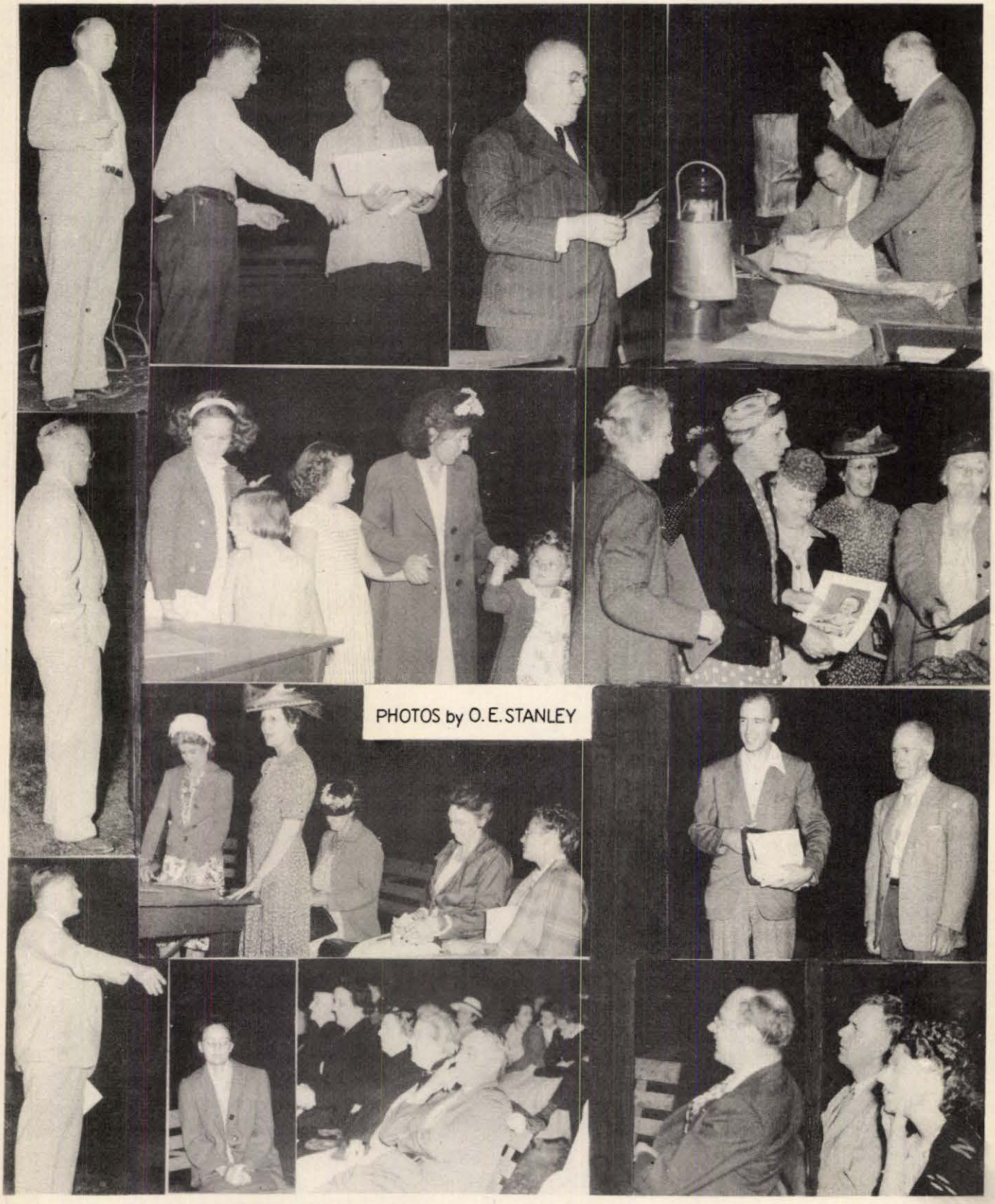
LUNCHEON MEETING - THURSDAY, SEPTEMBER 19th,1946

The Bikini atomic bomb test confirmed the Darwinian theory as to the origin of atolls, Dr. Hodge told the group of 21 members who were present at the luncheon. Conflicting theories have been held by prominent scientists, but shocks obtained from the earthquake apparently settled things definitely and proved that atolls are built on volcanoes and that the coral reefs extend down along their slopes....When President Allen called for specimens, Mr. Minar displayed two rocks given him by a friend who found them on his timber claim back of Washougal....Miss Hughes passed around a specimen labeled as chalcedony impregnated and coated with limonite, with calcite on the slab. It came from Eastern Oregon....Mr. Libbey, who had been questioned on the radio the day before about the Crescent City gold rush, admitted he is keeping his fingers crossed until he gets some authentic information....Apparently of the same mind is Dr. Hodge, who said he had not been in Crescent City for 15 years.

