GEOLOGICAL SOCIETY NEWS LETTER

Volume 14, 1948

1948 INDEX
to
GEOLOGICAL NEWS-LETTER
Volume 14
Compiled by Miriam Shepard

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GEOLOGICAL NEWS LETTER

OFFICIAL PUBLICATION OF THE

VOL. 14 NO. 1 PORTLAND, OREGON January 1948

GEOLOGICAL NEWS-LETTER
Official Publication of the
Geological Society of the Oregon Country
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THE GEOLOGICAL NEWS - LETTER
Official publication of the
GEOLOGICAL SOCIETY OF THE OREGON COUNTRY

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MEMBERSHIP APPLICATION
GEOLOGICAL SOCIETY OF THE OREGON COUNTRY

Qualifications and dues:

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

Date . . . . . .

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

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

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

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

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

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

Sponsored by _____
(member)

_____
(signature)

SOCIETY ACTIVITIES

LECTURES: On the second and fourth THURSDAYS of each month in Public Library Hall, S. W. 10th Avenue and Yamhill Street. Watch the Oregonian and Oregon Journal for further announcements.

TRIPS: An average of one field trip is held each month. Suggestions for trips should be given to Norris B. Stone, BR 2683 or OS 6531. No trip is planned for January.

LUNCHEONS: Every Thursday noon at the Chamber of Commerce, 824 S. W. 5th Avenue between Yamhill and Taylor Streets. Luncheon 75¢

MEETING ANNOUNCEMENTS

Thursday Jan. 8 — "Founders of Geology", by Dr. Warren D. Smith, formerly head of the Department of Geology and Geography, University of Oregon. Dr. Smith will trace the growth of geological learning beginning with the ancients and touching upon concepts in the Middle Ages. He will trace the very considerable growth of the science by the Germans and the English, and contributions by early American geologists will be mentioned. Emphasis will be given to the principal steps in the progressive growth of our geological knowledge.

Thursday Jan. 22 — "Color Studies in National Parks", by Mr. Bond. Moving pictures in color taken in National Parks and National Monuments will be shown and described by a naturalist with a wide experience in nature studies.

FIELD TRIP ANNOUNCEMENTS

There will be no field trip in January. In February, at a date to be announced later, there will be a Basement Trip (not to be confused with a Foundations Trip) when, according to Chairman Norris B. Stone, the rock collections of a number of the members will be visited. Also watch for the announcement of a continuation of the Portland Foundations trip held in November.

NEW MEMBER

Miss Marion Glaeser	3300 S. W. Heather Lane, Portland 1, Oregon	BE 3955
(mail address)	207 Medical Arts Bldg., Portland 5, Oregon	BR 1811

CHANGE OF ADDRESS

Dr. T. P. Thayer — U. S. Geological Survey, Washington 25, D. C.

CALL FOR NEWS-LETTER ISSUES

Business Manager Raymond L. Baldwin has reported that there is a shortage of issues Nos. 4 and 6 of Volume 13 of the GEOLOGICAL NEWS-LETTER for 1947. Members having extra copies of these issues are asked to deliver them to him.

CARL RICHARDS ELECTED OFFICER

At the annual convention of the Astronomical League held in Philadelphia last summer, Carl P. Richards was elected to the National Board of Directors, with the office of National Treasurer. The Astronomical League is a federation of the astronomical societies throughout the United States. Mr. and Mrs. Richards attended the preceeding annual convention at Cranbrook near Detroit, Michigan, in 1946 as delegates of the astronomical societies in Portland.

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AT LAST A SCIENCE MUSEUM FOR OREGON

By
John Ripley Forbes
Director Oregon Museum Foundation

As most members of the Geological Society of the Oregon Country well know we have many large and valuable collections just waiting for a home. Perhaps one of the best known is that splendid collection of Mr. A. W. Hancock which the Smithsonian Institution has been interested in getting. Mr. Hancock, vitally interested in seeing Oregon have its own museum, has already given his collection to the Oregon Museum Foundation at such time as it has its own building. Dr. Courtland L. Booth, Stanley Jewett, and many others in the city have valuable and beautiful collections in the field of natural science just waiting for a suitable home. In addition to the many private collections available, the City of Portland has a large collection, which at one time was part of the old Municipal Museum, at present stored in several large basement rooms of various city buildings. This collection is most extensive, covering a wide range and containing much natural science material. Perhaps the newest collection available is the collection of large Western Mammals which the William T. Hornaday Memorial Foundation of New York City presented to the Oregon Museum Foundation. This splendid collection from the American Museum of Natural History consists of such large animals as the elk, pronghorned antelope, mountain goat and sheep, and were mounted by some of the nation's best taxidermists and should make a truly first class Hall of Western Mammals for the new museum. As far as having adequate museum material available we are now ready for our new museum building.

The need for prompt action cannot be too strongly stressed if we are to keep many of the fine collections now available for a museum within our own state. During the past ten years we have already lost some very fine collections because we did not have a museum and the owners have sold or given them to other institutions outside the state. Unless we erect a museum within the next year we stand to lose other fine collections which are now available to us. Some museum material now in storage, especially some from that of the old Municipal Museum, is in very bad condition and so damaged that we can no longer save it. It is of vital importance that we take this material out of storage as soon as possible and put it in proper condition before additional damage results. Very shortly the Foundation will remove from storage all museum material which is in need of cleaning, repair, and identification, and put this material in condition so it can be used for exhibition or study purposes once the new museum building is ready.

Obtaining a museum building simply as a place to house exhibits of valuable and rare collections is a very poor excuse for getting a museum and perhaps too much stress has been placed upon this fact in the past. If we are to have a truly first class museum it must be a LIVE MUSEUM, it must appeal to the masses, it must be a museum which is used by the public, which has many thousands of children not only coming with their teachers, but far more important coming on their own, because within the museum is a PROGRAM which interests and appeals to them. Children are our best hope for the future in this troubled world and any museum to be truly successful must in its program attract and interest our youngsters. The day when a museum was simply a storage place for collections, a curiosity shop, a cold scientific institution giving out with a morgue-like atmosphere is, thank heavens, over. Today the modern museum is a bright and cheery place, it has color and charm and the sound of happy children enjoying themselves as they play games and take part in exciting activities is now encouraged and welcome, adults can take part in evening activities, clubs and hobby groups meet and use museum facilities. As a result of this beneficial change scientific work goes forward at

an even better pace and more public support is available for research. Yes, the museum has come a long way and is today an accepted part of our daily lives much like the school and church. No community should be without proper museum facilities any more than it could do away with the school or church.

The Oregon Museum Foundation has during the past year taken steps to bring about the development of a first class museum before the year 1948 is over. The Foundation has increased its board of trustees in size and added some of our finest and most influential people to its board. It has obtained the services of an experienced museum organizer on a full time basis to organize a drive for funds for the museum building and to lecture to most of the key organizations in the city and enlist their support for the coming drive. The Foundation has also made plans to have a new museum building designed and will erect the first unit of this building in the fall of 1948 if the $300,000.00 drive is a success. Plans for a temporary museum have been held up due to the difficulty of finding an adequate place, but work will soon go forward in Failing School space set aside for the museum in the identification and repair of museum material now in storage. A drive for $15,000.00 is now under way among our trustees, friends, and organizations such as the Geological Society of the Oregon Country, and those who have a very special interest in the museum. This money will be used to finance the promotion drive for the next year and it is most important that this fund be raised within the next month.

I have been asked to stress in this article how members of the Geological Society can be of active help in the big job ahead. We have many jobs which must be done and I think every member of the Society can do his share to help make the new museum a reality.

Finance: Perhaps the most important task ahead is providing adequate funds not only for the promotion drive but in the spring for a new building. One member of your society, a man of modest means and not by any means wealthy, has already said he will contribute $1,000.00 personally toward the building drive as his contribution toward our $300,000.00 goal. In order to raise this amount of money we have organized 6 teams, Team A to consist of four individuals or firms who will contribute $25,000 to the building drive each, or a total of $100,000; Team B to consist of ten individuals or firms who will contribute $10,000.00 each to the drive; Team C to consist of 100 individuals or firms who will contribute $1,000.00 to the drive; Team D to consist of 100 individuals or firms who will contribute $500.00 toward the building drive; Team E to consist of 100 individuals or firms who will give $100.00 to the drive and Team F to consist of individuals who will contribute amounts from $5, $10, $25. Children will also be given an opportunity to do their share with 25¢ contributions. If each of us does his share we can raise the necessary funds. If most members of the Geological Society will support your organization's effort to contribute $750.00 toward the Promotion Fund drive, you will be making a most important contribution toward our efforts to get a museum. I might also add that another member of your society has already placed $5,000.00 in the building fund and is to date our largest contributor.

Collections: On the matter of collections members of your organization can give us much help. As soon as we get out rooms in the Failing School ready we shall want volunteers to work on various evenings and perhaps on weekends helping us identify and organize much of the natural science material, especially that in the geological section. We shall also want the help of some members who are professional or first class amateur carpenters for we are going to have to construct temporary cabinets to house the various collections. I would appreciate it if any members who feel they can assist us in the various jobs would call our office in the Portland Hotel, ATwater 1171 - Ext. 741.

We would also like all possible information regarding collections of members of the Society. If you know about collections in the state which we may not be aware of, please give us full information about them. I think it would be a splendid idea if your society would appoint a Collection Committee which could work on its own to locate ideal museum exhibit material and gather as much information as possible on what is available not only inside the society but throughout the state. At present we have almost more material than we can take care of, but we should know about all suitable museum exhibit material as we are going to grow rapidly and will be able to expand.

I know all members of the society will be delighted to know that the Oregon Museum Foundation has decided to call the new museum the Oregon Museum of Science and Industry and we shall place our greatest emphasis upon the natural sciences. We shall also stress with considerable emphasis the importance of conservation of our wild life and natural resources.

I shall look forward to the cooperation and assistance of all the members of your society in the big job ahead.

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DICK ANDERSON LEAVES

It is with great regret that the News Letter announces that our fellow member, Richard J. Anderson, has resigned his position as managing engineer of the Raw Materials Survey and has accepted an important job with Battelle Memorial Institute, Columbus, Ohio. Battelle is an internationally known research institution and has been engaged principally on research of mineral industry problems. Mr. Anderson will assume his new duties at Battelle on January 1 next. As yet Mr. Anderson's successor on the Raw Materials Survey has not been appointed. Mr. Hollis Dole, geologist with the State Department of Geology and Mineral Industries, will take Anderson's place in teaching the course in geology of the Extension Course of the System of Higher Education.

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LUNCHEON MEETING - October 23, 1947

Twenty-three members and guests gathered for the luncheon on October 23. Among those present were Carl Richards from the Salem society. Mr. E. N. Bates introduced his daughter, Mrs. Stydoff, from San Francisco. Mrs. Viola Oberson read a letter she had received on publicity suggestions for the Audubon lectures, and asked for other ideas from the group. The specimens passed around included a specimen of fossil fern from near Antelope by H. Bruce Schminky; colored agate by Ada Henley; and quartz from Sun Valley by Mrs. Florence Sunderland. Kenneth Phillips told an exciting story of his experience with lightning this fall at Mt. Hood, which brought to mind other encounters which others had had on various occasions.

Grace Poppleton

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WRITE

AMERICAN CANNING INC

FROM PRESS RELEASE ON

CHEMICO PROCESS

THE PORTLAND FOUNDATIONS TRIP
November 16, 1947

By

H. Bruce Schminky

The purpose of the Portland Foundations trip was to introduce members of the group to the various geologic formations described in the "Geologic History of the Portland Area," by Ray C. Treasher, and to show their position in relation to each other. The route picked for the trip included exposures of all these formations and it was hoped that they could all be visited in one afternoon.

Portland's basement rocks are the Columbia River lavas, which were erupted during Miocene time. These lavas are the main core of the Tuality Mountains (the so-called Portland Hills) and are exposed along most of the roads and streets which follow along the east slopes or cut into these hills from the Willamette side. They dip under all the other formations and are not exposed again until the Cascade Mountains are reached east of the Sandy River. Mr. F. W. Libbey supplied the leader of the trip with logs of various wells drilled in this area. When these logs were platted on a profile of the land surface along Burnside Street and its approximated extensions, it made it possible to follow the rock surface from the east slope of the Tuality Mountains to the Ladd well, which was drilled near N. E. 39th Avenue and N. E. Glisan Street. This proved to be a downward continuation of the face of these hills. It would be of great interest to have some more deep wells to the east of the Ladd well to carry this rock surface to the Cascade Mountains, so as to show where and how the upswing begins.

Overlying the Columbia River lavas is the Troutdale formation. At its type location on the Sandy River east of Troutdale, the silts, sands and gravels in this formation stand in steep bluffs that seem to resist erosion. The first stop of the caravan was on Front Avenue just north of the Burnside bridge. From this point a vertical gravel bluff could be seen on the east bank of the Willamette River. Treasher has not noted this exposure, but it certainly looks like the Troutdale. The well logs do not help much in developing the top of the Troutdale below the surface of the ground. Arthur Piper tried to establish this in his studies of these logs for his report on "The Ground-Water Resources of the Willamette Valley, Oregon." When these points were platted on the profile, along with Rocky Butte, Mt. Tabor, and other hills which Treasher classed as Troutdale, it gives the surface a very sawtooth appearance. If this is the true outline of the Troutdale surface, it shows very much erosion before the Portland delta gravels buried it.

The next stop was at the entrance to Washington Park on West Burnside Street. Here an exposure of very vesicular lava was examined. The leader's face is red as he writes this for he left the impression that this was Columbia River lava when it is really Boring lava which had come down this canyon as an intra canyon flow. These lavas are characterized by Treasher by their large, and usually interconnected, vesicules. Our next stop was at an old rock quarry where it was possible to see the eastward dip of the lava flows. At an elevation of about 900 feet we found a reversal of dip in the exposed rock. It was a surprise to the leader to see how this point fitted for a projection of this rock to the rock surface found in a well drilled in the west slope of the hills by Aaron Frank. The capping Boring lavas, which are set as Pliocene to Pleistocene in age, were exposed below and above the tunnel on Barnes Road.

From the point where we had noted that the lavas had taken a westward dip, and continuing around Skyline Road to Cornell Road, cuts in heavy clay were noted.

Somehow, this clay cover, which was 400 feet deep over the rock in the Aaron Frank well, is the question mark in the geology of the west slope of our Tuality Mountains. It is thought that it may have been wind-borne from the Columbia River side at a time when the Portland delta gravels were at their maximum elevation. It is not a product of residual weathering, for this clay contains mica flakes which are not found in clays which are definitely the product of residual weathering above many lava exposures in this area.

Descending Cornell Road, we were in Columbia River lavas until we came to the east slope in the Willamette Heights-Westover area. Here we found a deposit of Troutdale gravels. In these gravels we found the traditional quartzite pebbles, which are one of the characteristics of the Troutdale.

At this time darkness was catching up with the caravan, so it was voted to hold the east side portion of the trip until a future date.

The leader of the trip wishes to thank Fay W. Libbey of the State Department of Geology and Mineral Industries for furnishing copies of well logs for use on the trip.

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LUNCHEON MEETINGS

November 6, 1947

Leo Simon exhibited a piece of vesicular lava from the Three Sisters area which had been given to him with the suggestion that certain depressions in the rock might have been made by a deer's foot when the lava was soft. In the discussion that followed, it was the consensus of opinion that the depressions could not be those of an animal....A.D.Vance passed around a beach specimen which seemed to be a conglomerate of casts of wood....Dr. Anderson announced that the science class at Riverdale school would like to purchase lapidary equipment....A specimen of quartz of unknown origin was shown by Miss Margaret Hughes....Dr. Arthur Jones passed around two brachiopods, one a typical lampshell form from Vancouver Island, and the other a specimen from the Red Desert country of southern California, identified as being Cretaceous in age....George V. Elder exhibited a book entitled "Fundamentals of Geology."...Mrs. E.M.Barr showed a picture by Carl Richards of glacial grooves in rock on the top of Mt. Tolmie in Victoria, B.C....Miss Ada Henley passed around a copy of Science News Letter containing an article on synthetic quartz crystals....Dr. Courtland L. Booth discussed some of the features of the recent Oregon Museum-Audubon Society lecture, and also displayed a specimen of slag.

Mrs. E. M. Barr

* * *

November 13, 1947

Notes from the luncheon meeting of November 13, 1947, are late because your reporter mislaid his scratch notes and didn't find them until Dec. 18th, although he hunted intermittently for at least three weeks. Oh, well, that's what comes from owning two suits of clothes....Twenty-seven members and visitors were on hand when Dr. Jones arrived. (At this late date, I'm guessing that Dr. Jones came after Dr. Booth.) Among the visitors were John Ripley Forbes, who will become a member. He is here to help the Museum Foundation get its drive for a museum into high gear, and Norbert Leupold, President of the Audubon Society and recently elected director of the Museum Foundation. Miss Margaret Steere brought June Roberts, Dorothy Edgerton, and Lillian F. Owen as her guests, which materially improved the looks of the State Department representation. Mr. Forbes and Mr. Leupold spoke on the subject closest to their hearts as did J.C.Stevens. He never misses a chance to put in a word for the museum....Dr. Booth passed around a section of a core from the Junction Shaft, Bisbee, Arizona. Mrs. Barr brought a specimen from the limestone quarry north of Scotts Mills. Florence Sunderland had some interesting artifacts, a Yuma point and a Yuma knife from Nebraska. The knife was made from petrified wood and was found

RESEARCH METHODS IN LABORATORY, FIELD AND FACTORY*

By
P. D. Krynine, Chief, Division of Mineralogy

The object of scientific research, whether it be pure or applied, is to arrive at the truth, which generally means solving certain specific problems. Depending upon the complexity of the problem and the number of variables involved, such solutions may be produced by trial and error (so-called "hit or miss" methods) or by an orderly reasoning and stating of the problem beforehand. Trial and error methods of solution under favorable conditions can usually be developed rapidly in simple cases, but they frequently fail when tried on complex problems, resulting in a waste of time and, if the problem is of an applied nature, of money also.

There is a certain basic difference in the reasoning that goes on in the head of a manufacturing technologist as compared with that of a geologist, a physician, or a detective. The industrial technologist wants to produce something and, if he can solve his manufacturing problem, frequently does not care as to how or why the method works and what were the variables concerned. The other types of professional men, however, must discover at all costs how their problems are to be solved theoretically since in their future work they will have to try to produce similar discoveries on the basis of analogies. However, even the manufacturing technologist could profit greatly by a somewhat more fundamental method of deduction and in doing so he can usually improve his performance over the "hit or miss" method commonly used.

Any kind of production problem, be it technological or natural (such as the mining of coal, the discovery of an oil pool, or the formation of a rock), is usually a complicated operation involving the interplay of many variables under the conditions of a complex, so-called "open" system. In the laboratory, on the other hand, the research physicist or chemist usually operates with rather simple, so-called "closed" systems under controlled conditions, the main objective being to find out how a limited physical or chemical procedure takes place. Unfortunately, there is a frequent tendency to apply these laboratory results indiscriminately toward the solution of large-scale manufacturing problems or the explanation of complicated natural phenomena. Such a transposition may be completely unsuccessful. This is well known to the medical men who realize that a drug which will kill a germ in a test tube (in vitro) may be ineffectual in the human body (in vivo).

Since the Mineral Sciences and Arts concern themselves either with the interpretation of large-scale natural phenomena (geology, mineralogy, petrography, geography, meteorology, mineral economics) or with the large-scale industrial utilization of raw materials (ceramics, fuel technology, metallurgy, mining, petroleum and natural gas production) under conditions which are generally much more complex than those obtained under test tube conditions, it may be worthwhile to make analysis of the major variables that operate under such large scale conditions and contrast the operation of such natural or artificial complex open systems with the operation of the more simple experimental closed systems.

Any kind of process, be it natural or artificial, simple or complex, starts with some kind of raw material which is modified through the operation of certain physical and chemical factors. These factors are applied at a certain level of energy for a certain period of time. Each process has a beginning, a middle, and an end; and the reactions that take place are different at various intervals of its life span. However, in complex systems, such as the manufacturing of an involved piece of machinery or any geological phenomenon, these four major variables

*Mineral Industries, Pennsylvania State College, issue of November 1947.

are complicated by the addition of two others. First, in such an open system (locus of activity, environment, or factory) there is a series of processes that compete against each other, and the net result of such a complicated environmental interplay of forces may be the formation of an end product that does not bear even the faintest resemblance to what could be expected from each process, if taken individually. Second, a series of outside conditions or a "determining background" (geological, economic, social, or technological) which may be difficult to evaluate quantitatively, and the existence of which may not even be suspected by the laboratory worker, may influence an entire series of open systems at the same time and guide their activities toward one common direction. For example, at present, one of the reasons why the production of coal in Europe is low is that in practically every country the miners are not getting enough to eat. This is a fact which cuts impartially "across the board" in a very negative way, regardless of the differences in production techniques in the different mines.