G.S.O.C. ANNUAL PICNIC



PHOTOS by O. E. STANLEY

His strongest memory of the trip was that on a narrow road out of there the first thing he saw was an elephant, the animated road block belonging to a small circus.... The next lecture under the auspices of the Oregon Museum Foundation will be on the atomic bomb, illustrated with official newsreels in color released by the War Department, together with black and white pictures taken by the lecturer, according to Dr. Stevens. This will be the initial showing of the newsreels and will be given in the Benson Auditorium November 8, with Jack Dement, a consultant and official observer at the bombing, as lecturer....The Foundation is planning outstanding lectures right along. They will be of real appeal, according to Dr. Stevens, and although there will be an attendance charge, Museum Foundation members will be admitted free....Rock, mineral, shell and animal exhibits crowding 78 cabinets are to be seen at the Forestry Building, according to Dr. Allen, who stated that he was amazed at the amount of material displayed. Dr. Stevens explained that the city had put them there to dramatize the necessity for a museum.

Miriam Shephard

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LUNCHEON MEETING - THURSDAY SEPTEMBER 26th,1946

Ten to 15 visitors a day from all over the country visit the office of the Oregon Museum Foundation and are interested in the collections displayed there, according to Mrs. Viola Oberson, who made a plea that any Geological Society member wishing to prepare an exhibit for the office bring it in soon. There will be available from the Battleship Oregon Commission 10 cases in which to display collections.... The society welcomed several guests, among whom was John A. Lee, an attorney and member of the Mazamas, who attended with Dr. Adams; Joseph Simon who was with his brother, Leo Simon; and Bill Cox, a cousin and former geological assistant of Dr. Baldwin. The new secretary of the Museum Foundation, Mrs. Clyde Archibald, was introduced by Mrs. Oberson....Crystals of dolomite were the unusual feature of a specimen of talc schist from Riggins, Idaho, which Lloyd Ruff brought to the meeting. Mrs. Ruff, who had not attened a meeting for some time, was warmly welcomed....A selection of belemnites from Wyoming were displayed by Dr. Baldwin, who had just returned from a trip to Burns, Lakeview, and Crater Lake....When called upon by President Allen to pass around the largest specimen at the meeting, Mr. Vance showed a chuck of heulandite and another of quartz which he had collected at his favorite collecting ground near Highway 99 into Kalama.

Miriam Shephard

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LUNCHEON MEETING - THURSDAY OCTOBER 3rd, 1946

The members that attended the luncheon arrived at the House of Hicks only to find that they were displaced from their usual room. Perhaps some turned around for the turnout was not particularly large. Mr. Stanley observed that the meat served at the Professional Engineers luncheon must have been a hen for he had to hop across the street three different times to escape cars when on his way to the bank. A "claw, tooth, or horn" (take your pick) that was sent in by N.S. Wagner from Baker, Oregon, was passed around, but opinion differed widely as to its identity. This fossil was obtained from a basement that was dug in rather recent sediment. Mr. Vance had an excellent crab from the Sunset Tunnel locality. Leon Simon passed around a replica of the Beaver money of pioneer days that adorned a piece of "counterfeit" put out by the Numismatic Society, as well as some "black pearl" from the perlite mine. He also told about a large bequest that Dr. J. Archibald Stewart left to the local Audobon Society. Dr. Stevens told of Museum plans for an

exhibit in Meier & Frank's windows. Dr. Booth announced that the perlite mine trip was evidently a success for he found fluorescent calcite and "uranium ore" in the vicinity of the mine. Two members of the society tried to pass $20.00 to pay for the meal which speaks well for the prosperity of our members. The coming field trip to the Dallas-Valsetz area was discussed. The "fossil" was sent to Dr. Packard who identified it as "the upper canine or tusk of a large boar. It shows the triangular cross section, curvature, and deep pulp cavity characteristic of the wild and domesticated pigs. The specimen does not appear to represent a fossil."

E. M. Baldwin

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LUNCHEON MEETING - THURSDAY OCTOBER 10th,1946

To the question "How many saw the meteorites last night?" with which Dr. Allen opened the meeting, a unanimity of 16 hands was raised. "Funny," he mused, "I didn't see any meteorites." There was a concerted groan, after which the program was largely a discussion of the preceding evening's meteor shower. Bruce Schminky, who provided an interesting report of his observations, spoke of the effect gained by looking toward the moon, when the reflection of moonlight on the trail of smoke was striking. "Those that passed between the observer and the moon left a trail of luminescence," he declared....To a discussion of which part of the sky the flashes seemed to be coming from, Mr. Vance added that he viewed a previous shower from Yachats, and they definitely came from one spot in the sky....Mr. Libbey reported that he had had one telephone call from a man who felt ashes fall on his head and heard something strike the garage....Mr. Haycraft, on the staff of the Museum Foundation, was a guest of Dr. Allen and made a plea for the continued success of the organization....Photographs of Collier Glacier in the Three Sisters region, taken in 1936 and 1946 were brought by Dr. Ruth Hopson. She had filmed the glacier to show the rate of recession of the ice....

Miriam Shephard

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OREGON QUICKSILVER MAP

All known quicksilver deposits in Oregon are shown in red on a black and white map of the State which has just been issued by the State Department of Geology and Mineral Industries. The map on a scale of four miles to the inch was prepared by Mr. Francis Frederick, consulting mining geologist of San Francisco, who studied Oregon quicksilver deposits in 1943 and 1944. In addition to showing location of these deposits, the map has a table in the margin which lists all mines according to the counties and to the amount of their total production.

This map may be obtained at the Portland office of the Department at 702 Woodlark Building, or at the field offices located at Baker and Grants Pass. Price, postpaid is .25 cents.

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GEOLOGICAL SOCIETY NEWS LETTER

Volume 12, No. 12 December 1946

SOCIETY ACTIVITIES

LECTURES: On the second and fourth Fridays of each month at the auditorium (third floor) of the Public Service Building, 920 S.W. 6th Ave., at 8:00 p.m. If the Announcements do not appear in NEWS-LETTER, see Oregonian or Oregon Journal previous to regular meeting date.

TRIPS: Watch for announcements of at least one trip each month. If you know of or can lead a trip yourself, call A.W.Hancock, SU 5285.

LUNCHEONS: Every Thursday noon at the House of Hicks restaurant, 425 S.W. Taylor St., between S.W. 4th and S.W. 5th Aves. Luncheon 85¢.

MEETING ANNOUNCEMENTS

Friday Dec.13 — Clifford Read, formerly seismologist for the Army Engineers, will discuss modern methods of seismic testing of subsurface structures. Such methods are now very popular with agencies that plot the structure beneath our damsites as well as with the oil companies.

Friday Dec.27 — No meeting will be held at this time because of the proximity of Christmas.

Friday Jan.10 — Randall Brown will speak on the subject "Terlingua - The most spectacular quicksilver district in the country." Mr. Brown studied this very interesting deposit during the war when with the U.S. Geological Survey. Colored slides will be shown.

Friday Jan.24 — Paul A. Schafer will speak on the "Broader aspects of the geology of Luzon, Philippine Islands." Mr. Schafer spent considerable time prior to the war in the gold camps of Luzon. During the war he and his family were detained for more than three years as guests of the Japanese government in San Tomas prison. Approximately 15 minutes of movies taken on a trip through a primitive area in northern Luzon will also be shown.

Friday & Saturday Jan.17-18 — The Oregon Academy of Science meetings will be held at Reed College. Members of the Geological Society interested in presenting papers at this meeting or in joining may do so by contacting the editor. Visitors will be welcome to attend the meetings. As usual, sectional luncheons are being arranged.

NEW MEMBERS

Mr. Thomas H. Hite,	2103 N.E. 8th Avenue, Portland 12,	WE 0713
Mr. and Mrs. Thomas Matthews,	State Dept. of Geology & Mineral Ind., 702 Woodlark Bldg., Portland 5,	BR 2276
Mr. T. Gail Dewitt,	Bates, Oregon.	
Kathleen Walters,	P.O. Box 852, Portland, Oregon.	
Mr. and Mrs. Paul A. Schafer,	1600 S.W. Davenport St., Portland,	BR 4054

MEMBERSHIP RENEWED

Mr. and Mrs. Stuart N. Twiss,	Rt. 6, Box 1226, Portland 1,	CH 3442

NOTE

The index for the year 1946 will be published with the January issue. It may be detached and bound with the 1946 volume.

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HISTORICAL METEOR SHOWERS COMPARED

Recent Display Ranks Well

by
J. Hugh Pruett
Pacific Regional Director
American Meteor Society

Glowing accounts of meteor showers of last century may easily bring to our minds pictures much more spectacular than the actual events. "Never did snowflakes fall faster," we sometimes read regarding the historical phenomenon of November 13, 1833. But estimates of the number seen per hour and the only 15-minute count on record weaken considerably the comparison to a raging blizzard.