(To be concluded)

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WATER-SUPPLY PAPERS

WSP-866C: Geology of dam sites on the upper tributaries of the Columbia River in Idaho and Montana, part 3, Miscellaneous dam sites on the Flathead River upstream from Columbia Falls, Mont., by C. E. Erdmann, 1947. Price 50 cents.

This report describes the limiting geologic conditions at a series of seven proposed dam sites on the main Flathead River upstream from the town of Columbia Falls. It was prepared under a comprehensive program of surveys of western rivers for power-classification purposes, made with funds furnished by the Public Works Administration. Original investigations were confined to surface exposures, but at some sites supplementary electrical resistivity investigations were made to determine depth to bedrock. Drill-hole information obtained subsequently by the Bureau of Reclamation and Corps of Engineers, United States Army, was also used. The first part of the report deals with factors common to all sites, giving a brief account of the river and the stratigraphy and structure of the rocks over which it flows; detailed descriptions of the dam sites follow.

WSP-1020: Water levels and artesian pressure in observation wells in the United States in 1944, part 5, Northwestern States, by A. N. Sayre and others. 1947. Price 40 cents.

This report gives records of ground-water level or artesian pressure in observation wells in Colorado, Idaho, Montana, Oregon, Utah, Washington, and Wyoming. It was prepared in cooperation with those States and other agencies.

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LUNCHEON NOTES - November 20, 1947

Pres. Arthur C. Jones called attention to an article in the Scientific Monthly about the Tenino mounds and to a clipping about other mounds in northern California. This brought on a general discussion on the probable origin of the various types of mounds by Dr. Jones, Orrin E. Stanley, Dr. Courtland L. Booth, Leo Simon, and A. D. Vance. Some were convinced that the theory that the mounds had been made by gophers was fantastic and others felt that it might have some grounds for acceptance. Since only six people spoke on the subject there were only six theories advanced....Dr. J.C. Stevens mentioned articles in the Scientific Monthly about Paricutin and in the National Geographic Magazine about the aurora borealis and Antarctica....G.V. Elder had some rocks from Mt. Hebo and Miss Ada Henley had a specimen from Taxco, Mexico. ...Dr. Jones spoke about Bruce Schminky's illness and complimented him upon his leadership of the trip on November 16....Clarence Phillips told about "explorations" in the "canyon" of Wall Street, New York, when called upon to account for his absence.

O. E. Stanley

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Executive Board of the Society

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Orrin E. Stanley	Vice - president,	2601 S.E. 49th Avenue,	6	TA 1250
Mrs. May Dale	Secretary,	1728 S.W.Market Street,	1	
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Date . . . . . .

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

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

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

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

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

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

Sponsored by _____
(member)

_____
(signature)

Society Activities

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

TRIPS: An average of one field trip is held each month. Suggestions for trips should be given to Norris B. Stone, BR 2683 or OS 6531.

LUNCHEONS: Every Thursday noon at the Chamber of Commerce, 824 S. W. 5th Avenue between Yamhill and Taylor Streets. Luncheon 75¢.

MEETING ANNOUNCEMENTS

Thursday Feb. 12 — "Geologic History of the McKenzie River Country," by Paul Howell, geologist, Corps of Engineers, Portland.

Thursday Feb. 26 — Annual business meeting. Committee Chairman reports. Probably a motion picture.

Saturday March 13 — Mark this date on your engagement pad! The annual banquet will be held Saturday evening, March 13. Mrs. Adolph Weinzirl is chairman of the banquet committee. Please telephone suggestions for the dinner or the program to her at GA 5706. Be prepared to do your part to make this event a memorable one.

FIELD TRIP ANNOUNCEMENTS

Sunday Feb.15 — Portland Foundations Trip, Part II. Meet Sunday at 1:30 o'clock P.M. at S. W. Front and Yamhill Streets. H. Bruce Schminky will lead the Society to the east side to complete the survey begun November 16.

The purpose of the trip will be to compare the various types of rock formations which make up the local area. Bring your copy of Treasher's Geology of the Portland Area or U.S.G.S. quadrangle for Portland.

NEW MEMBER

John Ripley Forbes, c/o Oregon Museum Foundation, Portland Hotel, Portland, Oregon.

CHANGE OF ADDRESS

Margaret L. Steere, 2334 S. E. Main Street, Portland 15, Oregon. BR 2276

REPORT OF NOMINATING COMMITTEE

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Vice-President . . .	Leo F. Simon
Secretary	Miriam Shepard
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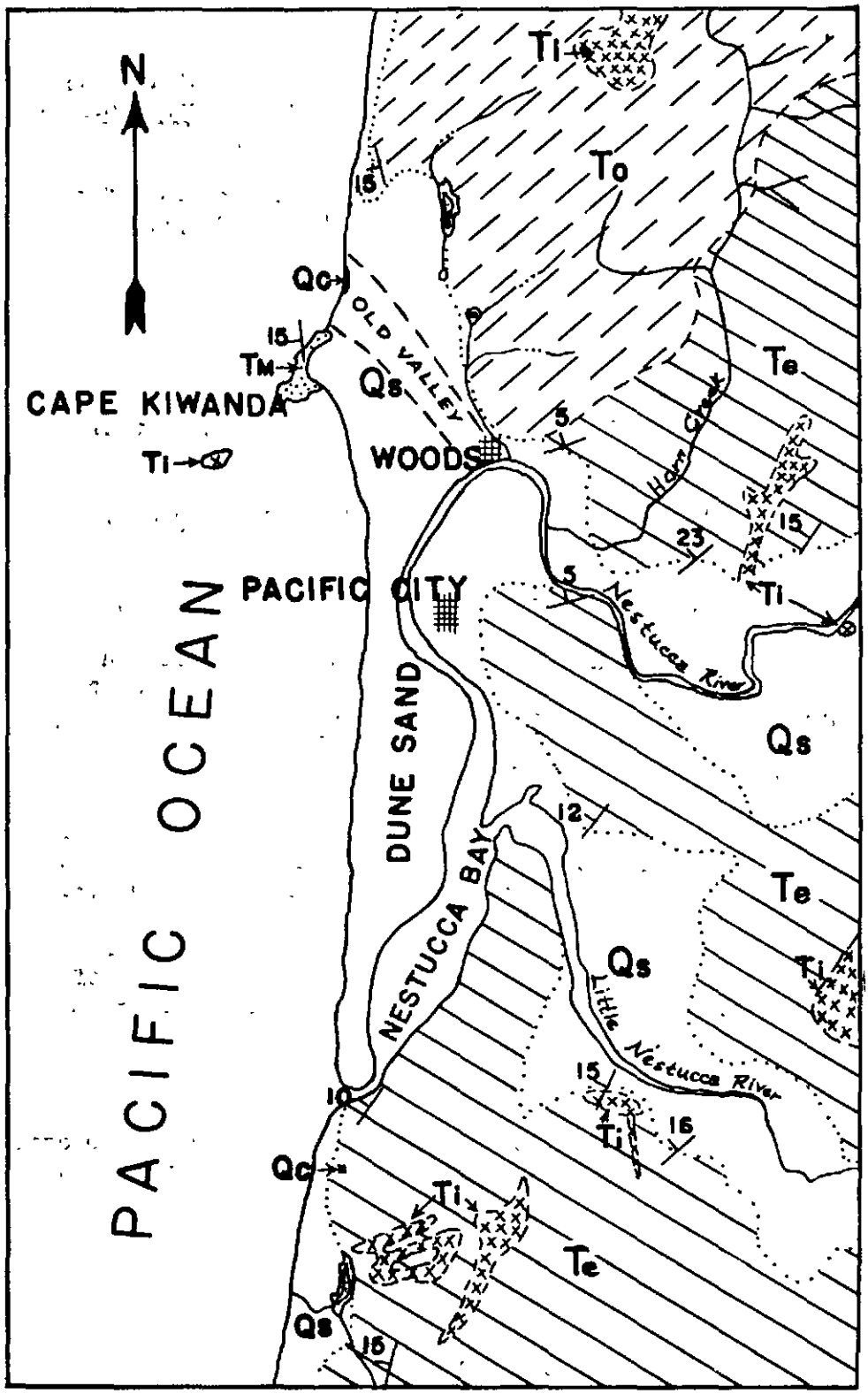
Respectfully submitted,
Mrs. Elizabeth Barr, Miss Ada Henley, E. N. Bates,
Leslie W. Bartow, W. C. Adams, Chairman



EXPLANATION

Qs
Recent
(surficial deposits)

Qc→t
Pleistocene
Coquille formation
(sand, gravel and wood)

Tm
Middle Miocene
(sandstone, siltstone, and conglomerate)

To
Oligocene
(dark massive mudstone)

Te
Upper Eocene
(tuffaceous sediments and interbedded volcanics)

Ti
Tertiary
(basalt and gabbro intrusives)

10
Strike and dip of beds

Geologic sketch map of the northwest part of the Nestucca Bay quadrangle, Oregon.

COQUILLE FORMATION IN THE NESTUCCA BAY QUADRANGLE, OREGON[1]

by
Parke D. Snavely, Jr.[2]

Recent geologic mapping by the United States Geological Survey in the Nestucca Bay quadrangle of the northern Oregon coast has indicated the presence of Pleistocene estuarine deposits north of Cape Kiwanda. These sediments are assigned to the Coquille formation of the southern Oregon coast, which has been named and described by Baldwin (1945). The Coquille sediments in the Nestucca Bay area occupy a former channel of the Nestucca River north of Cape Kiwanda prior to a shifting of the mouth of the river to its present position south of the cape.

The oldest rocks exposed in the adjacent part of the Nestucca Bay quadrangle form a thick series of tuffaceous sediments intercalated with basaltic flows and pyroclastic rocks. The sedimentary beds of this thick series contain a fauna correlative with the Cowlitz formation (upper Eocene) of southwestern Washington.[3] Unconformably overlying these tuffaceous sediments and intercalated flows is a dark-gray massive mudstone containing foraminifera which indicate an Oligocene age.[4] The mudstone contains sporadic calcareous concretions and thin interbedded sands and tuffs. Resting with angular unconformity on the mudstone, and forming the prominent headland of Cape Kiwanda, are intercalated quartzose sandstone and sandy siltstone. The sandstone is locally conglomeratic and cross bedded, with concretionary zones which contain a middle Miocene fauna. The Coquille formation rests with angular unconformity on the Oligocene mudstone and is unconformably overlain by horizontally bedded terrace sand and gravel which are presumably equivalent to the so-called Elk River beds of the southern Oregon coast. Recent dune sand and the sand that forms the spit cover the older sediments, and landslides in these deposits conceal many of the outcrops along the sea cliff. Basalt and gabbro dikes and sills transgress the pre-Coquille beds throughout the area.

The Coquille formation in this area consists of poorly sorted coarse sand and gravel together with peat, carbonaceous shale, and clay. The sand is cross bedded and contains large carbonized wood fragments. A 3-foot bed of peat and lignitic material crops out at both the north and south limits of the Coquille exposure. A minimum thickness of about 30 feet of the Coquille formation is exposed north of Cape Kiwanda, but a greater thickness is inferred because the base is beneath sea level and the upper part has been truncated by a marine wave-cut terrace. A well drilled for water by Mr. Robert Staysa within the town of Pacific City reached a depth of 174 feet and was still in estuarine deposits, which yielded quantities of methane (marsh gas).[5] It is believed that the lower part of the beds encountered in this well was Coquille which would indicate a total thickness of more than 174 feet for the formation.

The Coquille formation is estuarine fill, representing a period of down-cutting by the coastal streams and subsequent filling during submergence (Baldwin 1945). The location of the Coquille deposits in this area suggests that they fill a former valley of the Nestucca River. During a stage of sea level coinciding with the altitude of the terrace sand, which rests on the truncated Coquille, the river mouth was shifted to a point south of Cape Kiwanda.

1. Published by permission of the Director, U.S. Geological Survey.
2. Geologist, U.S. Geological Survey.
3. Paleontological data from H. E. Vokes, The Johns Hopkins University.
4. Personal communication, R. E. Stewart, Oregon Dept. Geology and Mineral Inds.
5. Unpublished report by E. M. Baldwin, Oregon Dept. Geology and Mineral Inds, June 1946.

This shifting may have been the result of a retreat of the sea-cliff in the Miocene sandstone south of the cape until it breached the divide between the ocean and the Little Nestucca River, a probable north flowing tributary to the larger Nestucca River. This would have given the Nestucca River drainage two outlets. If, then, the shifting sands along the coast north of the cape blocked the northern outlet, the Nestucca River would have followed the former course of its tributary southward and joined the Little Nestucca at its new mouth south of Cape Kiwanda. The new mouth, by its position south of the cape, might have been less easily blocked by the sand-laden northwest currents, and so became the established mouth of the Nestucca River. The Recent sand dunes and spit have crowded the river's mouth southward to its present position. Future subsurface data will determine whether the Little Nestucca River was a tributary to the Nestucca River or had a separate mouth, but the areal distribution of the formations in this area favors the hypothesis that the Little Nestucca was a tributary, flowing northward in the soft Oligocene mudstone and guided by the more resistant northward-trending Miocene sandstone to the west.

Another deposit of the Coquille formation is present about one-half mile south of the mouth of the Nestucca Bay, where sand, clay, and wood fragments have been protected from erosion by their location in a sea-cave cut in the upper Eocene basaltic sandstone. Large blocks of basaltic sandstone from the roof of the cave are associated with the Coquille beds.

Reference

Baldwin, E. M., Some revisions of the Late Cenozoic stratigraphy of the southern Oregon Coast: Jour. Geol., vol. 53, no. 1, Jan. 1945.

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LUNCHEON NOTES - December 11, 1947

"CHERT--An impure flint or hornstone occurring in beds or nodules in some stratified rocks. Often resembles felsyte, but is infusible. Colors various. Sometimes oölitic. Kinds containing iron oxide graduate into jasper and clay-ironstone; and others, occurring as layers or nodules, in limestone, are whitish, owing to the limestone material they contain. Chert sometimes contains cavities which are lined with chalcedony or agate, or with quartz crystals, making what are called geodes."

The foregoing by Dana describes a large and somewhat "hefty" specimen in shades of creamy white and yellowish tan, brought by Mr. Elder and identified and discussed by Messrs. Ruff, Libbey, and Vance.

The only other samples exhibited were two portions of geodes showing countless tiny quartz crystals, obtained from Northern California by Mr. Erickson. A paper reprint from the Scientific Monthly on the John Day country was circulated by Mr. Libbey.

The luncheon was attended by twenty members - no guests.

E. N. Bates.

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THE FOUNDERS OF GEOLOGY

Abstract of Talk by Warren D. Smith before the Geological Society of the Oregon Country, January 8, 1948

REFERENCES:

Karl von Zittel - History of Geology and Palaeontology (1901)
Frank D. Adams - The Birth and Development of the Geological Sciences (1938)
Geo. P. Merrill - History of American Geology (1906)
Geological Society of America - Geology 1888-1938 (1941)
N. L. Fairchild - History of Geological Society of America (1932)

SYNOPSIS OF DEVELOPMENT OF GEOLOGY:

First period: Largely speculative. The ancients.
Second period: A few men made haphazard field observations. Deductions highly questionable.
Third period: Use of the inductive method. Some progress, but subject still largely descriptive.
Fourth period: Geology based more and more upon physics and chemistry, with some quantitative data and experimentation of limited nature. Charles Lyell and others.
Fifth period: Modern work. Cooperative research. T. C. Chamberlin, J. C. Merriam and others.
Sixth period: Great practical applications. The oil companies. Application to civil engineering.
Seventh period: Contributions to philosophy and religion. "Human Destiny" by Lecomte du Noüy. "Man Does Not Stand Alone" by A.Cressy Morrison. Condon's teaching.

SOME OF THE PRINCIPAL CONTRIBUTORS TO THE BUILDING OF THE GEOLOGICAL EDIFICE:

1. Plato (427 B. C.)
   Atlantis in his "Timaeus".
   The theory of Atlantis today does not have much support from geologists.

2. Aristotle (384-322 B. C.)
   Student of Plato. Book on minerals lost, partly reproduced by Aricluna, the Arabian. Aristotle's greatest contribution, perhaps, was his comparison of the earth to an organism with periods of growth: youth, maturity, and decay.

3. Theophrastus (c. 372-287 B. C.)
   Pupil of Aristotle. History of Plants. Work on Minerals for 1800 years the most valuable and authoritative work on the subject.

4. Lucretius (99-55 B. C.)
   "De Rerum Natura" - "greatest didactive poem of all time." He was a materialist. He inveighed against old religious superstitions.

5. Pliny, the Elder (23-79 A. D.)
   Natural History - 37 books, the last five on minerals. One of the first encyclopaedics - treated 20,000 subjects. He died evacuating refugees from Pompeii and Herculaneum during eruption of Vesuvius.

6. Da Vinci (1452-1519)
   Recognized true nature of fossils. Recognized origin of mountains through erosion. Work of rivers.

7. Georg Bauer (Agricola) (1494-1555)
   The father of Mineralogy. Greatest work: "De Re Metallica." Hoover's translation.

8. Hutton (1726-1797)
   "Theory of the Earth" (1788). "The present is the key to the past," doctrine of uniformitarianism (1785). Laid the foundation for Lyell and Darwin.

9. Werner (1750-1807)
   The Neptunian theory - aqueous origin of rocks. His classification of rocks one of the earliest. Tried to make his stratigraphic column for Germany standard for whole world.

10. Van Buch (1774-1852)
    Pupil of Werner's, but became one of his leading opponents. From a Neptunist he became a vulcanist. Geological map of Germany.

11. Smith, Wm. (William "Strata" Smith) (1769-1839)
    Founder of the science of Stratigraphy.

12. Lyell (1797-1875)
    "Principles of Geology" - 1830. Founder of modern geology. Opposition to the catastrophel theory and Mosaic reckoning of time. Visit to America. Great influence upon Charles Darwin.

13. Darwin (1809-1882)
    "Voyage of the Beagle" - "Origin of Species." Observations (geological) around South America. Coral reefs. Relations with Lyell.

14. Agassiz, Louis (1807-1873)
    Fossil fishes. Glacial studies. Great teacher. Founder of Museum of Comparative Zoology at Harvard.

15. Nicol, Wm
    Scottish geologist. In 1827 constructed a polarizing microscope for study of thin sections of rocks. One of the greatest advances made in this field.

16. Whitney, J. D. (1819-1896)
    State geologist of California, 1860-1874. Later professor at Harvard.

17. Powell, J. D. (1834-1902)
    Grand Canyon Exploration. Second director, U.S. Geological Survey.

18. King, Clarence
    First Director, U.S. Geol. Survey, Survey of the Territories.

19. Von Zittel (1839-1904)
    One of the greatest of the palaeontologists.

20. Condon, Thomas (1822-1907)
    Pioneer geologist of the Oregon Country.

21. Chamberlin, T. C. (1843-1928)
Planetesimal hypothesis.

22. Merriam, J. C. (1869-1945)
Great student of West Coast palaeontology and geology.

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AMATEUR GEM CUTTER*

by
Lelande Quick
Editor of The Lapidary Journal
(From The Desert Magazine for January, 1948)

The snow is on the range of southern Wyoming now and the jade hunters have gone to other hunting grounds for other materials. The great horde of folks that migrated to Wyoming this year did a lot of hunting but little finding. Not long ago we used to see ads of jade merchants of Wyoming in which one advertised himself as the "jade hunter" and another as the "jade finder." Now the most diligent search seldom results in the finding of much worth while material. Recently we gathered a lot of interesting material on jade, particularly about the original discoveries, in addition to the information contained in that readable book by James L. Kraft, the food merchant, called Adventures in Jade.