Only a few weeks after the recent thrilling spectacle we already hear descriptions which surely are exaggerations of the activities of these busy little sky travelers. It was a sight of a lifetime, even without everestimates of its grandeur. A short statement by a European scientist concerning the Draconid shower of October 9, 1933, contains the amusing tendency both to overdo and to give an accurate account in the same sentence. He wrote, "The sky was literally filled with meteors from 19 hr. to 20 hr., two or three appearing at the same time." Remarkable sky-filling little flares!

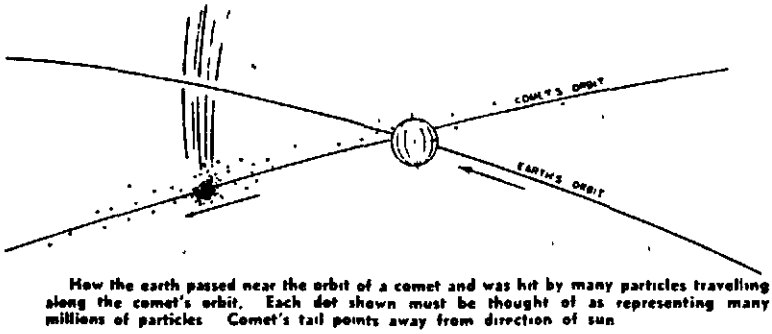
The writer was looking at a print taken from an old book which showed a highly exaggerated version of the shower of the Leonids in 1833 just following the October 9th shower when a stranger happened to see it and brought up the subject of the recent shower. He said that he was in Eastern Oregon far from city lights and had a fine view. When asked if he tried to count them, he seemed amazed at my stupidity and said, "Count them? Why you couldn't, they were coming fully as thick as in that picture that you have there." Because of such statements, it is easy to see that the accounts of some of the past showers are terribly exaggerated.

Terror, so prevalent during the phenomenon of early last century, found few victims recently. The Longview, Calif., police department reported that an excited woman telephoned, "The air is full of rockets and bombs! We are being attacked! What shall we do?"

At Palo Alto, Dr. A. O. Sanders was telephoning when suddenly the door flew open and in rushed three small boys. "They were breathless--evidently had been running for some time--and quivering with fright. They came stumbling over to me. 'What! What! Something awful's happening! Dr. Sanders! What is it!'"

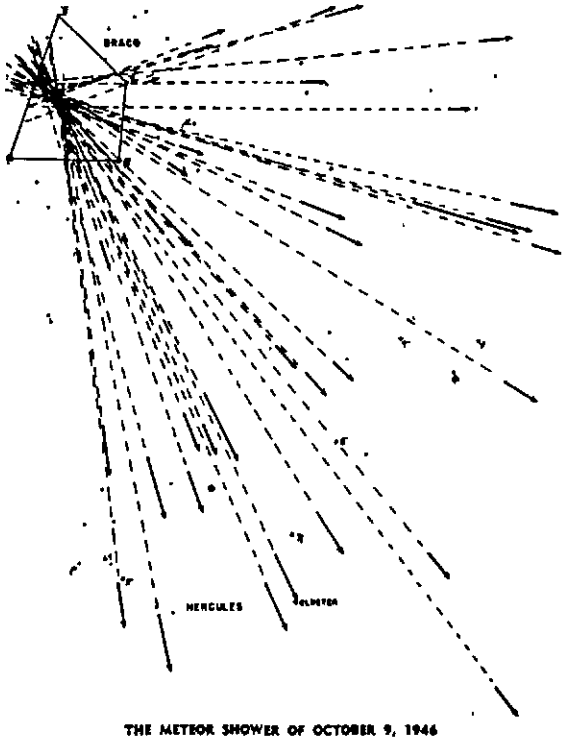
A Negro shoe-shiner, considerably worried, quoted for me certain Scripture texts which "proved decisive" that unusual meteoric displays always foretell great calamities. "It's never failed, and we sure got it comin' now!" But little four-year-old Davey Spriggs of Cottage Grove, Oreg., also religiously inclined, was not scared at all. In his gleeful excitement over the little sky gliders he stuttered, "D-d-does God know 'bout this?" Even calmer was a young woman in the same general locality who would hardly bother to look at the sky. "That's nothing. Shooting stars are dashing across the sky at all times, day and night."

A scholarly woman, who is a careful observer of natural phenomena, remarked that the recent meteors gave her the impression of being "so soft" and quite unlike the usual ones seen dashing across the sky. This expresses poetically the fact that the Draconids were relatively very slow-moving objects, entirely lacking the hard and cutting properties of the swifter "shooting stars."