Allan Branham, whose name is almost synonymous with jade, has given us an interesting account of some of his experiences. He writes, "I have been a rockhound for about 35 years. That long ago I used to be a traveling salesman for a grocery company. I had a territory right through the Montana agate beds and I early saw the commercial possibilities of dealing in rocks. When I came to Wyoming as manager of a grocery department I heard rumors of jade. Since the United States is the largest user of jade, I knew that if I could find jade of good quality in Wyoming I could sell all I could find. My wife and I, with our daughter Marcia, began hunting every Sunday. The first piece I ever sold went half to V. D. Hill of Oregon and half to the Gem Exchange, now at Bayfield, Colorado. We were not the first to find jade but we were the first to sell any. After placing a small ad we were swamped with orders. At that time there were no rock saws in our locality. When we got an order we'd take a sledge and knock off a chunk. If it was more than the order called for it went out anyway, at so much a pound. When the checks started rolling in from all over the world we could not conceal the fact from others. Then people began flocking to Wyoming and following our every move with high-power field glasses. By that time we had just about worked out the locality where the light green material had been found. We figured that the larger pieces would be at or near the tops of the hills and we began to widen our hunt. Soon we found the largest scattered deposit ever found, but we had been followed all day. We took all that we could haul. The next Sunday everybody and his brother was there and since that day, about eight years ago, the hills have been crowded with people. Some of them stay six months.

"We had sold Mr. Kraft quite a bit of jade but so many people got in the jade business that we went to Laramie and bought a grocery store. After eight months, during which we sold jade on the side, we received a request from Mr. Kraft to take him jade hunting. He came to Laramie and we set off on a three-day jaunt. About a year before my daughter, Marcia, had found two very large pieces right together. We left them because they were so dark in color. After hunting without much luck, in desperation we led Mr. Kraft to the two large boulders. His reaction was instant and explosive. We got a truck and hauled out the boulders. Mr. Kraft bought the largest boulder and gave it to the Field museum.

*Reproduced by permission.

"There is not much money in jade because only about five percent of that found is any good. We found a boulder recently that weighed 180 pounds. It was too big for us to cut so we hired a man to saw it at 10 cents an inch. After it is cut it may not be worth 10 cents a pound. We were offered $200 for it, but it may be worth $600. Everybody buys jade on a gamble. The Chinese insist on deducting 25 percent for waste. I found the largest boulder ever reported, about 5½ tons, but I believed it worthless and did nothing about it. Another man hauled it out and claims it's worth $40,000."

What happened to the boulder that Mr. Kraft didn't buy makes a fascinating story. It was made into the largest piece of jade statuary that has ever been completed and it was not carved in China as might be supposed. In books of authority on jade we read that the largest piece of statuary ever created by Chinese artisans was a jade horse weighing 67 pounds. Dr. Chang Wen Ti bought Branham's other boulder and resold it to the famed sculptor Donal Hord of San Diego. Working with an assistant 6 hours a day, 5 days a week, for an entire year, Mr. Hord recently completed a magnificent piece of work called "Thunder." Out of the original 460-pound piece he produced a finished piece weighing 104 pounds. It is 20 inches high and about 16 inches wide and represents an American Indian sitting cross-legged on rainclouds. With long fingers he pulls thunder from a drum held at one shoulder while the fierce wind whips his hair over the other shoulder. The piece is undoubtedly one of the masterpieces of America and certainly the most ambitious project ever attempted in jade by an American. It will be exhibited in Los Angeles shortly and the asking price is $25,000.

We have seen the piece in Mr. Hord's studio. While it is massive, it nevertheless rings like a water tumbler when you tap it with an object such as a pencil. Mr. Hord also has made a two-ton figure of the "Indian of the Colorado" from diorite, a material associated geologically with jade. We were most fortunate in being presented with a piece of the original boulder from which we intend making ourselves a prized ring.

* * * * * * *

When the Amateur Gem Cutter page first appeared here more than five years ago, the occasion was rare when a publication of importance contained an article about gems. Almost never did an article about gem cutting appear. But the growing interest in gems and gem cutting has created a demand for gem information and wherever articles appear they arouse wide interest. The best indication of this is that in recent months several of our leading publications have had fine articles about native gem materials. They include the Saturday Evening Post, Collier's, Pic, Magazine Digest, Science Digest, American Home, and Time.

While it still is true that there is no luxury item for which the American public spends so much and about which it knows so little as gems, the public is vastly better informed today than it was a few short years ago. There are 300,000 gem cutters in the country and probably ten times that number of passively interested persons who just need a little shove to start them off in one of man's most wholesome and rewarding pursuits - the art of gemcutting.

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CLIMBING PICTURES SCHEDULED

On February 13, the Mazamas will show motion pictures of the climbing of Mt. St. Elias, Alaska, at 8 o'clock in Library Hall. This climb was written up in the latest National Geographic Magazine.

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GEOLOGY SUBJECT OF STUDY SECTION

The sixth annual meeting of the Oregon Academy of Science was held at Willamette University January 16-17, in Salem. Dr. Warren D. Smith will act as president of the academy for the coming year. Dr. Herman Clark, Willamette University, was elected chairman of the geology and geography section, with Dr. Ethel Sanborne, Oregon State College, secretary, and Lloyd Ruff as membership representative. Chairman of the geology and geography section of the recent meeting was A. D. Vance. Following is a list of the papers which were read in the section: "Fossil Mammalian Tracks in Lake County, Oregon," by E. L. Packard and I. S. Allison of Oregon State College and L. S. Cressman of the University of Oregon; "Native Vegetation in the Willamette Valley Region," by John E. Smith of Corvallis; "Coastal Indians Land Case - an Historical-Geological Appraisal," by Dr. Smith; "Oregon's Rare Borate, Priceite," by Lloyd W. Staples of the University of Oregon; "Occurrences of Ground Sloths in Oregon," by Dr. Packard; and "Human Occupation of the Klamath Basin -- A Preliminary Report," by Dr. Cressman.

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DR. LAWRENCE IN ALASKA

Dr. Don B. Lawrence is spending January and February at Nome, Alaska, conducting winter tests on military equipment.

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LUNCHEON NOTES

December 4, 1947

Twenty-two members and five guests attended the luncheon on this date. Guests present were: Miss Norma Walker, Victoria, B.C., guest of H. Mildred Stockwell; Charles Schannys, guest of Mr. Baldwin; and June Roberts, Dorothy Edgerton, and Margaret Sachtler, all of Portland, guests of Margaret Steere..... The luncheon was unusual in that not a single rock specimen was presented. Leo Simon, however, presented a nonrock specimen and offered a $ 00.64 reward to the party identifying the specimen. Several members promptly named it as the fruit of the Oriental (Japanese) Quince, whereupon Leo promptly refused to pay the prize money claiming that the parties had obtained the answer from the back of the book.....Christmas cards were passed around and signed by the members present to be forwarded to absentees Drs. Allen, Baldwin, and Lowry, and Lotus Simon.....Mr. Libbey presented two publications for examination, these being publications by the California Institute of Technology entitled "Dawn Horse or Eohippus" and "Relation of Scenery to Geology in the Grand Canyon."....Dr. Stevens spoke briefly with reference to museum news stating among other things that they were trying now for a temporary location and felt that their prospects in this regard were very good. They would then attempt to raise a $15,000 operating fund for the coming year. He called attention to an article in the December Digest which had a story concerned with John Ripley Forbes. Mr. Forbes himself came in before the close of the luncheon, was introduced by Dr. Jones, and spoke of museum activities.....Dr. Stevens also spoke of work that his firm was doing in which they are being assisted by Johnny Robinson who conducted the very pleasant Hoods Canal trip for the Society members and stated that Mr. Robinson wished to be remembered to the Society members. R. Erickson read an excerpt from a letter from Dr. Baldwin at the University at Eugene in which Dr. Baldwin stated that the Department was interested in securing good specimens of Oregon fossils.

R. Erickson

* * *

December 18, 1947

This is the "Week Before Christmas" luncheon, a period when the members are budgeting every free moment for the completion of Yuletide celebration plans. One of the most zealous workers in the G.S.O.C. was heard to remark there will be little to report from this meeting.

That remark came as a challenge to one member to determine, if possible, the obscure or hidden values of the meeting as disclosed by its deviations from the well-established traditions and practices governing the meetings in general which provide such an abundance of material for the News-Letter report.

Today there appeared to be little effort made to assemble at the customary hour. By 12:30 nineteen members were present but fully two-thirds of this number drifted in from 15 to 30 minutes late. They entered the room with the proverbial air of the absent-minded professor and took seats at the table as though motivated by force of habit only. Gone was that alertness for lively conversation, the enjoyment of good stories and banter. The serving of good food and steaming coffee was not followed by the hum of voices in its usual pleasing volume.

The formal presentation of guests has proved an unfailing stimulus of interest in this group. Dr. Jones scanned the tables hopefully, but there was not a guest present. Our president, one of the most faithful in bringing specimens to the luncheons, manifested little of his usual happy expectancy when he made the call for the passing of specimens. The reason for this was that those he intended to bring were left at home. Two or three other members made a similar confession and then there followed a vigorous exploring of pockets and may I add of handbags also, but the net result of this indoor rock-hunting expedition was two specimens, a nice piece of pumice from Hayden Island by R. Erickson and a pretty, banded beach agate by T. Matthews. E. N. Bates passed around a book, "Geography for Grown-Ups," and John Ripley Forbes briefly outlined the part which the G.S.O.C. is preparing to assume in promotion of the founding of the Oregon Museum of Science and Industry. This was an impressive message and received with close attention.

At the regular closing hour, before declaring adjournment, Dr. Jones announced that he will be absent from the city during the next six weeks while attending national meetings and a special course at the University of Colorado on the diagnosis and treatment of Infantile Paralysis. During the absence of the president the chair will be filled by Vice-President Orrin E. Stanley.

This luncheon may have had little of merit from the geological standpoint, yet important as is the role of geology, in war and in peace, the greatest known factor for securing and maintaining peace is the brotherhood of man. The plans evolving in the hearts and minds of the group were full of love for their fellowman and so absorbing as to create mannerisms of abstraction and forgetfulness, but were in accord with the true Spirit of Christmas and manifested by giving for the happiness of others. Selfless giving, like mercy, is twice blessed and from it the giver receives peace of mind and refreshment of soul.

Mary Margaret Hughes

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GEOLOGICAL NEWS LETTER

OFFICIAL PUBLICATION OF THE

VOL. 14 NO. 3 PORTLAND, OREGON March 1948

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MEMBERSHIP APPLICATION
GEOLOGICAL SOCIETY OF THE OREGON COUNTRY

Qualifications and dues:

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

Date . . . . . .

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

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

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

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

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

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

Sponsored by_____
(member)

_____
(signature)

SOCIETY ACTIVITIES

LECTURES: On the second and fourth Thursdays of each month in Public Library Hall, S. W. 10th Avenue and Yamhill Street. Watch the Oregonian and Oregon Journal for further announcements. (8:00 P. M.)

TRIPS: A field trip is held each month. The trip chairman is [Norris B. Stone, BR 2683 or OS 6531.] Watch the daily papers for an announcement.

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

MEETING ANNOUNCEMENTS

Saturday March 13 — The annual banquet to be held at 7 o'clock P.M. at Reed College Commons, $2 per plate. Dr. L. S. Cressman will deliver the address, and a program of stunts will be featured. Reservations must be in by March 9. Call Leo Simon - BE 0300.

Thursday March 25 — Watch the daily papers for an announcement.

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NEW MEMBERS

G. Haselton — 1107 S. W. 20th Avenue, Portland, Oregon

Miss Althea Wheeler, Cascade Locks, Oregon

Mrs. San Brace — 1234 S. W. 12th Avenue, Portland 5, Oregon — AT 7798

****

MEMBER INJURED

Sympathy and wishes for a quick recovery are extended to Mr. Geary Kimbrell who has been confined to the Holliday Park Hospital from injuries resulting from a fall.

****

O. E. Stanley
at. 6141 ext. 301

Leo Simon Be 0300

Hart Mt. Meteor

The brilliant fireball seen at 7:30 P.M.(PST) Dec.30,1947 from much of Oregon, Nevada and Calif. First reports from 47 observers were received. Questionnaires sent to many of these brought very accurate data on directions and heights.

EXPLANATION OF TRACING MAP BELOW

1. Solid arrows show the directions from various places that the fireball was first seen. For all who sighted it when it burst into luminosity, the arrows converge toward a definite locality, providing directions were properly given. Some did not sight its first appearance. Their arrows may be quite accurate for them.

2. Dashed arrows show the directions reported the fireball finally burst and disappeared. Note the general convergence north of Hart Mt. The evidence is conclusive in spite of some irregulars.

3. Heavy arrow indicates the calculated "ground path", the territory passed over while the fireball was luminous.

Fig.1

"Put F and L on proper arrows for directions first and last seen."

Fig.2

"Put F and L on sky for heights first and last seen."

Small diagram below is side view of meteor's descent. Observer at Paisley said he saw little motion. Reason was that meteor was heading almost at him. It burst and disappeared over a point 35 miles east of Paisley. Some meteorites may have traveled that far.

Fig.3

From Portland S30°E
Sawyer-Steiwer Ranch
BEND
S50°E
S35°E
Mallinville S40°E
Willakenzie S70°E
Willakenzie S60°E
From Eugene S50°E
Gap Ranch
"Due S."
S15°E
IRONSIDE
S40°E
S20°E
zenith
sky
F
L
GROUND
observer
horizon
ONTARIO
S55°E
S50°E
S40°E
S30°E
From Willakenzie
From Eugene
PAISLEY
S85°E
METEOR
GROUND
PATH
STARTED HERE
From Klam.F.
Hart Mt.
N75°E
N80°E
NE
"Due NE"
N75°E
LAKEVILLE
Meteor Air Path
75 miles
25 mi.
35 mi.
90 miles
Paisley
Meteor Ground Path
N55°E
From Cederville
N18°E
From Reno
Vacaville
Idaho
Oregon
Nevada
121°
120°
119°
118°
117°

From Geological News-Letter
March, 1948

THE BRILLIANT HART MT. METEOR

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

Shortly after 7:30 P.M. on December 30, 1947, my telephone rang. On the line was Mrs. Christine Wikstrom of Eugene. Considerably excited, she told me that a few minutes earlier a huge ball of fire had dashed down the eastern sky, brilliantly lighted the street for two or three seconds, then exploded in a blinding flash. "It was about as big as the moon and the brightest thing of the kind I have ever seen!"

A few questions resulted in some fairly definite directions and heights in the sky. As I had scarcely finished my studies of the big fireballs of November 22 and December 19, both requiring a great deal of time, correspondence, and calculations, I was not too eager to take on another - without at least a little rest between rounds. Up to November 22, 1947, no big meteor had been traced over our Pacific region of five states for nearly 15 months. Three in a few weeks were almost too many.

Almost hoping that no one else would report on this "No. 3", and that I could escape working it up, I retired early. At 11 o'clock the telephone again required my attention. Central announced, "Portland is calling." It was Leverett Richards of The Oregonian. He started with, "I surely hope I didn't get you out of bed." I truthfully replied, "Oh no, I'm still in bed." Mr. Richards had a dispatch from Klamath Falls that two employees of Radio KFLW had reported seeing the fiery object. Also it had created considerable disturbance at Alturas, California, where it was thought to have struck the hills not far from town.

The next morning Ed Gent of the Willakenzie district, northeast of Eugene, telephoned his report. He seemed quite familiar with angular measurements and stated with confidence that he first saw the meteor at about 15° altitude 20° south of east, and saw the final explosion 10° above the horizon 30° south of east. Then around noon Paul Ewing of The Oregonian called from Portland to exchange news with me. Together we estimated that the fireball had likely not exploded over California at all, but somewhere near the Lake County-Harney County line in southern Oregon. This "guess," published as such, later proved to be very nearly correct.

During the day and evening of December 31, most of the far-western radio newscasts mentioned the gigantic celestial skyrocket which lighted up three states the evening before. Most of them were also making a great deal of the 100 residents of Alturas who had ventured forth into the hills to search for the "remains" of the visitor from the skies. Nothing was found, and later the Alturas Plain Dealer and Times carried this note: "The sheriff's office reports failure of the posse that was seeking the meteor that fell in the Warner Mts. - with a crash. - (It) will just have to lie buried in the snow until summer."

News service requests that observations be sent to the American Meteor Society soon brought reports from as far north as Portland, east as the Idaho line, and south as San Francisco - and a good sprinkling of localities between. Usually "first" reports (unlike Mr. Gent's) carry little of directional value. Most observers, entirely unfamiliar with fireball technique, are more anxious to tell that "it fell just a short distance from me" than to give directions.

But we are always grateful to get their names and addresses. Perhaps hundreds see a meteor to one who will take the trouble to write about it. Those who do report are the more intelligent and responsible ones usually, and if sent questionnaires, will fill them with usuable data and return them. These "second" replies are the ones from which we get our information for tracing a fireball.

The information most wanted is the direction from the observer and the altitude in the sky when the meteor was first and last seen. After 16 years at this work, I have found that the marking of a simple diagram brings for more accurate information from the general run of observers than questions about angles. Surveyors, weather bureau men, forestry men, and teachers of mathematics and science will readily answer inquiries regarding degrees of altitude, but many others will become frightened at these and will never be heard from again.

The editor of Geological News Letter wrote: "The chart and questionnaire were quite enlightening. I have wondered how you could get useful answers from the public after all I've read of the discrepancies supposedly reliable witnesses give after a simple automobile accident." Meteor witnesses are likely just as imperfect, but the less intelligent usually do not send in reports. Questionnaires are sent out only to those seeming to possess definite information and most able to give it. These constitute 20 or 30 percent of those sending "first" letters.

The directions the fireball was first and last seen are to be indicated by marking a diagram in which arrows radiate out every five degrees from a center, where the observer is supposed to be located. Fig. 1 on the chart shows one-fourth of the complete "wheel" of arrows. Instructions on the questionnaire state that an F is to be placed on the arrow which most nearly represents the direction in which the luminous object was first seen, and an L on the one indicating the direction of the disappearance. An observer at home or in familiar surroundings where directions are well known, and who is intelligent, has a good memory, is honest and cool-headed, and has definite landmarks to refer to is quite apt to give directional data that is accurate to 5°. The arrow diagram can be placed flat with N toward the north, etc., and the directions labeled without any knowledge of degrees.

There is an existing fact as to the spot over which the fireball under consideration flared into luminosity because of friction with the upper air. If all who mark the diagram saw this first flare and get F's on the proper arrows - or draw additional arrows between when they believe this will make it more accurate - , then when these arrows are transferred to the plotting map and started from the various places of observation, all will run toward a definite location and will meet there. (Note the six solid arrows on the plotting map which almost meet at the east end of the heavy "ground path" arrow by the words "Meteor Started") The same would be true regarding the dashed disappearance arrows indicating by their general convergence the spot over which the fireball was last seen. But since exact directions cannot be hoped for, the meeting of these arrows is never perfect - but the nearness to meeting is often almost uncanny.

The plotting chart is prepared by tracings over a large Rand-McNally map, where meridians are supposedly run very accurately and towns are at their proper places. Let us first consider the direction of disappearance given from the Sawyer-Steiwer Ranch. The observer put an L on the arrow which indicated 35° east of south. With a protractor and ruler we lay off a dashed (disappearance) arrow in this direction. When Ontario reports "S 55° W" and Gap Ranch says

"due south", the meeting of the three dashed arrows is too nearly perfect to be accidental. When we add to these the lines indicated on the returned questionnaires from Willakenzie, Paisley, Klamath Falls, and the three separate ones from Lakeview, no doubt remains that the Alturas meteorite hunters will not be helped much by the melting of the winter snows.—The lines from Eugene, McMinnville, Portland, and one from Ontario are not quite so convergent, but show the general trend. A few "second" reports were off more than any plotted.

Note this: When sufficient reports are received, there is always only one preponderant convergence of disappearance arrows; never two or more almost equally convincing. This indicates that several observers had close knowledge of the fact and expressed it fairly accurately. Some others missed the fact and, having nothing to agree upon, ran wild.

The point of appearance is not so easy to determine since all observers do not sight the initial flare into luminosity. There is not so general a convergence of lines. Bill Ramsey at Gap Ranch missed most of the flight, yet his appearance arrow is likely just as correct for him as his disappearance arrow. In the case under discussion, there are six appearance arrows which establish the starting place splendidly.

In order to determine the "air path" of a fireball, we need data on the altitudes of appearance and disappearance. Fig. 2 is the questionnaire diagram the observers are asked to mark. This has nothing to do with directions from them; only with apparent heights in the sky. An F marks the estimated height at which the fireball was first seen; an L the disappearance height. In some tracings, transits have been used to measure some of the altitudes quite accurately. At times we have sent small cardboard clinometers to some of the observers. Most reports, however, are from estimations. Long experience has shown that such heights nearly always have to be "devalued."