How the earth passed near the orbit of a comet and was hit by many particles travelling along the comet's orbit. Each dot shown must be thought of as representing many millions of particles. Comet's tail points away from direction of sun

Fig. 1(above). The comet is about 30,000,000 miles from the earth in the diagram. The two orbits do not cross as the diagram would seem to indicate for the earth is 132,000 miles "toward the reader" from the comet's orbit. (Courtesy of the Griffith Observer)



THE METEOR SHOWER OF OCTOBER 9, 1946

Fig. 2. Plotting of meteors at Griffith Observatory. The solid arrows show the paths (against the background of stars) of meteors actually observed. When these paths are extended backward they all practically meet in the quadrilateral figure of stars forming the head of Draco, the Dragon. (Courtesy of the Griffith Observer)

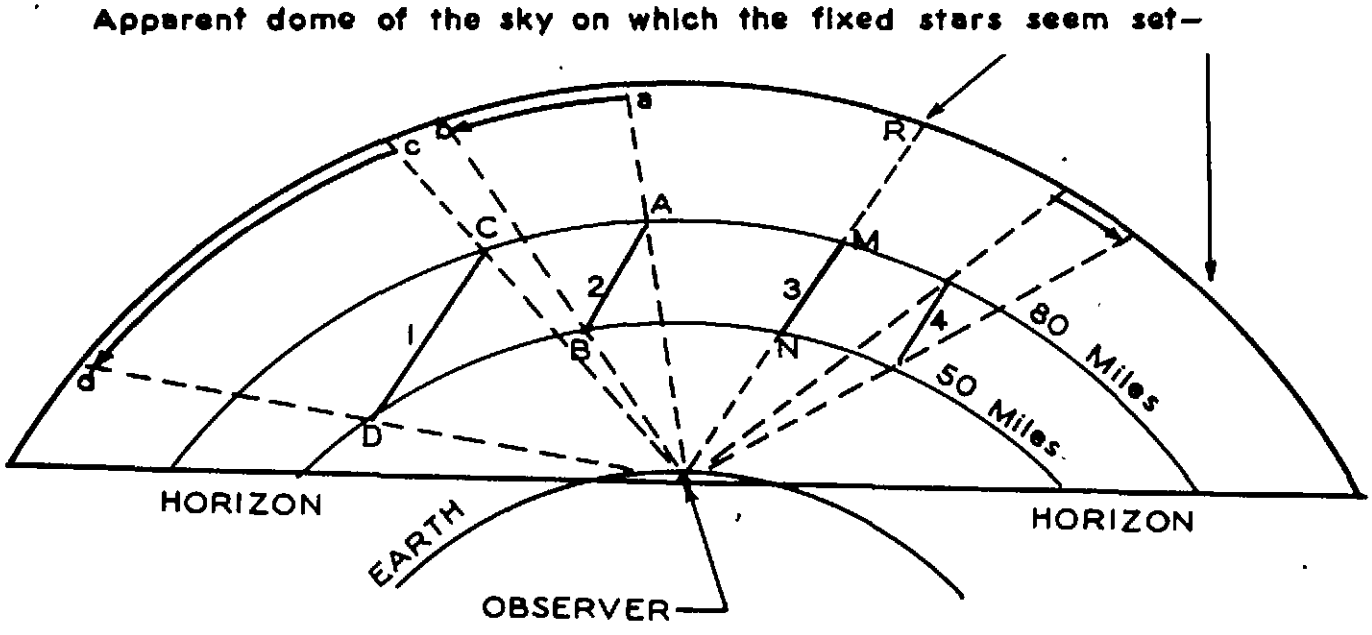


Fig. 3. Showing why meteors in a shower appear to radiate out from a narrow region of the sky. The meteors are actually moving in parallel lines. They glow when in the region between 80 and 50 miles above the earth, as in the paths CD, AB, etc. But we seem to see everything against the background of the sky. Therefore path CD seems to us to be along cd. A meteor traveling along MN is coming directly at the observer and seems to be a stationary flare for an instant at R. Many noticed such meteors during the recent shower. Point R is called the radiant. All meteors seem to move away from this point in the sky. The farther away from the radiant a meteor seems to start, the longer its apparent path on the sky. The radiant in the October display was high in the northwest in the head of Draco, the Dragon.

To many the question arises as to how "our" event compares with other meteoric showers which have appeared since A.D. 1800. There were spectacular displays of the Leonids in 1833, 1866 and 1867; of the Andromedids in 1872 and 1885; and (in Europe) of the Draconids in 1933. Let us examine the records carefully and attempt a reasonable comparison.

In preparing this article I have obtained much valuable material from Meteors, the book by Dr. Chas. P. Olivier, president of the American Meteor Society; also from the regular"Meteor Notes"in the monthly magazine Popular Astronomy,and from several other sources.

Before taking up the intensity of various meteoric demonstrations, let us explain the American Meteor Society's method of recording counts. The unit is the number of meteors seen by one person in an hour in a moonless sky of extreme clearness. Individuals differ greatly in keenness of vision and angular width of sky that may be watched. Group counting, unless skillfully handled, usually gives misleading results.

From very elaborate tests and calculations, H. A. Newton last century decided that 32 persons, arranged to watch every part of the sky, would be required to see all the meteors that appear in the entire visible hemisphere above us. And this large number would see only 7.40 times as many as would one person--not 32 times as many. Newton showed that two persons would see 1.95 times as many as one; four, 3.08 times; six, 3.69 times; eight, 4.15 times, etc. From this we see that six will see half the meteors in the entire sky. Dr. C. C. Wylie of the University of Iowa believes solo counts should be multiplied by somewhere from 7.0 to 10.0 for full-sky counts.

In order to compare various meteor showers, we must take into consideration also the condition of the sky. Dr. Olivier considers that in an excellent sky, 2.5 times as many meteors may be seen in a moonless sky as in one in which a full moon is present. Under the near-full moon conditions of October 9, 1946, a single average observer will thus have to multiply his hourly count by 7.4 x 2.5 for the visible meteors over the entire moonless sky.

Most publicized of all meteoric displays was the noted phenomenon of the morning of November 13, 1833. A few meteors streaked the sky during the evening of the 12th, but not until after midnight did the real "fireworks" develop. After 2:30 a.m. the greatest numbers of meteors were seen. From that time until daylight "the appearance of the heavens was awfully sublime," reported the Georgia Courier. "It would seem as if worlds upon worlds from the infinity of space were rushing like a whirlwind to our globe."

Prof. Denison Olmsted of Yale was quoted in Silliman's Journal as follows: "--from five o'clock--until nearly sunrise, the appearance of these was striking and splendid, beyond anything (the writer) has ever witnessed.--A succession of fireballs, resembling rockets,--of various sizes and degrees of splendor; some were mere points but others were larger and brighter than Jupiter or Venus."

As to the number of meteors visible, an intelligent observer at West Point, New York, reported that "I would not deem it extravagant to suppose 10,000 to a single hour." This was not a count but merely an estimate. Some others estimated as high as 35,000 per hour, but as in the first case it is uncertain whether this meant for a single observer or for the entire sky. At any rate this would be about 10 per second; magnificent but quite unlike the number of flakes in a snowstorm. Some "guesses" ranged as high as 200,000 per hour. It seems there is on record only one actual count. A Bostonian reported 650 from 5:45 to 6:00 a.m., or a rate of 2600 per hour. Some writers say they were appearing in greatest numbers at daybreak; others, that they diminished after 4:00 a.m.

By "invoking" the Metonic-cycle rule, which states that the phases of the moon recur on about the same days of the month every 19 years, we find that the shower of 1833 occurred almost exactly at the time of new moon. There was therefore no lunar interference in the sky all night. During our recent shower the moon lacked only one day of being full, so blotted out all the fainter "shooting stars." The Leonid observers of 1833 had every opportunity for high counts. It is regrettable that more are not actually on record.

Long before 1866, astronomers predicted there would be a good return of the Leonids in November of that year. They did come. On the night of November 13-14, when the moon lacked a little of the first-quarter phase--and set early--the display was fine. There are some fairly accurate counts on record. Two observers saw 2800 in a little over two hours, or an hourly rate of almost 1300. At Greenwich eight persons attempting to watch the entire sky saw 4860 from 1:00 to 2:00 a.m. One would have seen about 1200 according to Newton's rule.

There was a good return of the Leonids in 1867. Records from the University of Iowa show that eight counters looking in various directions got a total of 4748 from 3:00 to 4:00 a.m., the time of the maximum. This would be almost 1150 "solo." This seems about as good as in 1866. Due to the fact that the full moon interfered, perhaps it was actually better.

The breaking up of Biela's comet seems to have furnished the material for the celestial blizzards of November 27 of both 1872 and 1885. The meteors are variously called Bielids, Andromedes and Andromedids. The event of 1872 occurred early in the evening in Europe, and was over by nightfall in America. Since the lunar phase was four days past last quarter, there was no moon in the evening sky. One lone counter in England recorded 10,579 meteors in six hours, or almost 1800 per hour. Another single-hour solo count amounted to 3100. In Italy, a group of four in six and one-half hours saw 33,400, or 5150 per hour. This would be 1700 for one, fine agreement with the first count above.