It is well known that to most persons the full moon appears much wider when on the horizon than when high in the sky. Star groups when rising or setting seem considerably more spread than at higher altitudes. There are two general explanations for this, but they will not be discussed here. I have made tests on myself with the aid of a clinometer mounted on a tripod. When there are bits of cloud here and there, the angular altitudes of these at various places are estimated and then measured with the instrument. I find by repeated trials that my estimates of 10°, 20°, or even 30° are usually just about two times the measured amounts. I therefore have to use one-half of my estimates. From 30° to 60°, I use two-thirds; from there on up nearly to 90°, three-fourths. (Fortunately, I "guess" 90° quite well.) These same factors are usually applied to estimated altitudes of others, and seem to work quite well.

With the "ground path" and the "devalued" angles of altitude (if measured ones are not at hand), we are ready to calculate heights of appearance and disappearance. A transit operator each at Bend and Ontario measuring angles of altitude and azimuth at the time of observation could have furnished all the data needed for the solution of both the "ground path" and the "air path." But since these celestial travelers give no advance notice of their intended visits, we have to do what we can with the reports of inexperienced persons in nearly all cases.

The heights do not work out nearly so "unanimously" as the ground path. We usually calculate these from each individual report and note through what values the figures range. We use the trigonometric formula h=d tan a. Here h is the height; d, the distance from the observer to the beginning or end of the

"ground path"; and a, the angle of elevation. If the meteor is seen from a great distance, we add $d^2/2R$ to the second member as a correction for the curvature of the earth. Another method is often used to check the results. R represents the radius of the earth and d has the same meaning as in the general formula.

For the meteor now under discussion we find, after discarding some unreasonable results, that the calculated heights of appearance range from about 60 miles to 90 miles; of disappearance, from 20 miles to 30 miles. Fair averages would then be 75 miles and 25 miles for heights at the ends of the ground path, figures known to be quite reasonable from many careful measurements on various meteors in the past. Using these amounts, we illustrate the slope of descent in the diagram of Fig. 3. This shows quite definitely why Clyde J. Bramlette at Paisley reported that he saw very little motion of the blazing fireball.

The general plotting map shows that the recent meteor finally exploded and disappeared when about 10 miles north of the top of Hart Mt. in southeastern Lake County, Oregon. It became luminous over a locality approximately 90 miles almost due east of its final break-up. The observers at Klamath Falls reported the meteor had a northward motion; those at Eugene, southward; at Gap Ranch, westward. A study of the map will show that all were correct. They had different points of view and could not judge whether the object was nearer them at the start or the end.

Thunderous sounds and popping noises were reported from widely separated places as occurring at the time of flight. This is hard to understand since sound travels only 12 miles per minute in air.

There were two distinct explosions; one, during flight; another, at the end. Descriptions of falling chunks and sparks at the end point indicate that meteorites undoubtedly fell to the ground. Because of the evident breaking up, they were most likely of the stony type - perhaps even rare howardites. These may be scattered along the last of the visible flight and beyond.

Phil F. Brogan, Bend newspaper man, geological writer, and an officer in the Order of the Antelope, which holds an annual summer encampment on the top of Hart Mt., expresses the hope that their campsite has not been hit. "In past years I had enough trouble removing rocks, pine cones, and sticks so that I could bed down - and now there is the possibility I'll have to scrape away some meteorites." Mr. Brogan, notwithstanding, some of us hope the Antelopes will encounter some valuable stones from the sky on the summit of this noted mountain.

Perhaps it should be explained that the lengths of the directional arrows on the plotting map have no significance. Those that will not strike the general regions found for the beginning and ending of the flight are not continued far enough to confuse the tracing. But a solid arrow and a dashed arrow starting from the same observing station may, even though not very accurate, show the general direction of the meteor's motion.

The lines on the Hart Mt. plotting map are in all cases drawn as accurately as possible from the exact figures furnished by observers either by telephone or by letter. No "editing" has been done to make an ideal map or to prove any point. Although nearly all had the choice of angles in steps of 5° only, yet the convergence of arrows is striking. The two observers at Ontario estimated disappearances differing by 5°.

Here is the list of observers furnishing the data on the map:

Portland - Rev. W. H. Hughes, 2413 N. Albina Avenue.
McMinnville - Mr. and Mrs. Robert Evans, Route 2.
Willakenzie - Ed Gent (Eugene mail route).
Eugene - Mrs. Christine Wikstrom, 2396 Washington Street.
Klamath Falls - Gordon Lee, Chuck Cecil and Gib Walters, Radio KFLW (1 report).
Lakeview - Mrs. V. T. Ritzinger, Eve Ferguson, G. H. Baker (3 separate reports).
Vacaville - Prof. Paul S. Taylor, University of California, Berkeley.
Cedarville - Bob Sweet
Reno - Mrs. Marian Reese, 408 Arroyo Street (Angle measured by Prof. Blair).
Ontario - Dr. L. M. Koger, H. B. Clement (2 separate reports).
Gap Ranch - Bill Ramsey and family of Creswell, Oregon.
Sawyer - Steiwer Ranch - Mrs. Howard Lamb, sister of late Senator Steiwer.
Paisley - Clyde J. Bramlette.
Tronside - Kenneth Grabner.

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BEGINNING DAY

Time is only relative --
And in the infinite plan
An instant of eternity
Is a billion years to man.

Out of the formless void,
Steeped in fathomless night,
God from beyond the beginning
Created the living light.
Swirling neutrons and protons
By fission in reverse
He gathered to form the atoms
And builded the Universe.
Planets, suns and galaxies
Moved their appointed way --
And the evening and the morning
Marked the beginning day.

---A. D. Vance

February 19, 1948.

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LUNCHEON MEETINGS

January 8, 1948

Dr. Arthur Jones being in Colorado, Vice-President Orrin E. Stanley presided. Winter vacations cut the attendance to 16..... Dr. Courtland L. Booth passed around a Christmas letter from Mr. Kraft of jade fame. He also had a small agate and a letter from Montana by Vern Tork..... Ray Baldwin, fresh from his California sojourn, told of his trip and his visit with the Treashers at Sacramento. In addition to some California booster literature, Ray had two bulletins by the Los Angeles Museum - one by Chester Stock on Rancho La Brea and one by Hildegard Howard on fossil birds. Both bulletins were about fossils taken from the La Brea asphalt pits. Ray also vindicated Mr. Stanley on speckled sheep - he saw some in California..... Leo Simon told about an Academy of Science lecture on the use of wood waste he had heard the night before. He also announced an atomic energy display to be set up in Meier & Frank's auditorium January 12 to 17..... A card from Ken Phillips (also in California) to the luncheon group made the rounds..... Dr. Warren D. Smith read a letter describing permafrost conditions in Alaska. He also told of the hazards of travel between Eugene and Portland due to flood conditions.

H. Bruce Schminky

* * * * *

January 15, 1948

Eighteen members and two guests turned out for the January 15 luncheon meeting at which Mr. Stanley presided in Dr. Jones' absence..... Miss Ada Henley introduced Mary Jane Bigger and Mrs. Owen introduced Myrtle Bergren..... A number of interesting specimens were passed around, although this scribe was too busy eating with one hand and writing these notes with the other to get a good look. Mr. Simon passed around John Allen's Christmas letter and showed us a pamphlet describing the Atomic Energy Exhibit at Meier & Franks. Mr. Erickson brought a fossil specimen of Cretaceous age which E. M. Baldwin had sent him, and also two specimens from the John Day Country: one a piece of green chalcedony and the other a most excellent example of an F.R.D.K. Mr. Vance showed some very fine photographs taken near 29 Palms, California, during Christmas vacation, as well as some rock specimens from the same locality. These were a sack full of Paleozoic granite, some orthoclase dike rock, and an artifact of doubtful origin which looked suspiciously like a petrified shoe last..... Mr. Bates of the Museum Fund Campaign Committee was kind enough to warn us to turn in our contributions NOW before the wolves claw at the door.

M. L. Steere

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GEOLOGICAL NEWS LETTER

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MEMBERSHIP APPLICATION
GEOLOGICAL SOCIETY OF THE OREGON COUNTRY

Qualifications and dues:

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

Date . . . . . .

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

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

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

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

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

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

Sponsored by _____
(member)

_____
(signature)

SOCIETY ACTIVITIES

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

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

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

MEETING ANNOUNCEMENTS

Thursday April 8 — "The John Day Trip," by Leo Simon. A review of the GSOC trip made last summer through the John Day country and other parts of central Oregon. Kodachrome pictures.

Thursday April 22 — Auction of geological specimens, books, etc. for the benefit of the GSOC contribution to the Oregon Museum fund. Bring whatever you have for sale to the luncheon meetings or to Leo Simon's studio, 711 S.W. Ankeny Street, or to the office of the Department of Geology and Mineral Industries, 702 Woodlark Building, as soon as possible so the Committee can arrange them for the sale.

The stunts postponed from the Annual Banquet will be dusted off and brought out for this meeting.
Bring your specimens and your purse.
Place of meeting will be announced at meetings and by telephone committees.

FIELD TRIP ANNOUNCEMENTS

Sunday Apr.25 — G.S.O.C. Field Trip scheduled for Sunday, April 25. Geology of the Columbia River Gorge to Cascade Locks. Leo F. Simon, Leader. Start 8:00 a.m. S.W. Front and Yamhill Street. Cross on Burnside Bridge and out Sandy Boulevard to N.E. Glisan to 12-Mile Road. Turn left to Halsey. Out Halsey to Troutdale (rest stop).

Stops will be made at Chanticleer, Crown Point, Multnomah Falls, etc. Lunch at Eagle Creek (bring your own). Then to Cascade Locks.

References to read: Ira A. Williams, "Geology of the Columbia River Gorge" and Edwin T. Hodge, "Geology of the Lower Columbia River."

Quadrangle sheets of Portland area, Troutdale, Mt. Hood & Vicinity, and Hood River will be helpful.

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NEWS NOTE

Ardis Jones, daughter of Dr. and Mrs. Arthur C. Jones, and Donald R. McKay were married in the Church of Our Father, Unitarian, Saturday afternoon, March 20, 1948, at three o'clock. The Sunday Oregonian of the 21st carried a description of the ceremony and of the bride's costume but made no mention of the proud smile worn by the bride's father as he marched down the aisle with his daughter on his arm.

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NEW MEMBER

Elsie Etzel, 9016 N. Ida Avenue, Portland, Oregon UN 3596

CHANGE OF ADDRESS

Mr. and Mrs. A. O. Cole, 3618 N. Montana Avenue, Portland 12, Oregon
Mr. and Mrs. Roy S. Hamburg, 1326 S.E. 14th Avenue, Portland, Oregon

OCCURRENCE OF WARM VENTS ON GARRISON BUTTE, DESCHUTES COUNTY, OREGON

by

Phil F. Brogan

Wisps of vapor drifting from the top of a brush-covered cinder cone seven miles north of Sisters, Deschutes County, Oregon, on a sub-zero morning recently led to the discovery of warm vents, around which were oases of green on an otherwise frozen, snow-covered butte. These green spots in the cone snowfield are on the north slope of Garrison butte, an aged basaltic cinder cone just east of Black butte, one of the most lofty cinder cones in Oregon.

First to notice the drifting vapor, on a morning when a minimum of 20 below zero had been recorded at Sisters, were Dick Harland and Kenneth Clark, forest service crewmen, who notified Richard P. Bottcher of the Deschutes national forest headquarters staff in Bend. Ranger Harold Gustafson of the Sisters district, Bottcher, and the writer were in a party that inspected the "steaming butte" on the late afternoon of February 8, 1948.

The snow-free vents were easily located, high on the north slope of the low cone, about 300 feet high. The ground in the vicinity of the vents was unfrozen. Mosses, grasses, and other vegetation covered the snow-free area. A short distance under the surface, worms, beetles, and other insects were found, despite the fact that the air temperature was near the freezing point. Beyond the fringe of the warm spots, the ground was solidly frozen and devoid of vegetable and insect life.

A temperature reading was made near the center of one of the more prominent oases, with the thermometer slipped just under the surface of the earth, through a narrow opening. The observed reading was 41.6 degrees compared with an air temperature of 32.2 degrees. In test hole no. 2, excavated to a depth of about two feet, the temperature was 45.6 degrees. The air temperature was 33.1. A third test hole provided a reading of 44.8 degrees one foot under the surface. The air temperature was 33.7 degrees. The ground temperature away from the green spots was 32 degrees. Other than that from the melted snow, there was no water on the butte.

Tests with lighted matches revealed a slight upward draft in the summit vents.

In removing cinders from the north slope of Garrison butte, forest service crews have excavated two deep pits, one above the other on the slope of the cone. In one of these pits, about 11 feet below the sloping surface and near the northern base of the butte, are other warm spots in a two-foot stratum of scoria and small lava bombs. The slope of this stratum is upward and, at one stage of the eruption creating the cone, the porous stratum formed the surface until covered by fine scoria and gravels. Three readings in a hole excavated into the side of the pit provided a temperature of 48.2 degrees. The air temperature was 32.8 degrees. On either side of the porous stratum the surface temperature was 32 degrees.

Garrison butte, probably of the same age as nearby Black butte, has a well-weathered summit crater sloping gently to the east. Covering the floor of this old crater was about one foot of snow. There was no evidence of warm vents in the crater.

The green oases and warm spots found near the summit of the butte are about 100 feet north of the crater at a point where the cone starts sloping sharply to the north. The summit warm zones are on an east-west line. There is some evidence of slight slumpage.

There is evidence that the warm spots in the pit near the base of the cone and those at the top are in the same ascending stratum of coarse materials loosely packed. This would possibly preclude the possibility that the warm air (no evidence of gases was obtained) is issuing from an original central vent leading up to the crater floor.

It is the opinion of this observer that buried under the fragmental material at the north flank of Garrison butte is a crack, or fissure, that is possibly the source of the heat that is finding its way up through the porous stratum to the top of the cone. As this earth heat moves up the stratum it is being cooled.

The undersides of the scoria and bombs in the heated stratum are encrusted with transparent crystals. It was also noted by the observer that in the deep cut there are a number of cracks leading up through the layers of scoria to the surface. These cracks are sulphur-yellow in appearance.

For many years there have been reports of "hot spots" in the volcanic Central Oregon country, but the Garrison butte occurrence is the first authenticated discovery of such zones. There are no thermal springs in the area.

The fact that the Garrison butte "oases" are on the north side of the cone preclude any possibility of warming by the sun. Furthermore, the tests were made in a week when Central Oregon experienced its coldest weather in 11 years.

Garrison butte, presumably named because of its location not far from the site of pioneer Camp Polk, is in an area of scoria cones. Weathered surfaces indicate that these cones are much older than the barren and obviously recent cones of the Bend area and the McKenzie pass country.

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ANCIENT VOLCANOES OF OREGON

The story of Oregon volcanoes, both past and present, is told in a new publication just released by the State System of Higher Education. It is "Ancient Volcanoes of Oregon," written by Dr. Howel Williams, chairman of the department of geological sciences at the University of California.

Originally delivered as the first two lectures in the Condon lecture series, the book is a popularized account, in layman's language, of Oregon volcanoes from the late Cretaceous time (75 to 60 million years ago) to the present. An added note is included concerning the future of these volcanoes.

The decapitation of Mount Mazama, in whose crater now lies one of Oregon's most scenic attractions, Crater Lake, is described in the section titled "The Last 25,000 Years." No event in the long volcanic history of Oregon was more dramatic than this cataclysm which was seen from afar by the early Indians, Williams says. A series of drawings, from paintings by Paul Rockwood, illustrating different phases of the action and a photograph of Mount Mazama as it looked before the explosion, are included.

Of the future, Dr. Williams says that the days of widespread volcanic activity in Oregon seem to be at an end. However, he believes it would be foolish to say that new eruptions will not take place considering the number which have occurred during the past few thousand years. If they do come, earthquakes will serve as heralds and the warning should be ample, he says.

The Condon lecture series was recommended to the State System of Higher Education by the late Dr. John C. Merriam, who for several years was a member of the University of Oregon faculty as a consultant and lecturer in the human values of science and nature. Dr. L. S. Cressman, head of the department of anthropology at the University, is chairman of the lecture committee.

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REPORT OF THE PROGRAM COMMITTEE
1947-1948

1947	Lectures
April 11 -	"Northern Rhodesia Natives and Customs," by Mrs. Dorothy Wall. Motion pictures.
April 25 -	"Scenes in the Southwest Pacific," by John R. Anderson. Colored slides.
May 9 -	"Cenozoic History of the Lower Columbia River Basin," by Dr. W. D. Lowry.
May 23 -	"Cenozoic History of the Lower Columbia River Basin," (continued) by Dr. E. M. Baldwin.
June 13 -	Moving pictures of College of the Pacific expedition to Death Valley, California, shown by O. E. Stanley.
June 27 -	"Travelogue in Afghanistan," by Barney Rodolf.
July 11 -	Colored slides of Corps of Engineers trip in the Snake River Canyon by Ford Wilson.
July 25 -	"Geology and Its Relation to You the People," by Don Birch.
August 8 -	Annual picnic.
August 22 -	"Geology of the Black Hills and Environs," by Dr. John Eliot Allen.
September 12 -	Colored slides of Death Valley expedition by O. E. Stanley.
September 26 -	Showing of outstanding slides by G.S.O.C. members Franklin Davis, Lloyd Ruff, Leo Simon, Arthur Jones, O. E. Stanley, Richard Anderson.
October 9 -	"Trip to Jackson Hole and Grand Tetons," by L. E. Rydell and A. J. Gilardi.
October 23 -	"Glimpses of the Cretaceous Seas in Oregon," by Dr. Earl L. Packard.
November 13 -	"The Mighty Columbia," slides and sketches, by Tom Stockdale.
November 27 -	Thanksgiving (no meeting).
December 11 -	"The Geologic History of the Cascade Mountains in Oregon," by Dr. E. T. Hodge.
December 25 -	No meeting.

1948 Lectures

January 8 - "Founders of Geology," by Dr. W. D. Smith.

January 22 - "Natural History of the Ascension Islands," by Charles A. Maillard.

February 13 - "Geology of the McKenzie River Country," by Paul Howell.

February 27 - Annual meeting, election of officers, illustrated talk by John Ripley Forbes.

March 13 - Annual banquet.

F. L. Davis
L. L. Ruff
A. D. Vance
F. W. Libbey, Chairman

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LUNCHEON MEETING - JANUARY 22, 1948

Greetings from the Salem Geological Club were brought to the luncheon by Carl P. Richards, who mentioned his pleasure at meeting several Society members at the Oregon Academy of Science meeting at Salem. He described a field trip made by the Salem group the preceding Sunday to Silver Creek Falls park, at which the geological investigation was rather upset because the 24 members arrived at lunchtime. "They are no pikers when it comes to being trenchermen," he admitted. Mr. Richards discussed an article he had written, which was published in the Mazama yearbook, comparing the astronomical facts as to what the Star of Bethlehem might have been. He explained that the Astronomical League is an association of Astronomical societies.....A copy of "Man Does Not Stand Alone," by A. Cressy Morrison, was displayed by H. B. Schminky.....Concretions from the Wilmington, Illinois, coal mines were passed around by Mrs. Amza Barr, who stated that the fossil leaves were of Pennsylvanian age.....An anadara with calcite filling was shown by A. D. Vance, who pointed out that although the shell was quite weathered away there were still evidences of muscle scars.....Pseudo jade (californite) was exhibited in a chunk brought to the meeting by F. W. Libbey.....Vice-President Stanley called for a volunteer as chairman of the banquet committee, and asked that the members of the nominating committee meet at the close of the luncheon. A card showing a view of Midway Point, Monterey Peninsula, was received from Lotus Simon, who wrote from the University of Wisconsin thanking the luncheon group for its Christmas greeting. "We have had much snow this fall (it seems winter is not here yet)", wrote Miss Simon. "I shall spend Christmas in Indianapolis and then proceed to Chicago to attend the A.A.A.S. meetings."

Miriam Shepard

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LUNCHEON NOTES - JANUARY 29, 1948

Our President, Dr. Jones, returned to the fold after an extended trip East. He passed around a copy of the Scientific Monthly, showing an illustrated article on American and Eurasian glaciers of the past, a description based on existing glaciers. He also read a letter from Ewart Baldwin expressing appreciation for the Christmas card sent him by the Society. Making up for lost time while he was away, Dr. Jones passed around a variety of specimens including banded onyx, lepidolite, plume agate, and some rock specimens from the Rocky Mountain front.

Raymond Baldwin circulated the Mazama magazine, which contains Carl Richards' excellent story of the Star of Bethlehem; also an article on the Seven Devils country, Idaho.....Paul Howell described a geological reconnaissance in Utah, where his party did a large amount of seismic work. Paul circulated some interesting specimens, particularly an agatized dinosaur bone from Mesozoic beds of San Rafael Swell, also a piece of wax (ozokerite) from a mine in the Wasatch Range.....Leo Simon had a fine specimen of crystal fluorspar from Illinois..... Mr. Stanley had a release from the College of the Pacific showing some of Stanley's pictures of the expedition into Death Valley last summer.....Bruce Schminky remarked upon the Mazama showing of the film taken at the time of the 1946 climb of Mount St. Elias. Schminky also announced that there would be another foundation trip which he would lead on February 15th, starting at 1:30 p.m..... Mr. Bates made a report on what has been accomplished in collecting Museum funds by his committee.

F.W.Libbey

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LUNCHEON NOTES - FEBRUARY 5, 1948

No guests were present among today's attendance of 21 members, but a gratifying array of specimens was seen. Aragonite from Central California, with pits on the base showing the beginning of the crystal forms, was exhibited by Dr. Jones. A piece of dinosaur bone was shown by Mr. Bartow. Mrs. Sunderland had a plateful of specimens, including a number of pieces of highly colored agatized wood found near the Petrified Forest in Arizona, and a brachiopod from New Mexico. Dr. J. C. Stevens reported on a visit to Umatilla Dam and passed around a small vial containing samples of the tiny steel bullets used by the million in core drilling.

Postcards of Khyber Pass, the Northwest Frontier between India and Afghanistan, were shown by Miss Glaeser, who visited that area when she was living in India some ten years ago. Franklin Davis called attention to a book on the life of Douglas for whom the Douglas fir was named. The book, which sounded like worthwhile reading, was not, however, due at the library today but had thoughtfully been renewed by Mr. Davis and passed on to another member of the group.

Mr. John Ripley Forbes reported an attendance of over 400 at the last joint meeting of the Museum Foundation and the Audubon Society, with many tickets sold.

A.H.

* * * * *

LUNCHEON MEETING - FEBRUARY 12, 1948

The 22 present at today's luncheon happily included two members who had been absent recently because of illness - Mrs. Vance and Mr. Stanley. Dr. Jones introduced his sister, Mrs. George Cornes and nephew, Stanley, as his guests from Nehalem. Even a searching of pockets and handbags did not produce many specimens today. However, as this was Lincoln Day, Mrs. Sunderland appropriately brought "something" which she had picked up at Lincoln Beach. I did not hear the final decision as to its identity but I heard a remark that it could be the head of a hatpin. Mr. Minar passed around a sample of quartz sand and another of crushed apricot seed coverings used as abrasives in sand-blasting. This museum-conscious geological gathering was interested in the bulletins which Dr. Jones had brought from the Natural Museum of History in Denver, Colorado. A letter from Mr. Lyle M. Nelson, Director of Information, Oregon State System of Higher Education, Eugene, was read. In this letter he stated that he would present the Society with a copy of the new publication "Ancient Volcanoes of Oregon," by Mr. Howel Williams, Chairman of the Dept. of Geological Sciences at the University of Calif. A copy of the book which Mr. Erickson had brought with him was examined.

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May R. Dale

GEOLOGY IN THE MEDFORD AREA, OREGON

By
Hollis M. Dole*

This paper is a review of the geology of part of southwestern Oregon as worked out and mapped by Diller, Winchell, Wells, and Wilkinson.** The area described is of special interest because it affords an opportunity to observe the seldom exposed "basement" rocks of the Cascade Range.

The geologic column of this area includes possible Proterozoic, Paleozoic, Mesozoic, and Cenozoic rocks. The Cenozoic rocks are represented in the rocks of the western Cascades and in the sediments and volcanics of Bear Creek and Rogue River valleys. The Mesozoic rocks occur along the southwestern edge of Bear Creek Valley and in isolated spots on the adjacent foothills. The oldest rocks are to the south and west of Medford in the Klamath geomorphic province, and they, in this area, are called the Siskiyou Mountains.

Old schists are found near the California line almost due south of Medford. These schists undoubtedly are some of the oldest rocks in Oregon, although there is no definite paleontological evidence to prove this. They consist of highly altered, crenulated and folded rocks, the most abundant of which are plagioclase-hornblende schists. Sericite and graphitic schists are also common. The plagioclase-hornblende schists are interpreted as highly altered andesite or basalt flows, the sericite schists as altered dacite or rhyolite, and the graphitic schists as altered organic sedimentary rocks. The age of these rocks is Paleozoic or older, and their character indicates both volcanism in Oregon in earliest times and the existence of ancient seas.

Lying unconformably on these rocks is a series of altered volcanic and interbedded sedimentary rocks. Although these rocks are badly altered, the advanced stage of metamorphism present in the old schists is not reached. These rocks are mainly metavolcanics and probably represent former basaltic and andesitic types. Pillow structure and vesicular and porphyritic textures are common. The metasedimentary rocks occur interbedded with the metavolcanics and are lens-shaped - varying from a few yards to several tens of yards across and from a few yards to as much as ten to twenty miles long. They consist of argillites, quartzites, and limestones (some of the limestones could now be called marbles). It is from the latter type of rock that the only fossils have been found. A Paleozoic age (from Devonian to Carboniferous) was first indicated by these fossils, but recent collections cast doubt upon this interpretation. An age as recent as Triassic may be assigned to them. However, a thorough examination of the fauna will be necessary before a definite age can be given.

A group of rocks between the old schists and metavolcanic rocks in degree of metamorphism is represented by contact aureoles around the intrusive masses. These rocks were called the "May Creek schists" by Diller, in the Riddle quadrangle, and the "younger metamorphics" by Wells in the Medford quadrangle. In the Grants Pass quadrangle Wells was able to trace the highly altered facies of the contact zone directly to the less altered metavolcanic and metasedimentary rocks, therefore this intermediate group is considered as part of the metavolcanic-metasedimentary group of rocks.

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*Geologist, State Department of Geology and Mineral Industries. G.S.O.C. lecture, March 25, 1948.

**Bibliography at end of this article.

The enormous quantity of altered lavas in the metavolcanic group indicates another great period of volcanism in the geologic history of southern Oregon. The presence of metasedimentary rocks plus the pillow structure and the calcareous interlayers in many of the metavolcanics indicates deposition in seas.

All the above rocks are intruded by igneous masses ranging from ultrabasic to acidic. From the frequency of the outcrops it is thought that most of the area is underlain at a shallow depth by "granitic" intrusives. Comparing these intrusives with the intrusive sequence in California the peridotites are believed to be the earliest bodies emplaced. These were followed by basic dikes and "granitics" ranging from gabbro to true granite and were intruded in that order. The greatest quantity is granodiorite and diorite. The last phase of intrusion is marked by the aplite and pegmatite dikes. The age of intrusion is from late Jurassic to early Cretaceous.

Most of the mineral deposits of the region owe their origin to this period of intrusion. Chromite is a segregation in the ultrabasic masses, copper mineralization accompanied the basic intrusives, and the gold and silver mineralization accompanied the veins and dikes.

At the northeastern edge of the Siskiyou Mountains in this area and bordering Bear Creek valley to the southwest are spotty occurrences of Cretaceous sedimentary rocks which are referred to the Chico series (upper Cretaceous). Their contact with the older underlying rocks is unconformable. The rocks are mainly sandstones and shales with occasional coarse conglomerate lenses at the base. The conglomerates contain many pebbles from the older formations and are occasionally auriferous. The Cretaceous rocks strike northwesterly and dip at low angles to the northeast, that is, under the Western Cascade volcanics. In many places the sandstones are quite fossiliferous.

Stratigraphically above the Chico is the Umpqua formation. This formation is considered to be of the middle Eocene epoch. Although the Umpqua has a marine fauna elsewhere, most of the fossils found in the Medford area are vegetable remains. It is thought that this indicates deposition in fresh water and that if there was a connection with the Umpqua seas to the north it must have been very narrow and shallow. Many good fossil leaf localities for the Umpqua formation are known in this area.

The Umpqua lies beneath all of Bear Creek valley and extends to the headwaters of the east branch of Evans Creek (about 20 miles northwest of Medford). Like the Chico, its contact with the metavolcanics is unconformable. Sandstones predominate in this formation. The strike of the formation in Bear Creek valley is to the northwest and it has very gentle dips to the northeast. It disappears under the western Cascades on the northeast side of Bear Creek valley.

At the northeast edge of Bear Creek valley (just north of Medford) the Umpqua grades into water-laid volcanics or agglomerates of the Western Cascade volcanics. To the southeast (near the headwaters of Bear Creek) the contact with the volcanics is disconformable, indicating uplift near the California line.

The Western Cascade volcanics, the formations on which the higher peaks of the Cascades such as Mt. McLoughlin and former Mt. Mazama rest, are composed of agglomerates, tuffs, breccias, and associated lava flows. They range in age from at least lower Oligocene or upper Eocene through Miocene. These volcanic rocks are separated by at least two and possibly three unconformities. The dip to the northeast is probably due, at least in part, to diastrophic movements in upper Miocene time.

The upper parts of the valleys of the Rogue River and Little Butte Creek are partially filled with flows of high olivene basalts. These are early lavas of the High Cascades.

Near the junction of Bear Creek with the Rogue River are two flat-topped buttes called Upper and Lower Table Mountains. The flat tops are lava cappings covering Umpqua sandstone. The lava cappings are remnants of more extensive flows and are probably late Tertiary or Quaternary in age.

Along the northeast side of Bear Creek valley are several intrusive masses of diorite and basalt which cut the Umpqua formation and, in the headwaters of Little Butte Creek, are intrusive into at least the lower members of the volcanics of the Western Cascades.

A "rock-hound" or amateur paleontologist visiting the Medford area will find the best collecting grounds in the following places:

Invertebrates - in the Chico sandstone along the southwest side of Bear Creek valley.

Vertebrates - in the placer mining areas. (A few larger bones and tusks have been found in placering but this area is far from being a collector's paradise. If specimens are found, be sure to preserve them immediately.)

Plants - around the "coal measures" in the Umpqua formation on the northeast side of Bear Creek valley and in the volcanic tuffs and agglomerates of the volcanics of the Western Cascades.

Agates - in the Agate Desert just north of Medford. However, this area was pretty thoroughly scoured during the war (it was the site of Camp White) and is not as prolific as it once was. The next best spots are in the stream beds below the green-colored agglomerates north and northeast of Medford. Nice geodes can often be found in the agglomerates near the mouth and along Antelope Creek.

For those who wish to pan for gold, the streams draining the area of the metavolcanics are suggested. And for the more hardy souls who wish to do hard-rock prospecting, the areas adjacent to the intrusive masses are recommended.

For those who wish to fish or just "sight-see" there are many very nice State and National Forest Service roadside camping sites along the Rogue and Applegate Rivers. These, as is well known, are equipped with tables and benches, running water, fireplaces, firewood, and comfort stations.

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Diller, J. S. Mineral resources of southwestern Oregon: U.S. Geol. Survey Bull. 546, 147 pp., 26 figs., 10 pls., 1914.

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LUNCHEON MEETING - FEBRUARY 19, 1948

Dr. Jones started the luncheon meeting off by telling us all what a nice orderly bunch we were. (I was busy eating, that's why it was so quiet)..... There were twenty-three of us present. Dr. Jones welcomed Mrs. Davis, the wife of that famous toastmaster, Mr. Davis. Mrs. Davis is a rather infrequent visitor, and we were glad to see her present.....Two people brought specimens. Dr. Booth sent a specimen around for us all to puzzle over. Originally it had been thought to be a dinosaur bone. It resembled petrified wood, but had a wormlike structure in the center. It was suggested that it might be larva of some wood organism or, perhaps, the structure of a monocotyledon such as a palm of the Jurassic age. Mrs. Barr brought two jaw bones for identification that she had obtained from a kitchen midden at Cape Arago, Oregon. They were identified by Dr. Jones as the jaw bones of a sea lion.....Mr. Stanley told us of the accident that befell Mr. Geary Kimbrell. We certainly extend our sympathy to him and our hope for his speedy recovery.....John Ripley Forbes, speaking of our museum fund, said that the money that our society has pledged was coming in, but, a little slowly. If you haven't sent in your contribution to our share of the booster fund, please do so right away. Just drop your check in the mail or stop by Mr. Forbes' office - the Oregon Museum Foundation - in the Portland Hotel. There are some very interesting exhibits there, too, by the way.....Dr. Jones announced that the annual banquet to be held March 13 would be at Reed College at 7:00 p.m. Precedents have been broken - it's a Saturday night this year!....There was much gay, incidental chatter too, folks, but that just has to be enjoyed in person.

Ellen James and May R. Dale

* * * * *

March 4, 1948

Mr. Davis told of the banquet meeting of the Salem Geological Society..... Mr. Libbey read a letter from John Allen telling about the doings of the Allen family at State College, Pennsylvania.....Dr. Booth had a set of picture post cards from the Allens showing buildings on the campus and views of the surrounding country, with some additional notes on the doings of the family.

H. Bruce Schminky

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LECTURES OF INTEREST

On April 7 at 8:00 p.m., Dr. L. S. Cressman, Department of Anthropology, University of Oregon, will give an illustrated lecture on "Early Man in Oregon," in Library Hall under the auspices of the Oregon Academy of Science.

May 4 and May 6 are the dates of two lectures in the Dr. Condon Series at Library Hall on "General Problems of Human Evolution" and "Evolution of the Human Brain." The speaker is Dr. Franz Weidenreich. The lectures are scheduled to begin at 8:00 p.m.

The next of the Audubon Film Tours will be held on May 10 at 8:00 p.m. in the Benson High School auditorium. Telford H. Work will show colored motion pictures of birds and animals on the islands off the California coast. The title of the lecture is "Bits of Land Along the Coast."

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GEOLOGICAL NEWS LETTER

OFFICIAL PUBLICATION OF THE

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MEMBERSHIP APPLICATION
GEOLOGICAL SOCIETY OF THE OREGON COUNTRY

Qualifications and dues:

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

Date . . . . . .

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

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

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

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

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

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

Sponsored by _____
(member)

_____
(signature)

SOCIETY ACTIVITIES

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

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

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

MAY MEETING ANNOUNCEMENTS

Friday May 14 — "Preliminary report on the geology of the Dayville area of the John Day Valley" by Dr. W. D. Wilkinson, Professor of Geology at Oregon State College.

Friday May 28 — "Geology of Hell's Canyon"* by Ford E Wilson, Corps of Engineers, U.S. Army. Kodachrome movies.

MAY FIELD TRIP ANNOUNCEMENT

Sunday May 23 — Marine Invertebrate Fossil Trip. Leader, Mr. A. D. Vance, MU 5204.

Schedule: Leave New Journal Building, S.W. Front and Yamhill St., at 8:00 a.m. North on Front Street to N. St. Helens Road, then to Scappoose. The group will reassemble at 9:15 a.m. at junction of U.S. Highway 30 and Vernonia road at north end of Scappoose. West on Vernonia road to Pittsburg Bluff (fossil beds of middle Oligocene age). Through Vernonia to Keasey shales (fossil beds of lower Oligocene age) north of Buxton. Stops will be made along way to study geology of region. Ample time for digging and collecting will be allowed. Bring lunch.

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NEW MEMBERS

Mr. and Mrs. Charles O. Conner, 2465 N.W. Raleigh St., Portland, BR 9270
Miss Mary Jane Bigger, 1700 S.W. Broadway Drive, Portland 1.

CHANGE OF ADDRESS

Mr. and Mrs. Ted Gordon, Sr., Route 9, Box 4 P, Salem, Oregon.
Mr. and Mrs. Russell Norton, Box 364, Seward, Alaska.
Mr. and Mrs. Sam Reichen are at Kimberly, Oregon, for several months.
"We miss attending the lectures and are looking forward to when we can again attend."

CHANGE OF TELEPHONE NUMBER

Miss Grace Poppleton, Treasurer, Route 1, Oswego, Oregon, AT 2654.

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W. V. HORTON

Members of the Geological Society extend their sympathy to Mrs. A.W.Hancock whose father, W.V.Horton, passed away unexpectedly on route to Honolulu. Mr. Horton was formerly a member of the G.S.O.C.

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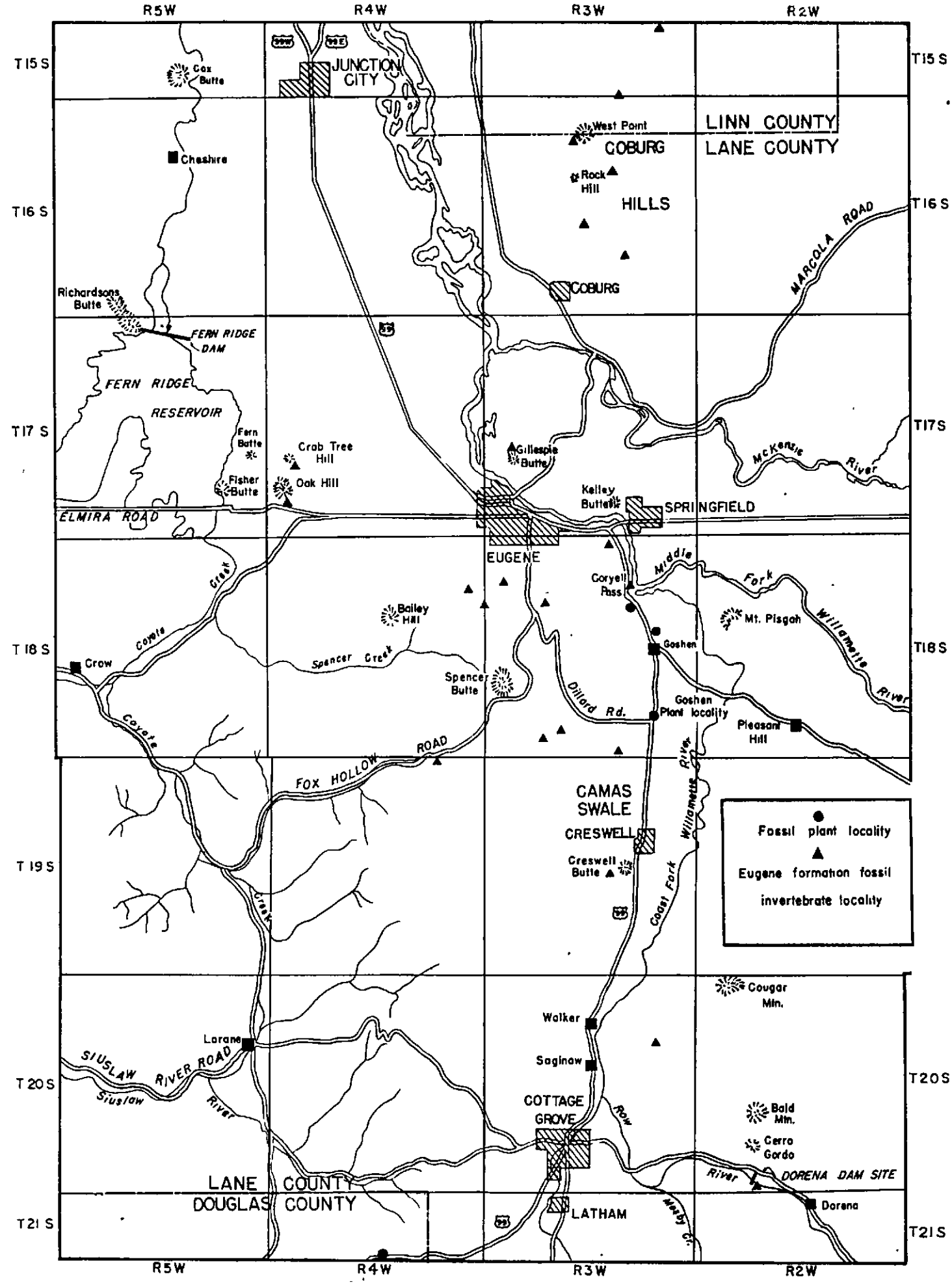
* By advice of Carl Richards and Lewis A. McArthur, the official name is "Snake River Canyon" regardless of what it looks like. (Ed.)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Richardsons Butte
FERN RIDGE DAM
FERN RIDGE RESERVOIR
Fern Butte
Crab Tree Hill
Fisher Butte
Oak Hill
Gillespie Butte
Kelley Butte
SPRINGFIELD
McKenzie River
ELMIRA ROAD
EUGENE
Coryell Pass
Middle Fork Willamette River
Bailey Hill
Mt. Pisgah
Goshen
Crow
Coyote Creek
Spencer Creek
Spencer Butte
Dillard Rd.
Goshen Plant locality
Pleasant Hill
Coyote
FOX HOLLOW ROAD
CAMAS SWALE
CRESWELL
Willamette River
Creswell Butte
Coast Fork
Cougar Mtn.
Walker
Larane
Saginaw
SIUSLAW RIVER ROAD
Siuslaw River
COTTAGE GROVE
Row
Bald Mtn.
Cerro Gordo
DORENA DAM SITE
Dorena
LANE COUNTY
DOUGLAS COUNTY
LATHAM
Mosby Cr.
Fossil plant locality
Eugene formation fossil invertebrate locality

THE AGE AND RELATIONSHIPS OF THE EUGENE AND FISHER FORMATIONS*

By
H. E. Vokes and P. D. Snavely, Jr.