In 1882, another early evening shower, with the moon five days beyond full (so it interfered little during the early evening) brought a group count that would amount to 5160 solo per hour. H.A.Newton himself said that had the entire sky been watched, 75,000 in an hour, or about 10,000 for one observer would have been seen. In both 1872 and 1885, counts of several hours would give a lower hourly rate than the hour of actual maximum, had it been counted alone.

The Draconid showers of October 9th of both 1933 and 1946 were the only displays in our century to attract wide-spread attention. Of the earlier of these, Mulders in Holland estimated that at maximum 500 were visible every minute. Prof. Pio Emanuelli of Rome made this 350. Later definite reports seem to indicate these estimates were for the entire sky. The moon was six days past full so did not interfere until around rising time. Even then it was nothing like our near-full moon of 1946.

But all estimates and guesses seem to give way to quite substantial facts in the observations of M. Felix De Roy of Antwerp, Belgium, a member of the Meteor Commission of the International Astronomical Union, and his two sons, Georges and Jean, all well versed in scientific methods. This gives us a chance to compare the displays of 1933 and 1946. Georges counted solo for five-minute periods continuously from 19 hours,10 minutes (7:10 p.m.) until 19 hours,45 minutes. After a quarter hour of rest on the part of all, Jean took over at 20 hours and counted for five-minute intervals (with two breaks) until 21 hours. M. De Roy said the moonlight became troublesome at 21 hours.

We have a similar record of family teamwork 13 years later at Eugene, Oregon. Ross McClanahan and his 15-year-old daughter, Alda, on October 9, 1946, carried on continuous five-minute counts from 6:45 to 8:15 p.m.,P.S.T. Alda did all the counting, while her father held the watch, called the end of each period, and did the recording. They knew nothing at the time of counts being obtained by veteran American Meteor Society members in the same locality. This is by far the longest continuous count received by me to date. Everything about it gives the impression of honesty and ability.

The data for the central sections of the counts of both families are listed in the table below and side by side for easy comparison. Interpolations are made in the five-minute breaks (designated by "int.") in the De Roy record. These are doubtless close to the counts, had they been made.

De Roys in 1933			McClanahans in 1946		
Intervals		Meteors	Intervals		Meteors
7:25-30	G.C.T.	100	7:05-10	P.S.T.	68
30-35		140	10-15		103
35-40		160	15-20		124
40-45		167	20-25		145
45-50		200 (int.)	25-30		120
50-55		240 (int.)	30-35		161
55-60		280 (int.)	35-40		202
8:00-05		319	40-45		239
05-10		390 (int.)	45-50		362
10-15	Maximum	456	50-55	Maximum	367
15-20		340	55-60		344
20-25		250 (int.)	8:00-05		321
25-30		157	05-10		193
30-35		139	10-15		128
			"froze out"		

Other five-minute counts made at the time of maximum in 1946 by Mrs. Harry Thompson, Miss Harryette Thompson, and Mr. and Mrs. J.H.Pruett, all at Eugene, Oregon, and Mrs. T.G.Youngs at Twenty Nine Palms, California, were respectively 317, "even 400," 342, 272, and 333. These check well with the McClanahan count when we consider that eyes differ. The six average nearly 340, or 4080 for one observer per hour at the time of maximum. Of course this many were not seen in any one hour since they were coming at a slower rate during most of the time. But from 7:35 to 8:35, October 9th, 1933, the De Roys (together with reasonable interpolations) obtained in single counts, 3098; and the McClanahans from 7:15 to 8:15, October 9th, 1946, counted 2706.

How did the displays of 1933 and 1946 compare? Had the moon been as far from full as on the same date in 1933, there seems little doubt that as many meteors--perhaps considerably more--would have been seen during the corresponding maximum hour. Unfounded estimates and "statements" both run immensely higher than definite counts "pinned down" to a counter with a name.

Using Newton's method, the visible number over the entire sky during the hour including maximum (using the McClanahan data) was 2706 x 7.4, or almost exactly 20,000. (Most "old time" reports are doubtless estimates for the entire sky.) Then since the moon was practically full on October 9th, we may again multiply by Olivier's factor of 2.5 and obtain the really large number of 50,000 meteors that would have been visible in the entire sky (which was extremely clear at Eugene) during the maximum hour had the moon been absent, as it was during the historical shower of November 13, 1833.

In the table below I have selected the counts I consider the most reliable in the various showers in order that they may be compared.