In the January 1947 issue of this "News-Letter" Dr. W. D. Lowry presented a most valuable and concise discussion of the distribution of the Oligocene sediments in the Willamette Valley area. Recent studies by the authors in the Eugene and Cottage Grove quadrangles, under the auspices of the Fuels Section of the United States Geological Survey, have indicated the need of some revision of Dr. Lowry's conclusions relative to this latter area and point to a new interpretation of the relationships of the Eugene and Fisher formations.

In the map accompanying his discussion, Dr. Lowry indicates that the southern margin of the middle Oligocene seaway probably was in the area west of Creswell, tentatively showing it in a broad westward-trending arc beginning immediately west of the well-known plant locality approximately two miles south of Goshen. Following Chaney and Sanborn's (1933) identification of the flora at the Goshen locality as upper Eocene in age and their assignment of the containing sediments to the Fisher formation, that formation has been generally considered to be at least disconformably and probably unconformably below the Eugene formation. The Fisher underlies the Eugene formation along the western margin of the area of outcrop of the Eugene, and the Goshen plant locality is toward the eastern limit. The Chaney-Sanborn interpretation would require either large scale faulting or a synclinal structure of the Fisher; such a structure, however, does not exist. Almost without exception, the dips in the Eugene strata are toward the east and northeast; the only west dips found are associated with minor faults near Kelley Butte, northwest of Springfield.

The general regional dip and strike of the Fisher formation is the same as that of the Eugene formation and west dips are likewise lacking. It is not possible to visualize any type of structure based on the distribution of the Eugene and Fisher formations that would permit the Fisher to be appreciably older than the Eugene, because the formations lie for the most part north and south of each other, and both show strikes that are generally north-south. This conclusion early led the writers to investigate the possible contemporaneity of the two formations, with the Fisher composed of tuffs deposited on shore, at the same time that the sands and tuffs of the Eugene were being laid down beyond the shoreline.

As pointed out by Dr. Lowry the contact between the two formations is marked by an arkosic sandstone in the Eugene that contains much fossil wood at its base. Dr. Lowry considered that this sand represented the basal sandstone of the Eugene, stating that it was "The best stratigraphic and structural horizon in the Eugene formation." Our investigations have led us to conclude that this sandstone represents the shoreline facies between the marine and contimental deposits. It is, in effect, the beach sand marginal to the Eugene sea, and the fossil wood represents accumulations of driftwood similar to those that mark our present-day beaches. On this basis, the arkosic sand loses significance as a structural indicator; stratigraphically, it marks the contact between the continental Fisher formation and the marine Eugene formation.

The discovery of typical Eugene fossils in arkosic sandstone and conglomerate in the excavations for the Dorena Dam, now under construction east of Cottage Grove in sec. 32, T. 20 S., R. 2 W., suggested that there was a tongue of the Eugene extending several miles south and east of its previous known limit. This was confirmed

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*Published by permission of the Director, U.S. Geological Survey.

by detailed mapping of the area to the north and west of the dam; additional fossil localities being found one-half mile east of Creswell Butte in sec. 22, T. 19 S., R. 3 W., and two miles northeast of Saginaw in sec. 11, T. 20 S., R. 3 W. Much of the area underlain by this tongue is covered by the alluvial deposits of the valley of the Coast Fork of the Willamette River and those of the Camas Swale, but the regional trend of the rocks clearly shows that the tongue is an extension of strata that lie in the vicinity of, and to the east of Spencer Butte. These strata lie to the west of and below the tuffs containing the Goshen flora. On this basis, there can be little doubt but that the flora at the Goshen locality is of middle Oligocene age, contemporaneous with late Eugene strata, as was clearly suggested by Turner (1938). Furthermore, the discovery of sandstones of typical Eugene lithology in the hill east of, and overlying beds containing the Goshen plant assemblage, strongly suggests that the flora at the Goshen locality occurs in sediments deposited on-shore during a temporary retreat of the Eugene sea, being a northward-extending tongue of the Fisher formation that overlies the long southward trending tongue of the Eugene.

The general picture of the middle Oligocene events in this area, as the writers interpret them, shows that they began with a restricted seaway, which did not extend as far south as the present area of the Eugene quadrangle. A relatively thin deposit of continental, volcanic tuffs and agglomerates was laid down over the entire region, extending at least as far north as Cox Butte, west of Junction City, in sec. 34, T. 15 S., R. 5 W. Over these lowermost deposits of the Fisher formation the Eugene sea advanced toward the south, the shoreline being marked by a typical transgressive sandstone. In the advancing sea the typical tuffaceous and arkosic sandstones of the Eugene formation were deposited in the shallow, offshore waters. Much of the detail that would permit a more exact mapping of the fluctuations of this shoreline is hidden beneath the thick cover of post-Eugene basaltic flows in the region around Spencer Butte. The presence of the shore-sand in the southeast quarter of sec. 35, T. 18 S., R 4 W., would indicate that the sea reached an area at least two miles southwest of Spencer Butte before it withdrew slightly and then moved southward in a surge that carried it at least twelve miles beyond its former limits to the present site of the Dorena Dam. Only a few feet of fossiliferous strata have been found at that place, and it is certain that this maximum advance was of but short duration, and was followed by a marked retreat that apparently carried almost to the present site of Coryell Pass on U.S. Highway 99, for the shore-facies sand is well-developed a mile south of that area in the northwest corner of sec. 14, T. 18 S., R. 3 W. It was during the interval of this retreat that the tuffs containing the flora near Goshen were deposited some three miles to the south of the shoreline, possibly in a temporary pond or lake into which the fine white tuffs that contain the leaf impressions were washed to form the small lens that is now found interbedded with the more typical, coarser tuffs of the Fisher formation. After this retreat of the sea there was a local resurgence of short duration that served to carry the marine waters at least as far south as the area of the Goshen leaf locality, but probably not much beyond it, before a general regional uplift resulted in the draining of the area for the last time, so far as the preserved record is concerned.

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In the map accompanying his report Dr. Lowry indicates that the eastern shore of the seaway probably passed through the vicinity of Brownsville, in western Linn County. His uncertainty as to its exact location is shown by his use of a dashed line at this point. During a recent visit to the well-known

fossil locality four miles south of Brownsville, Mr. Snavely found a slab of the fine tuff which occurs at that place that contained well-preserved imprints of salt (halite) crystals. The presence of such imprints in a deposit containing typical marine fossils can only be interpreted as indicating shoreline conditions. Dr. Lowry's tentative interpretation of the location of the margin of the seaway in this area may, therefore, be considered as having received confirmation.

Papers referred to:

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FACTORS AFFECTING THE CURRENT SUPPLY AND DEMAND OF PETROLEUM PRODUCTS*

by

Clarel B. Mapes

If you have kept up with your newspaper reading in recent months you may have noticed that several oil companies have had to allocate supplies of gasoline to their jobbers and distributors in twelve midwestern states during a part of this past summer, and that with the coming of winter, some companies, particularly in the north and northeastern states, are also having to allocate supplies of fuel oil and distillates to their distributors.

Before going further, I want to emphasize that the so-called "shortages" are local situations, and you must bear in mind that they have nothing whatever to do with America's reserve supply of crude oil. That is an entirely different question - and there is no "oil crisis."

The present dislocated demand situation is caused in large measure by the fact that the demand for petroleum products has reached record peaks, higher than those of wartime, and that the United States alone is now using as much oil as the entire world used in 1938.

One of the major contributing factors in this tremendously increased demand has been the desire on the part of an ever-increasing portion of our population, and industry, to enjoy not only the benefits of mechanical, and almost labor-free heating with oil, but the benefits of using oil over other fuels in creating energy such as in internal combustion engines of the Diesel type; and also to avail themselves of the lower priced products of petroleum in relation to other fuels. The full force and impact of this trend upon the industry is not only extremely great but is being felt at a time when the industry is still struggling under the accumulated effects of a rigidly controlled wartime economy.

The situation is also due, in large part, to postwar shortages of labor and such raw materials as steel. These shortages have prevented the oil industry from expanding its pipelines, its tank cars, and other transport facilities as fast as the demand for its products has risen. You can see, therefore, that the problem

*Excerpts taken from the article having this title in The Pyramid of Sigma Tau, Winter 1948.

is one of unprecedented demand and localized inability to get products to consumers rather than one of dwindling supplies.

Frankly, I don't think that this indicates an "oil crisis" or anything remotely resembling one. The shortages are temporary and of a regional nature. They do not threaten the country with real hardship. Moreover, the industry is making superhuman efforts to remedy the situation, and I am confident that it will succeed.

These periodic rumors about the country running out of oil are not new. They turn up whenever the slightest dislocation of supply occurs and they form a part of the petroleum industry's history. They cropped up in the first advertisement for an oil product - a patent medicine called "Kier's Rock Oil" - which was published in the early 1850's. This ad warned purchasers to "Hurry before this wonderful nostrum is depleted from Nature's laboratory."

Just fifteen years after the first oil well was drilled in 1859, the state geologist of Pennsylvania estimated that all of America's reserves would be used up within four years. As late as 1922, the U.S. Geological Survey reported that the "recoverable oil remaining in the ground" totaled only nine billion barrels. But in spite of these dire predictions, the United States has produced more than thirty-four billion barrels of oil to date and still has reserves in excess of twenty-four billion barrels. These reserves now stand at a record peak for all time.

Not only that! Geologists are firmly convinced that an additional fifty billion barrels of oil are still waiting to be located. And when that is finally used up, chemists can produce unlimited quantities of liquid fuels from our almost inexhaustible supplies of shale, tar sand, and coal. In other words, our great grandchildren will still have plenty of oil to heat their homes and drive their automobiles.

* * * * * * *

The daily demand for oil this year is 482,000 barrels higher than it was last year! The industry is thus required to supply 5,508,000 barrels of oil products every day making a total load that would stagger the proverbial Atlas himself.

* * * * * * *

As I said before, this demand can be, and will be, met. Actually, the supply of oil from American wells, plus imports, will average around fifty thousand barrels daily in excess of estimated demand. A recent survey showed that refining capacity is ample to process all of this. In addition, the industry has substantial inventories of products already refined upon which it can draw in a pinch.

The indicated new supply of oil (technically stated: the supply of liquid petroleum hydrocarbons) appears to be entirely sufficient to meet the normal demands in 1947. On the other hand, there may be local areas in which supplies may not be sufficient to meet all demands; and this will be particularly true if abnormally cold weather prevails this winter. Here is how the foreseeable new supply is made up:

Production of crude oil in the United States currently is running at the daily rate of about 5,229,000 barrels (average for the four weeks ended October 18, 1947). To this crude production is to be added approximately 356,000 barrels daily of other liquid hydrocarbons - natural gasoline and benzol - and customary

imports of heavy fuel oils and crude oil. These imports are expected to average 453,000 barrels a day, and, with crude production averaging 5,040,000 barrels a day for the full year of 1947, and other liquid hydrocarbons averaging 356,000 barrels a day; an aggregate supply of about 5,849,000 barrels is available to meet estimated normal demand of 5,803,000 barrels a day average for the full year.

There is one "bottleneck" in the whole picture - that is transportation. This "road block" applies only to certain areas of the country, and it is caused by the fact that facilities for gathering, transporting, and distributing gasoline and other oil products are simply inadequate to meet peak requirements. That is true even though such facilities are being used at maximum to serve the public, government, and industry. Therefore, temporary exhaustions of oil products might arise in some local areas. In fact, despite the best efforts of the industry, there is a potential danger of temporary "tight" supply during the next six to eight months - that is, until the necessary additional transportation and other facilities can be placed in service.

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A "PICK-UP"

There was a woman who returned home wearing one of those millinery creations that cause the male human to writhe, and gasp for breath. When questioned by her husband as to the use and origin of the revolting creation, told him gaily: "You know, Edward, whenever I get down in the dumps I pick me up a new hat"; to which the callous grouch replied: "I have wondered for some time just where you got the infernal things."

And then, again, there was the editor of the News-Letter, who, somewhat dazed by the information that he must take up the burden of sifting and dispensing items of interest to the members of the G.S.O.C., conceived the idea that a new typewriter might salve his feelings and stimulate his sagging spirits, entered Portland's Own store with the avowed intention of "picking up" one of the latest creations for mechanical writing, only to find that e v e r y s i n g l e machine on the counter was securely chained to its place! Muttering imprecations on the management that wouldn't trust the public, which by the management's own statement "is always right," and upon his own carelessness for coming to town without his wire-cutting pliers, he walked morosely out into the cold March winds.

O.E.S.

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LUNCHEON NOTES - February 26, 1948

The meeting was opened by Dr. Jones with 23 members and guests present..... Samples passed included petrified wood from Arizona by Mrs. Sunderland; allanite, a rare mineral, by Mr. Libbey; some very pretty mineral collections by Mr. Minar; and a dinosaur bone by Dr. Booth.....Mr. Erickson brought on a discussion of mounds by presenting an article on the formation of mounds by glaciers..... Mr. Forbes described the colored movies on museum activities which will be shown at the next evening meeting.....Franklin Davis gave out the dope on what is in store for the annual banquet.

T. C. Matthews

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DIARY OF A VOLCANO

The daily diary of a volcano is being received by the Smithsonian Institution.

When the great new volcano Paricutin suddenly burst forth in a Mexican cornfield five years ago, among the earliest observers was Dr. William F. Foshag, Smithsonian curator of mineralogy.

Among his native aides was an Indian farmer named Celadonio Gutierrez, a man of education whose farm had been buried under lava. Foshag was impressed with the interest Gutierrez took in minute details--the extent of flow from day to day, curious lava formations, colors, and the like.

Since then the Indian has never missed a day. He has been given a job as caretaker of a small observation station set up by the Geological Society of America. Each month Dr. Foshag receives a copy of his diary.

Gutierrez' observations in some ways are better than those of a professional geologist, Dr. Foshag says. He is essentially ignorant of science and so has no preconceived ideas. A better-trained man would be inclined to watch for things he expected to happen. The Indian is concerned only with what does happen with no ideas as to its significance. He reports voluminously and accurately what he actually sees.

The volcano continues active, and the depth of lava in the immediate vicinity now has reached a thickness of 1,000 feet in places.

The Smithsonian Institution

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LUNCHEON MEETINGS

March 11, 1948

The record of the March 11th luncheon shows only that W. A. Reeves was able to get in from Salem and that Director C. M. Wheeler brought his son as guest.

* * * * *

March 18, 1948

Twenty-six members were present.....President Libbey passed a copy of Howell's Oregon Volcanoes around for inspection.....Orrin Stanley had prints from his annual banquet negatives.....A copy of Pacific Pathways was also shown by an unrecorded exhibitor....Also unrecorded is the owner of a piece of petrified wood from Sweden. (Poor reporting, I calls it).....President Libbey announced Orrin E. Stanley as the editor of the Geological News-Letter for the next year, with Margaret Steere as assistant editor; Ellen James as program chairman. He asked for volunteers for Trip Chairman and for Service Chairman.

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LIBRARY HAS FIRST VISITOR

Four years after it was transferred to the State Department of Geology, the GSOC Library had its first visitor on March 23. The Library, crowded into two glass cases has been kept in excellent shape by Miss Hughes who spends several hours every month cataloging the new material and reorganizing the older acquisitions. It is to be hoped that another four years will not elapse before a second visitor inspects the library.

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THE POT-LUCK DINNER AND AUCTION

About sixty hungry geologists assembled in the Sunday School room of the Unitarian Church, S.W. 12th Avenue and Taylor Street on Thursday evening, April 22, for their potluck dinner, after which they entered into spirited bidding on various geological specimens, books, plants, and a lovely photograph made by Louis Rydell. Sometimes the bids were raised five cents at a time, while on other articles they were spaced farther apart in the price scale. The auctioneers, Lloyd Ruff, Earl Minar, Claire Kennedy, and Leo Simon worked valiantly, but the Scotch instincts of the audience kept the score below a dollar a minute, the total amount collected being $156.35. Grace Poppleton, the treasurer, and her mother, Mrs. R.R.Poppleton, did valiant service in handling the cash brought to them by the salesmen. The proceeds from the sale were for the benefit of the promotion fund for the museum.

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LUNCHEON MEETING - MARCH 25, 1948

Twenty-nine members and six guests were present on this date.....President F. W. Libbey, with the able assistance of vice-president Leo Simon performing on a cup with his fork to secure attention, conducted the meeting.....Dr. Ewart M. Baldwin called attention to a specimen which he thought contained barium carbonate or witherite.....Dr. Edwin T. Hodge spoke about a rock from New Mexico, brought by Ada Henley, which he thought (not having had a chance to make a laboratory examination of it) contained some sphalerite, some stibnite - a kind of cervantite - and possibly some quartz.....Dr. Arthur C. Jones brought a specimen that was said to have come from Nome, Alaska, which he had been told was a part of a musk ox horn, but which he thought was more likely to be from a giant bison, a mastodon or a mammoth, probably from the early Pleistocene.....Dr. John C. Stevens had just returned from the region of The Egg and I where he had visited the site of an old furnace which in 1807 to 1810 had produced from 500 to 600 tons of iron a day using the local bog iron at first and later importing hematite from China. Samples of both ores were shown. He also brought greetings from John Robinson, a former member of the GSOC.....This reporter is puzzled to understand why some men who go to great expense and trouble to acquire a degree of doctor of this or that, still are in some doubt as to the identity of a rock specimen which almost any day laborer would name with great assurance at first glance.....Miss Henley introduced Donald O'Connel, a former junior member of the society.....Chet Wheeler presented J. Carroll Foster, an electrical engineer.....Dr. Jones introduced his daughter, Ardis, and her newly acquired husband, Donald McKay; also two of his cousins, Larry and Allan de Laubenfels, whose grandfather, Lynds Jones, taught at Oberlin the first course in ornithology presented in the United States..... Dr. Baldwin introduced Samuel C. Sargent, student in the Department of Geology at Oregon University.

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BINDING OF BULLETINS

Business Manager Raymond L. Baldwin says that the deadline for getting your volumes of Geological News-Letter bound at the present all-time low price is fast drawing near. Pull out all staples, arrange the sheets in proper order, and rush the packages to Mr. Baldwin right now if you are interested.

Mr. Baldwin says that he is also in need of Volume 13 of the News-Letter to fill an order. If you have this volume to spare, please phone Mr. Baldwin, CH 1452, evenings.

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PAY YOUR DUES

If you do not have a membership card saying "Dues Paid to March 1, 1949" it is time to hand $3.50 to Miriam Shepard, Secretary, without further delay.

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LUNCHEON NOTES

April 1, 1948

In the absence of President Libbey, Vice-president Simon arrived just in time to call the meeting to order before Secretary Shepard was overcome by nervousness lest she should have to preside. There were twenty members and two guests present. The guests were Thomas H. Hite of the U.S. Geological Survey and Eleanor Rawlings, a guest of Mella White. Emily L. Marshall, who has not been a frequent attendant at the luncheons, came with Mrs. Jones. A sample of perlite from Arizona, brought by Miss Henley, was the only specimen presented for inspection.

* * * * *

April 8, 1948

Seventeen people and no specimens appeared at this meeting.....Vice-president Leo Simon arrived in time to take charge of the meeting, but it interfered with the consumption of his food.....Announcements of meetings and the trip up the Columbia River Gorge - all accomplished before the printing of this item - were made.

* * * * *

April 15, 1948

Twenty-two members (no guests) were present. F. W. Libbey presiding. Leo Simon had a specimen of shattuckite from Bisbee, Arizona.....Mr. Libbey had a specimen from Birmingham, Alabama, which both he and the editor failed to record. ....Mr. Matthews spoke about the permafrost of the Arctic regions.....Miss Hughes branched off into the realm of the supernatural by showing one of her much-prized glasses which had "exploded" while standing on the shelf under conditions to which it had been accustomed for many years. Perhaps this was simply an inanimate demonstration of the tensions which build up in personal relations between members of a community or a family until they are no longer tolerable. Dr. Stevens thought that the glass may have been tempered, as tempered glass has been known to break twenty-five or thirty years after it had been made. Mr. Simon told of a glass of water standing near a crystal radio set which broke when the set was tuned to a certain station.....Miss Henley said that a part of the case of her sister's sewing machine motor had broken out with no apparent cause. Mr. Bates thought that this might have been caused by the substitution of a ten-penny nail for the standard fuse in the electric circuit. Dr. Stevens then told of a very serious "blow-up" of the Cazedero electric plant when something got into the controller so that the machinery kept going faster and faster until it flew apart from centrifugal force. And on that bright note the meeting adjourned.

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GEOLOGICAL NEWS LETTER

OFFICIAL PUBLICATION OF THE

VOL. 14 NO. 6 PORTLAND, OREGON June 1948

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MEMBERSHIP APPLICATION
GEOLOGICAL SOCIETY OF THE OREGON COUNTRY

Qualifications and dues:

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

Date . . . . . .

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

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

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

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

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

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

Sponsored by _____
(member)

_____
(signature)

SOCIETY ACTIVITIES

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

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

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

JUNE MEETING ANNOUNCEMENTS

Friday June 11 — No meeting.

Friday June 25 — "The Palouse Country" - Illustrated lecture by W. A. Rockie, U. S. Soil Conservation Service.

FIELD TRIP ANNOUNCEMENTS

Sunday June 20 — Trip to Molalla fossil area. Itinerary not yet completed. For information about the trip call Leo Simon, trip chairman, BE 0300 or LA 0549. Group will meet at Front and Yamhill Streets at 8:00 a.m.

Sat., Sun., and Mon. July 3,4,5. Field trip to the upper McKenzie River (joint sponsorship with the Eugene Obsidian Club). This is the trip which was scheduled for last October and was cancelled. See your October 1947 News Letter for description of trip.

The group will meet at the Eugene Obsidian Club's cabin at 8:00 p.m. Saturday, July 3. Cabin is located at old Belknap C.C.C. Camp about 2 miles above McKenzie Bridge.

Reservations at Belknap Springs Inn or at Log Cabin Inn at McKenzie Bridge probably not available, but try it at your own risk. Otherwise bring your own bed roll and food. The Obsidians are providing sleeping quarters.

Register with Leo Simon, BE 0300 or LA 0549, by June 25th so that transportation and sleeping quarters at the Obsidian cabin can be arranged.

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NEW MEMBERS

		Phone
Miss Ruth Dodge	4206 N. Vancouver Ave., Portland,	TR 6303
Mr. and Mrs. T. A. Crump	1624 N.E. 56th Avenue, Portland 13,	
Mr. and Mrs. M. C. Yeager	4206 S.W. Sunset Road, Portland 1,	BE 7752
Glenn Crawford Hazelhurst	818 N.E. Floral Place, Portland 13,	MU 1042

CHANGE OF ADDRESS

Mr. and Mrs. J. Martin Weber, Box 695, Crestline, California
Mr. and Mrs. Ray E. MacKenzie, Route 3, Box 19, Portland 22, Oregon
Mr. and Mrs. E. Clyde Woodard, 107 N. E. 192 Ave., Portland 16, Gresham 3246
Mr. and Mrs. Virlis L. Fischer, 420 N. W. Skyline Blvd., Portland 1

RESIGNATIONS

Mr. and Mrs. Paul A. Schafer, 1600 S.W. Davenport St., BR 4054, are leaving Portland and have resigned. Leaving in June.

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"THE NEW LOOK"

Address* by President F. W. Libbey

First, I am very appreciative of the honor of serving as President of the Society, and I shall do my best to emulate those very capable officers who have preceded me. Year after year I have been in attendance at these annual banquets sitting among you (where I should probably be now) and have heard the speakers - presidents, toastmasters, and the main speechmakers - give bright and witty or perhaps learned talks, as the case required. I have been projected into this illustrious company of predecessors, and I feel unprepared and unqualified. The Nominating Committee should have inquired about this oratorical shortcoming of mine, which reminds me that this surely is a democratic organization in that the office certainly seeks the man; the man does not seek the office.

You probably feel that the title handed me should be a "natural" for humorous comments. There certainly have been thousands of them made, written, and radioed. The subject title is alluring - looks well on the program - the lack lies with the speaker.

Now I would like to make a few comments concerning the Society.

Although it is highly desirable to increase membership, I do not think we should seek to accomplish this just for the sake of adding numbers. We should, I believe, try to maintain the standard of membership literally as set up in the By-Laws - that is, an applicant should be sincerely interested, and desire to study geology, not just be concerned with entertainment. I am hoping that we shall be able to find some way of enlisting the interest of more young people. We need them in our group.

Our lecture programs should be aimed at definite geological subjects and not for the most part at a showing of pictures unrelated to geology or science studies - with this exception, that programs of pictures taken by our members on trips are decidedly worthwhile. Such pictures should provide plenty of field for geological comments anyway, as well as showing interesting travelogues.

It is possible that we might increase attendance and interest in our luncheons by having regular speakers who would give short talks of, say, ten to fifteen minutes in length on matters of general interest. The Executive Committee and the membership will be asked to pass on this idea.

As Dr. Jones said at the banquet last year, we should endeavor to increase attendance on our field trips, for this activity represents one of the essential functions of the Society. Here I wish to say something that is well known but needs repetition. When members of an organization lose the desire to participate actively and constructively in the work of that organization, it becomes static and decay begins. Don't leave all activities to a few of the old-timers. You will gain, as will the Society, if you take on some of the work of the Society. The Executive Committee would surely welcome volunteers.

I feel also that there is a great need for the maintenance and support of an active research project. The field for service and accomplishment here is unlimited. I realize the lack of time for such work by many of our members, but perhaps we can select some project and make a start, at least, this year.

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*13th Annual Banquet, March 13, 1948.

It is my belief that members would gain much more, as would the Society, if they would select one branch of geology for their special study - that is, make it their hobby. There are so many branches to choose from; I will not enumerate them. But don't just drift along attempting to absorb geological knowledge by association with other members. Select a special subject which interests you and start to study it seriously. It will repay you many times.

This Society has many unique characteristics. People do not join to better themselves, materially or socially. Their interest lies in seeking the whys and wherefores of this earth, that from which we came and to which we shall return. We seek reasons for the hills and valleys, the rivers and the lakes. We search for evidence of past life in rocks, many millions of years old, that we may assemble the evidence and thereby place the rock in its proper niche in geologic history. We trace faults and fissures, and marvel at the immensity of the forces which caused folding and crushing. We study mineral veins, coal beds, and weathering processes; and we look with awe on the wonders of volcanism beyond our comprehension to realize fully. In all we see a definite plan, a thing of beauty, one in which we, for a brief moment in geologic time, have a glimpse of God's infinite, inexorable system. I want to read a quotation which Howel Williams has used in his recent paper, "The Ancient Volcanoes of Oregon," which you will recognize as the title of his Condon lecture. He makes the prefacing remark that, "The face of the earth is forever changing," and then quotes:

"The hills are shadows and they flow
From form to form, and nothing stands;
They melt like mists, the solid lands,
Like clouds they shape themselves and go."

And now my time has run out without your hearing any sparkling comment on the new look; but I will tell you what I am willing to do. I shall generously bequeath this title - lock, stock and barrel - to my successor. He, or perhaps she, is somewhere in this room and will have a whole year in which to think up witty things to say on this intriguing subject at the next banquet.

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THE THIRTEENTH ANNUAL BANQUET OF THE GEOLOGICAL SOCIETY OF THE OREGON COUNTRY

Reed College Commons was filled to capacity by members and guests of the Geological Society of the Oregon Country on the occasion of its thirteenth annual banquet under the direction of Mrs. Adolph Weinzirl, banquet chairman. Leo Simon, in charge of ticket selling, had all available tables filled; the decorations committee had done itself proud with flowers, photographs, and society emblems artistically placed; and the necessarily late time of the meeting insured good appetites for the excellent dinner served by competent waitresses.

After greetings by President Arthur C. Jones, toastmaster Franklin L. Davis took charge. Mr. Davis introduced out-of-town guests and several of the local notables, presented the outgoing and incoming presidents, who made brief addresses, and then introduced the speaker of the evening, Dr. L. S. Cressman, who gave an illustrated talk on "What an Archeologist Does" as well as what he and his assistants see in the neighborhood of their "diggings."

Owing to the lateness of the hour, the stunts which had been cleverly conceived and rehearsed were postponed to some future time. It is hoped that future banquets may be able to have the use of a dining room that has not had to serve a regular evening meal before admitting the GSOC for its dinner and program.

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ANNUAL REPORT OF G.S.O.C. LIBRARY

This report covers the period from March 14, 1947, to March 13, 1948. The following list includes the books, bulletins, reports, and miscellaneous publications added to the shelves of the library during the past year.

From

Dr. and Mrs. Courtland L. Booth, January 1948:

See Your West. Vol. 2. A set of eighty kodachrome pictures/outstanding beauty spots of the west, with a descriptive sketch of each, issued by Standard Oil Company, California. The collection compiled and presented to the G.S.O.C. Library in handsome binding. It is a companion reference volume to Vol. 1, a gift previously made by Dr. and Mrs. Booth.

E. N. Bates:

North American Fauna. U.S. Dept. Agriculture Biol. Survey Bull. 27, October 26, 1908.

Mrs. E. M. Barr:

Contribution to Pennsylvanian Paleobotany, by James N. Schopf. Illinois Geol. Survey Rept. Inv. 75, 1941. Urbana.

Kenneth Phillips:

Paricutin Volcano - Cataclysm in a Cornpatch. California Univ. Public Information, Radio Service.

Mary Ada Henley:

Extracts from The Rock Book, by Carroll Lane Fenton and Mildred Adams Fenton. Extracts selected and typed by Miss Henley.

State Department of Geology and Mineral Industries:

Bibliography (Supplement) of the Geology and Mineral Resources of Oregon, by John Eliot Allen. Oregon Dept. Geology and Min. Industries Bull. 33. 1947.

Mines and Prospects of the Mt. Reuben Mining District, by A. E. Youngberg. Oregon Dept. Geology and Min. Industries Bull. 34, 1947.

The Ore.-Bin. Vol. 9, Nos. 3 to 12, 1947; Vol. 10, Nos. 1 and 2, 1948.

Geological Society of the Oregon Country:

Offical bulletin of the Society, the News-Letter, in two bound copies, 1947. One for circulation service and one as a reference copy.

Hawaii Division of Hydrography:

Bibliography of the Geology and Water Resources of the Island of Hawaii, by G. A. MacDonald. Hawaii Div. Hydrography Bull. 10, 1947.

Geology and Ground-Water Resources of the Island of Molokai, Hawaii, by H. T. Stearns and G. A. MacDonald. Hawaii Div. Hydrography Bull. 11, 1947.

From

Salem Geological Society:

The Geode. Official bulletin of the society. Vol. III, Nos. 3, 4, 5, 6, 7, 8, 9, 10, 1947, and Nos. 11 and 12, 1948.

California Federation of Mineralogical Societies, Bakersfield, California:

Mineral News and Notes. Bulletin published monthly. Complete set of copies for past year.

Mazamas:

Mazama. December 1947 number.

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

Ward's Natural Science Bulletins. Number complete for past year.

Miscellaneous publications:

Catalog of one hundred Minerals, Rocks, and Fossils from Oklahoma, by W. E. Ham. Oklahoma Geol. Survey, 1942.

Fossils - a Story of Rocks and their Record of Prehistoric Life, by Harvey C. Markham, 1945. Colorado Mus. of Nat. History, Popular Series No. 3.

Ancient Man in North America, by H. M. Warthington, 1944. Colorado Mus. of Nat. History, Popular Series No. 4.

Dawn Horse or Eohippus, by Chester Stock. Reprint from Engineering and Science Monthly, vol. 10, no. 4, pp. 4-5.

Relationship of Scenery to Geology in the Grand Canyon, by John H. Maxson. Reprint from March 1948 issue of Engineering and Scenic Monthly.

New World Man, by J. D. Figgins. Colorado Mus. of Nat. History Proceedings, vol. XIV, no. 1, 1935.

A further Contribution to the Antiquity of Man in America, by J. D. Figgins. Colorado Mus. of Nat. History Proceedings, vol. XII, no. 2, 1933.

Our Greatest National Monument. From National Geographic Magazine, vol. 40, no. 3, pp. 219-244, 1921.

Trade Catalogs:

Minerals, Rocks, and Fossils. Ward's Natural Science Institute, 1947.

Gems and Crystals. D. V. Hill, 1947.

There has been no definite effort made during the year ending March 13, 1948, to stimulate the growth of the library as the shelf space is now too limited to allow an orderly arrangement of shelf material. There are valid reasons at the present time why another bookcase should not be added to the library equipment.

March 13, 1948.

Respectfully submitted,
Margaret Hughes, Librarian.

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ANNUAL REPORT OF THE TREASURER YEAR 1947-1948

February 29, 1948

March 1, 1947, Balance on hand			$402.35
INCOME - March 1, 1947, to February 29, 1948			
Memberships 1947-1948		343.75	
" 1948-1949 Prepaid		77.50	
		$421.25	
Less Refunds on 1947-1948 overpayments		1.00	420.25
Detail as follows:			
70 renewals @ $3.50	245.00		
17 new @ 3.50	59.50		
9 renewals @ 2.50	22.50		
1 new @ 2.50	2.50		
3 Junior new 1.50	4.50		
1 " " 1.00	1.00		
1 new @ 1.75	1.75		
3 renewal @ 2.00	6.00		
	342.75		
1948-49 Prepaid			
17 renewals @ 3.50	59.50		
3 renewals @ 2.50	7.50		
3 new @ 3.50	10.50		
	77.50		
News Letter subscriptions		17.20	
1947 Banquet Receipts		200.90	
Oregon Museum Foundation Fund		15.00	233.10
			$1,055.70
EXPENSES			
News Letter	190.97		
Stat'y. Printing & Postage	7.15		
Banquet Expense 1947	286.75		
" " 1948	50.00		
Lecture Expenses	47.23		
Misc. Expenses	35.86		
Refund to Oregon Museum Fund	15.00		632.96
Balance on hand February 29, 1948			$422.74

RECONCILIATION

Mar. 1, 1947, Check Book balance	$402.35
Deposits Mar. 1947-Feb. 29, 1948	654.35
	1,056,70
Less Checks Mar. 1, 1947-Feb. 29, 1948	633.96
Check Book Balance, Feb. 29, 1948	$422.74

Respectfully submitted,
/s/ Grace M. Poppleton, Treasurer

April 10, 1948.
I have audited the books for the Society and have found them correct as stated in this report.
/s/ Leslie W. Bartow

February 29, 1948

Pre-Closing Trial Balance

	Debit	Credit
United States National Bank	$1,056.70	$633.96
Memberships	1.00	421.25
News Letter	190.97	17.20
Lecture Expenses	47.23	
Banquet Expenses	336.75	200.90
Postage Stat'y and Printing	7.15	
Misc. Expenses	35.86	
Multigraph	359.31	
Furniture & Fixtures	35.05	
Oregon Museum Fund	15.00	15.00
Surplus		796.71
	$2,085.02	$2,085.02

Post-Closing Trial Balance

ASSETS		LIABILITIES	
United States National Bank	422.74		
Furniture & Fixtures	35.05	none	
Multigraph	239.54	Surplus	697.33
	$697.33		$697.33

Respectfully submitted,

/s/ Grace M. Poppleton, Treasurer

****

1947 - SERVICE COMMITTEE REPORT

During the past year the service committee gave the society members the following service:

23 - Grand Coulee, from Hell to Breakfast, by Fred O. Jones
4 - Chico-pans, from A. O. Bartell
1 - Wild Flowers of the Pacific Coast, by Haskin.
4 - Adventure in Jade, by Kraft.
59 - Royal Bronze Figures.
3 - Coming of the Pond Fishes, by Lampman.
1 - Indian Relics of the Pacific Northwest, by Seamon.
2 - Willamette Landings, by Cornir
1 - Pliocene Flora of California and Oregon, by Cheney.

/s/ Leslie W. Bartow
Chairman, Service Committee

****

REPORT OF FIELD TRIP COMMITTEE
For period March 1, 1947, to February 29, 1948

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

No. 1.	March 2, 1947 - Earl Minar-	Portland Marble Trip.
No. 2.	" 23, 1947 - Norris B. Stone -	Oswego-Willamette Meteorite-Tonquin.
No. 3.	April 27, 1947 - Earl Minar-	Scappoose-Pittsburg Bluff-Vernonia
No. 4.	May 18, 1947 - Rudolph Erickson -	Oregon City Petroglyphs.
No. 5.	June 8, 1947 - Dr. Ewart M. Baldwin-	Dallas-Valsetz.
No. 6.	July 4-6,1947 - Dr. T. P. Thayer	"Fault Finding in the John Day Country."
No. 7.	Aug.23-24,1947 - John W. Robinson	"Limping along the Olympics."
No. 8.	Nov. 10, 1947 - H. Bruce Schminky -	"Portland Foundations."(West side section)
No. 9.	H. Bruce Schminky -	"Portland Foundations."(East " "

A trip to continue the "Portland Foundations" trip on up into the Columbia Gorge has been suggested to be lead by Mr. Schminky.

For our John Day Trip, Dr. Thayer gave an innovation to well-handled and planned trips. Our June News Letter gave his instructive agenda of the trip to come. Ages and Epochs in chronological order with formations we would encounter, together with cross sections of the Aldrich and Strawberry Mountains, gave ample time for studying to those who wished. A very detailed itinerary let everyone, especially late comers, know just where the caravan was at all times. Timing was just on schedule, and the trip in all phases was very ably handled by Dr. Thayer. Your committee took this as a guide, pre-arranging later trips accordingly.

A trip to the "UPPER MCKENZIE" slated for October 11 and 12, to have been led by Dr. Warren D. Smith and Hugh Currin, ran into an "E. Jupe Pluvius" trap. Pouring rains made roads unsafe for a caravan. On advice from the Supervisor of the Forest, the trip was cancelled. But Jupe must have chuckled, for Saturday and Sunday were gorgeous days. Two of our members, Orrin Stanley and Leo Simon and family, made it anyway and reported a very successful time.

This trip was all set up in fine style in our October News Letter and it has been very well suggested that it be included in our coming season's agenda.

Respectfully submitted,
Norris B. Stone
Trip Chairman

****

APPOINTMENTS MADE BY THE EXECUTIVE COMMITTEE OF THE GEOLOGICAL SOCIETY

News - Letter Staff

Editor-in-chief	Mr. Orrin E. Stanley	Assoc. Editors
Assist. Editor	Miss Margaret L. Steere	Mr. Lloyd L. Ruff
		Mr. A. D. Vance
Business Manager	Mr. Raymond L. Baldwin	Mr. H. B. Schminky
		Mr. Kenneth N. Phillips
Assist. Business Manager.	Mr. Chester A. Wheeler	Dr. W. Claude Adams
		Miss Marian Glaeser

Committee Chairmen

Program . . .	Miss Ellen James	Publicity ..	Miss Ada Henley
Trips	Mr. Leo F. Simon	Telephone .. Social	Mrs. Adolph Weinzirl
Membership .	Mrs. Mildred P. James	Historian	Mrs. Amza Barr
Picnic . . .	Mr. Franklin L. Davis	Public Relations	Mr. C. D. Phillips
Research . .	Mr. A. D. Vance	Audits	Mr. Leslie W. Bartow
Banquet . . .	Mrs. Arthur Jones	Work Night	Mr. A. W. Hancock
Service . . .	Mr. Rudolph Erickson	Nominating	Mr. Kenneth Phillips
Library . . .	Miss Margaret Hughes		Mrs. Lloyd Ruff
Museum . . .	Mr. J. C. Stevens		Mr. Rudolph Erickson
			Miss Glenna Teeters
			Mr. A. D. Vance

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PROGRAM FOR THE CONVENTION OF THE NORTHWEST REGION OF THE ASTRONOMER'S LEAGUE

To be held at Lewis and Clark College, Portland, Oregon, Saturday and Sunday, June 12 and 13, 1948.

Saturday-June 12

1:30 p.m. Convention opens.
1:30 p.m. Registration, Bodine Science Bldg., Lewis & Clark College.
2:30 p.m. Session for papers, room 10, Science Bldg.
4:30 p.m. Exhibits open, room 18, Science Bldg.
5:30 p.m. Banquet, Dining Hall, Lewis & Clark College. Business Meeting, Election of permanent Regional officers during banquet. Group picture taken in dining hall.

8:15 p.m. Lecture "Some Problems of the Motions of the Stars," by Dr. R. M. Petrie, Assistant Director of the Dominion Astrophysical Observatory, Victoria, B.C. Held in Library Hall of the Main Central Library, S.W. 10 Avenue and Taylor Street, Portland, Oregon.