Year	Solo hourly count rate	Entire sky rate	Moon factor	Total for moonless sky
1833 New moon	2600	19,000 x	1.0	19,000
1866 Two days before first quarter	1200	8,900	1.1	9,800
1867 Two days past full	1150	8,500	2.3	19,600
1872 No moon in early evening	1700 1800	12,500 13,300	1.0 1.0	12,500 13,300
1885 Five days past full	5160	38,000	1.5	57,000
1933 Six days past full	3098	23,000	1.3	30,000
1946 One day before full	2706	20,000	2.5	50,000

Was our recent display so very inferior to the others? It certainly was more profuse than those of 1866, 1867 and 1872. The phenomenon of 1885 appears to have been better. It was likely even better than it appears in the table for the maximum hour is likely masked in the long counts used. The shower of 1833 is really hard to judge, but "by reputation" it will likely long be considered the finest on record.

EXTRA DATA ON 1946 DRACONIDS

At Eugene, the hourly rate at various hours were:
(For one observer)

Near 7:00 p.m.	588 meteors	
7:30	1212	
8:00	3996	
9:00	204	(These are in most cases averages of five-minute counts of four experienced observers, x 12 for hourly rates.)
9:45	24	
10:30	12	

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LUNCHEON MEETING - THURSDAY, OCTOBER 17, 1946

A polished specimen of meteorite from Arizona showing Widmanstaetten figures was displayed to the company by Dr. Arthur Jones, who had received it some years ago from his brother. President Allen remarked, "I'm glad to see something that is definitely a meteorite. All sorts of things have been coming into our office since the meteor shower." ....Rudolph Erickson was a guest of Mr. Stone.. Mrs. Viola Oberson characterized the Museum Foundation's exhibit at the Meier & Frank store as a marvelous piece of advertising, in which is included editorials and advertisements in the newspapers. The displays will give the public an idea of what the museum could look like.....Pictures of the annual picnic were shown by Orrin E. Stanley.....

Miriam Shepard

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LUNCHEON MEETING - OCTOBER 24, 1946

The largest gathering since the teachers returned to the classrooms was augmented by a number of visitors. Dr. Harold Davis, orthopaedic surgeon, was a guest of Dr. Arthur Jones, and it was suggested that palaeontology would be a fit subject for one with his interest in bones...Mr. Stone had brought his son Bob to the meeting.....Mr. Erickson was introduced by President Allen in a new status--that of member....An entomologist and author, Mrs. Elizabeth Ellsworth Bruhn, was introduced by Mrs. Viola Oberson....A new member of the staff of the department of geology and mineral industries, Tom Matthews, was introduced by Mr. F. W. Libbey. He is occupying the position held by Dr. Harrison before his entry into the armed services, and is a graduate of the University of Washington ....Mr. E. N. Bates, who told an anecdote of finding an ancient recording voltmeter, introduced Mrs. Harland as his guest....Carl Richards, who with Mrs. Richards was in town from Salem, described a field trip of last April to the Luckiamute district. At the Salem Geology Club's September meeting the program chairman took notice of vacations, and such wide reports were received as trips to mines, to the John Day country, and to the Boise convention. James F. Bell was a recent speaker before the Salem group. In addition to snapshots of the annual picnic, Mr. Richards displayed a picture showing a meteor streaking through the constellation Cassiopeia during the recent shower....A chunk of asbestos picked up by Mr. Erickson in the John Day region came from a spot where a miner had apparently worked several years before....Two Oregon specimens which were given to Dr. Arthur Jones were passed around the table next. One was an obsidian, and the other, from the Medford area, contained fossil forms which Dr. Jones suggested were probably skeletal remnants.....Dr. Baldwin passed around a specimen of brecciated and recemented quartzite of Ordovician age and a Devonian dolomite containing small corals called "Spaghetti rock," both from Central Idaho.

Miriam Shepard

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LUNCHEON MEETING - OCTOBER 31, 1946

A. D. Vance provided a "shower" of zeolites from the Woodland and Kalama area which were surplus to his collection....Dr. Courtland L. Booth asked if anyone in the organization is interested in thumbnail specimens or micromounts..... The discussion brought from Dr. Arthur C. Jones the plaint that the society is deteriorating in the number of specimens being brought to the luncheons....Robert Kelly was introduced by John W. Robinson as a new addition to the U. S. Geological Survey staff. He is from the University of Illinois....Vice-President Raymond L. Baldwin, who presided at the table, called the group's attention to the Ore-Bin and its article by our recent speaker, R. E. Stewart, on "Fossils Called Bugs"..

Miriam Shepard

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