Sunday-June 13

2:00-4:00 p.m. Exhibits open, Science Bldg., Lewis & Clark College. Discussion of League Problems and business matters that may not have been covered the previous evening.

3:00 p.m. Conducted tours of the Campus of Lewis & Clark College including a visit to the Evan's 12-inch reflector constructed by the late Guy Evans and presented to the college by Mrs. Guy Evans.

6:00 p.m. Adjournment of the Convention.

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LUNCHEON NOTES - April 22, 1948

Twenty-five members and two guests braved wind and rain to meet for luncheon in the Chamber of Commerce Board Room on the 22nd of April.....Specimens were shown as follows: Wulfenite, said to be no longer available at the mine and therefore quite valuable, orthoclase from the Black Hills, South Dakota, and cryolite from Greenland, by President Libbey; the uranium minerals, pitchblende from Bohemia, torbernite from Australia, and carnotite from Utah by Tom Matthews; hematite with calcite from Eagle Bar, Adams County, Idaho, by Ellen James; and a piece of fossil coral (Astreopora Occidentalis Nomland) by A.D.Vance. .....Franklin L. Davis told of the opportunity to secure framed photographs of Dr. Condon at $1.50 each. He had no book to be returned to the Library..... J. R. Forbes handed each person a neat yellow card with blank spaces for entering the amounts the various signers wished to pledge to the Museum Building Fund, with the added note that the amounts would not be payable until the entire sum of $350,000 was subscribed. He also announced that the final Audubon Screen Tour would be shown at the Benson High School auditorium at eight o'clock P.M., May 10. .....Ellen James called attention to the Condon lectures to be given on May 5th and 6th.....Chet Wheeler introduced his daughter, Frances Maggard, and Ellen James presented her guest, Lois M. Goodhouse.....Carl and Florence Richards from Salem were present. Carl is campaigning to have the name "Hell's Canyon" discontinued, and the correct name: "Snake River Canyon" used.

* * * * *

May 6, 1948

The twenty-three members who met in the main dining room of the Chamber of Commerce on May 6th found difficulty in hearing each other speak since the overall noise from other enthusiastic groups reverberated annoyingly.....The Secretary had a letter from Harris Huggins of Parkdale enclosing his subscription to the Geological News Letter. He had enjoyed the trip through Columbia Gorge on April 25. .....Mr. Erickson had a piece of wood from a well at the new Oregonian building that came from a bed of sand between two layers of basalt about 350 feet below street level.....Miss Henley circulated a specimen but neglected to note it in the "register" and it failed to reach the editor.....Dr. Booth had several specimens from Afghanistan, some of which were thought to be rose quartz, malachite, and tourmaline. He reports that Mrs. Booth is slowly improving.....Ruth E. Hopson called attention to Philip Parrish's book, Historic Oregon. President Libbey appointed a committee to determine, if possible, the authenticity of some of the statements concerning "geology." .....John Ripley Forbes read a statement of the various drives for funds by Oregon Museum, Inc.....Dick Anderson told of the interesting work he has been doing in Columbus, Ohio.....Ellen James announced the next two lectures, one of which is about the Snake River Canyon, which, if we are not mistaken, the young lady very distinctly called Hell's Canyon.....Leo Simon announced the May 23rd trip which will reassemble at Scappoose and travel through Vernonia and Buxton searching for invertebrate fossils.

****

M E N U

Vegetable salad — French dressing

Prime rib roast beef

Baked stuffed potatoes

Peas

Hot rolls — Butter

Apple pie a la mode

Coffee

———****———

P R O G R A M

GREETINGS		President A. C. Jones
Toastmaster		Franklin L. Davis
De Re Geologica		Song by group
New Look	for	The Old
1948 Mr. F. W. Libbey		1947 Dr. Arthur C. Jones

"What an Archeologist Does"
by
Dr. L. S. Cressman
Head of the Department of Anthropology
University of Oregon

Intermission

Something Cooking	by	The Three Chefs
A Hundred Million Years		Song by Group
The Experts	by	The Rock Crushers
Auld Lang Syne		Song by Group

———****———

ANNUAL BANQUET COMMITTEE

Mrs. Adolph Weinzirl	Chairman
Mr. Franklin L. Davis	Toastmaster
Mrs. A. W. Hancock	Accompanist
Mr. A. W. Hancock	Skit
Miss Ellen James	Skit
Mrs. L. E. Kurtichanof	Decorations
Miss Dorothea Minar	Program Design
Mr. Earl Minar	Program Design
Mrs. C. Phillips	Decorations
Miss Shirley Phillips	Decorations
Mrs. R. R. Poppleton	Decorations
Mr. Lloyd L. Ruff	Skit
Mr. H. Bruce Schminky	Gifts
Mrs. Leo Simon	Tickets
Mr. Leo Simon	Tickets
Mr. Orrin E. Stanley	Photographer
Mr. A. D. Vance	P A System
Dr. A. C. Jones, ex officio	

O F F I C E R S

	1947	1948
PRESIDENT	Dr. Arthur C. Jones	F. W. Libbey
VICE-PRESIDENT	Orrin E. Stanley	Leo F. Simon
SECRETARY	Mrs. May Dale	Miss Miriam Shepard
TREASURER	Miss Grace Poppleton	Miss Grace Poppleton

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Dr. Courtland L. Booth	Chester A. Wheeler
Dr. John Eliot Allen	Dr. John Eliot Allen
J. Dean Butler	J. Dean Butler
Mrs. Mildred P. James	Mrs. Mildred P. James

A HUNDRED MILLION
(Tune: "Clementine")

In a cavern, in a canyon,
Back a hundred million years,
Brontosaur and stegosaurus
Gnashed their teeth and shed their tears.

Chorus:
Hundred million, hundred million,
Hundred million years ago,
Largest reptiles showed their spring styles,
Here's their bones, it must be so.

Laid their eggs on desert sand,
Thought their race would never cease,
Ancient yeggs, sold breakfast eggs for
Just about two-bits apiece.

In the lees of ancient seas, the
Trilobite was in the pink,
Picked a fight with ammonite, no
More salt water does it drink.

AULD LANG SYNE

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

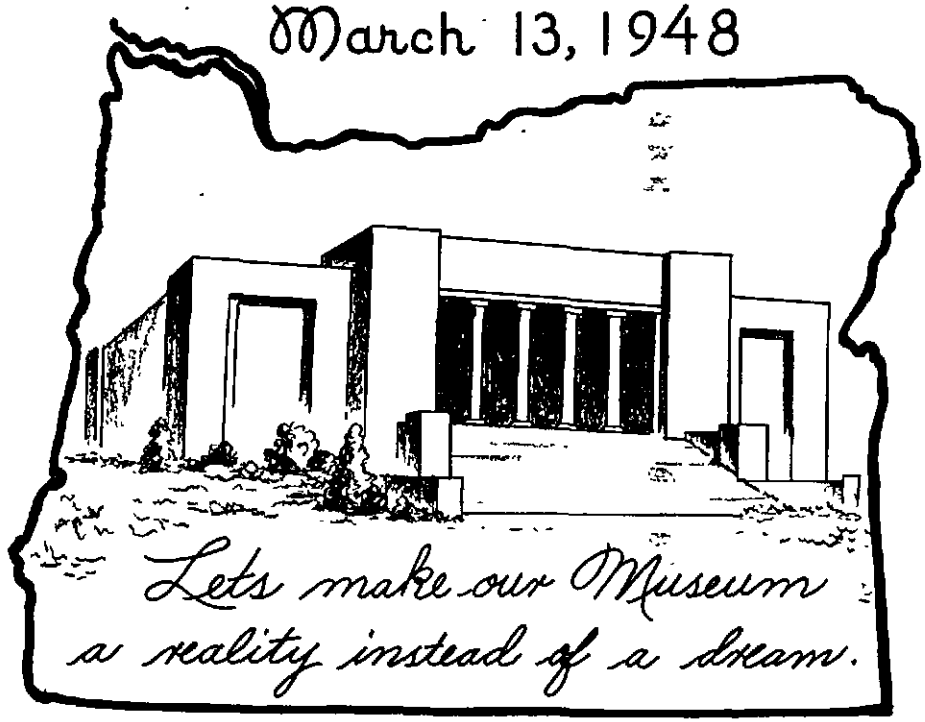
Chorus:
For auld lang syne, my lads,
For auld lang syne,
We'll take a pick and dig it up
For auld lang syne

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

So now the fossil trees are plucked
And once more brought to mind,
As Geesock diggers reconstruct
The days of auld lang syne.

Thirteenth Annual Banquet

March 13, 1948



G. S. O. C.

13TH ANNUAL BANQUET
G.S.O.C. MARCH 13, 1948
REED COLLEGE COMMONS.

GEOLOGICAL NEWS LETTER

OFFICIAL PUBLICATION OF THE

VOL. 14 NO. 7 PORTLAND, OREGON July 1948

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THE GEOLOGICAL NEWS - LETTER
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GEOLOGICAL SOCIETY OF THE OREGON COUNTRY

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Officers - 1948-1949

			Zone	Phone
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Vice-Pres.:	Leo F. Simon	7006 S.E. 21st Avenue	2	LA 0549
Secretary:	Miss Miriam R. Shepard	Box 164, Route 2	10	AT 7141-34
Treasurer:	Miss Grace Poppleton	Route 1, Oswego, Oregon		

Directors

Dr. John Eliot Allen (1949) — Mrs. Mildred P. James (1950)
J. Dean Butler (1949) — Chester A. Wheeler (1950)

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Change of address and subscriptions are required 30 days in advance of date of change, and should be sent to the Business Manager.

MEMBERSHIP APPLICATION
GEOLOGICAL SOCIETY OF THE OREGON COUNTRY

Qualifications and dues:

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

Date . . . . . .

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

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

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

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

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

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

Sponsored by_____
(member)

_____
(signature)

SOCIETY ACTIVITIES

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

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

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

JULY MEETING ANNOUNCEMENTS

Friday July 9 — Travelog of U. S. Engineer Projects, by Louis E. Rydell, Corps of Engineers. Lecture will be illustrated with colored slides.

Friday July 23 — "Geology and other natural history of the McKenzie River region" with illustrations, by Dr. Ruth Hopson.

FIELD TRIP ANNOUNCEMENTS

Aside from the McKenzie River trip, July 3-4-5, no trip is planned for the balance of the month.

Sunday Aug. 15 — Definite plans will be announced later.

ACTIVITY IN OLD VOLCANO PREDICTED

Friday Aug. 13 — It has been reliably forecast that large quantities of boiling java will spew forth in the crater of Mt. Tabor this August. This prediction has been made by an authority long familiar with this well known volcano. Many geologists and engineers are making painstaking arrangements in anticipation of the event.

A committee headed by Mr. Franklin Davis has been assigned to handle preparations. Mr. Davis expects the first signs of activity at 6:30 p.m. on Friday, August 13. The display should reach a maximum about 8⁰⁰ when the stage is set for the second part of the phenomenon.

Assisting Mr. Davis will be fellow scientists M. E. Fowler, A. Smith, and L. K. Rosa all long-experienced in witnessing geologic cataclysms of this sort. Mr. Bruce Schminky has been detailed to handle arrangements for taking care of the throng of scientists and onlookers that will undoubtedly be present. Official cognizance to the predicted geologic activity has been given by the Geological Society of the Oregon Country which will hold its annual picnic there at that time.

****

"The Enticing Will-o-the-Wisp"

(From an old woodcut)

WILL-o'-THE-WISP, OR IGNIS FATUUS

By
J. Hugh Pruett
General Extension Division
Oregon Higher Education System

An old story tells us there once lived a man - Will, by name - who was so incredibly mean that when he departed this life and applied successively for entrance into heaven and the underworld, neither would have him. The devil sent him back to the earth where he was condemned to wander continuously in soggy swamps. He was given a "wisp" of burning straw with which to light his way as he attempted to escape from the miry tangle. Seemingly, Will is still wandering and wading, for his faint wisp, even now, is sometimes sighted over marshy regions when the nights are unusually dark.

Thus the over-credulous once attempted to explain the mysterious little globules of light occasionally seen over boggy places, and variously known as will-o'-the-wisp, jack-o'-lantern, ignis fatuus, corpse candles, spunkie, witch light, and friar's lantern.

In the realm of story-telling and poetry, some have connected these fantastic lights with the activities of fairies. The superstitious have persistently assigned ghostly sources to the phenomenon. We have sometimes seen pictures of persons becoming frightened at the sight of the little witch lanterns. Some have thought the devil was after them. Others, according to stories, followed the illumination and wandered into bogs from which they had difficulty extricating themselves. There is surely nothing any more supernatural about the ignis fatuus than there is about a glow worm. The principal difference is that the former is an extremely rare sight and the cause imperfectly understood. One writer has said they are "in that misty borderland that forever lies between superstitious fancy and attested fact."

Those scientifically inclined are sure these lights are sometimes seen, but only occasionally are explanations attempted. The phenomenon seems to belong to no definite branch of science, so no organized research is undertaken. In fact, it is so rarely observed that no careful study is possible. One has a difficult time finding it mentioned in standard scientific texts or encyclopedias of any sort.

Two years ago, I carefully searched several "reader's guides," some extending back to the year 1800, for references to magazine articles on the subject. I found about a dozen listed, and was able to get the reading of all of these. I made copious notes and, shortly afterwards, used this as the topic for my weekly, 450-word, astronomical (?) story sent out to my string of newspaper users in 10 western states. This article brought several letters from readers who related their own experiences and offered theories.

I have never seen the will-o'-the-wisp, so what follows is merely a recital of others' observations as obtained from the magazine articles and letters sent directly to me. I shall mention also some attempted explanations.

A New Yorker reported that one evening, as he was going through a boggy woodland near Cayutville, he had the good fortune to encounter some of these luminous globules. There were five of them, and they had about the diameter of 50-cent pieces. They seemed to be fairly stationary two or three feet above the ground, although they occasionally wavered gently to and fro in the slight

movement of the evening air. He mentioned that he had heard the same phenomenon was sometimes seen around graveyards.

Prof. Fernando Sanford of Stanford University, writing in the Scientific Monthly of October 1919, stated the ignis fatuus was more frequently seen 100 years ago than at present. If this true, it must be that drainage has reduced the number of swampy places or that writers stay in town more than formerly.

We find in an Italian report that one of these little balls was seen to rise between the paving stones of a street and actually cast some heat on the face of the observer. In a French locality they were known to rise from slimy pools and were said to give an odor of phosphorus when they broke. At other places, this scent was said to resemble sulphur or ammonia.

The well-known German astronomer, Bessel, wrote about 100 years ago that he and another man, while boating one very dark, early morning on a swampy lake, were treated to quite a display of the will-o'-the-wisp. At times there were as many as 100 of the luminous little globules floating in the air just above the water surface. Their color was bluish and the light was so delicate that it did not illuminate the water. At times there was no movement, then in a slight breath of air they moved horizontally. One moving group reminded him of a flock of little birds. Bessel reported that each individual seemed to endure for around 15 seconds after coming into view, then suddenly broke and was gone. This observation by a scientist is worthy of attention.

Another German astronomer, Galle, the discoverer of Neptune, at about the same time related the observation of a pupil of his. "The lights seemed to be little flames," he said, "about an inch in length, and each lasted only about three seconds. They seemed constantly to be appearing and disappearing, and apparently gave no odor nor smoke." A German meteorologist explained that to examine them one had to approach very quietly. Then he could stand over these egg-size luminosities as they hung among the blades of grass. They were said to be greenish white. He found that simply waving his finger toward them caused disappearance "with a slight pop." He actually seized a few of the mystery globes but received not the least sensation of heat. When undisturbed, each one lasted about 1½ minutes.

A Professor Knorr of Kieff said that he had seen these "flames" five inches high, but without smoke or odor. He claimed that he had held the metal end of his cane in some of them without the least heating effect. Another poorly authenticated account stated that a man thrust some hemp fiber into one of these lights and the material immediately became ignited.

An interesting account of an observation of the ignis fatuus is given by M. Luckiesh, writing in the Scientific American Supplement of December 9, 1916. One night in January he was tramping over a desert region in Nevada shortly after a heavy rain. Coyotes were howling in the distance. Certain depressions in the ground, known as "dry lakes", were holding water - to the depth of a few inches - for the first time in several years. At about 2:00 a.m. these weird lights began to appear. Luckiesh thought he could first see them as they rose through the water toward the surface. Hundreds, floating in the air a little above the water, were often visible at one time. They were quite faint and seemed to have no definite shape, yet certainly were spots of finite size. He seemed unable to estimate their distance from him. He admitted that the dismal notes from the coyotes, these ghostly "lanterns," and the knowledge that the nearest human beings were 20 miles away aroused queer emotions. He saw the lights during

the entire hour he was crossing the region. He recognized them as the ignis fatuus, or will-o'-the-wisp, although at no time in his life had he ever talked to another person who had witnessed the same phenomenon.

Paul Ewing, staff writer of the Portland Oregonian, wrote me an interesting letter regarding his encounter with a strange light on a very dark night in March 1946 when he was on a horseback trip from Bend to Fort Rock, Oregon. Sometime after midnight, when on the open desert, ("The ground from which the snow had recently melted was about as wet as it ever gets.") he saw a ball of light rise from the ground and proceed ahead of him. I quote in part from Mr. Ewing's letter:

> "The light was about the size of the glow cast by ordinary kerosene lantern, but appeared in the form of a ball and was of only a slightly yellowish tinge. It traveled most of the time about three feet above the ground, but occasionally dipped within a few inches or rose to ten or more feet. Its speed varied. Sometimes it hung nearly motionless....It was difficult to estimate the precise distance from such a vaporish object. At times it traveled over the dirt road; sometimes it swerved as much as 50 feet on either side. It dipped to the ground and disappeared some ten miles north of Fort Rock. I was interested to note that my horse also saw it, although it was not at all alarmed."

Mrs. Della Blaisdell of Portland, Oregon, believes she witnessed this phenomenon several years ago on the road between Gresham and Portland:

> "We had been on a drive and were returning after dark on a moonless night. We struck one rather long stretch through trees which evidently was rather swampy, as it had that funny damp odor of such places. There seemed to be very low little spots of fog near the ground, but no fog was up even with us. Several times I thought we were coming to a house among the trees for I'd see a dim light, but it wouldn't get brighter - just disappeared. Soon I spoke to my husband about them. He said he had been noticing them too and suggested that they might be will-o'-the-wisps. We could always see when we got close that there was no house where the lights could be. It was really spooky. I recall we once came to a clear place for a short time, then, when going through another wooded stretch, we saw more lights. They were the queerest I ever saw. After we got home we were quite disgusted that we had not parked, turned off our lights, and watched for a little while."

Charles West of Plummer, Idaho, wrote that he used to see the ignis fatuus along the banks of the Cimarron River in Oklahoma.

> "I camped for a summer at the head of a shallow cut running from the river bank into the plains. Nearly always when the clouds were heavy and there was little movement of air, these ghostly balls would travel up this cut. Many times I tried to catch them, but the slightest movement caused them to disappear. I tried standing perfectly still and holding my breath as they approached. Always I caught the smell of phosphorus, a scent which often came from the river at low water. While I could never catch the ball of fire, I could catch the gas bubbling up from the muck on the river bed.

"My theory - and it is just a theory - is that a thin film of water forms the bubble which holds hydrogen and phosphorus. The hydrogen carries the bubble and the phosphorus gives the light. A slight breath of air ruins the whole set-up. It is closely akin to the old foxfire that comes from rotting wood, only the foxfire has no film of water connected with it."

After leaving that region, Mr. West decided to try making some "ghost balls" himself. He wrote further:

"I tried the following experiment. I took a two-gallon glass jug and half filled it with half decomposed compost, put in a handful of bone meal and another of powdered charcoal. I pumped all the air I could from the jug and sealed it with wax. I set the concoction beside a steam boiler at a temperature of 112° Fahrenheit. In 72 hours I had a jugful of ignis fatuus, or ghost lights. The spectrum of this light showed lines of hydrogen, phosphorus, and carbon dioxide."

This man's letter gave indications that he had some knowledge of chemistry. I did not, however, inquire into his profession.

The magazine articles on the ignis fatuus related other attempts at explanations, but all revealed an uncertainty on the part of the explainer. Newton was quoted as saying, "It is a vapor shining without heat; and there is the difference between this and a burning vapor as between rotten wood shining without heat and burning coals of fire."

Some have suggested that it is marsh gas (CH_4) or hydrogen sulphide (H_2S), but just how these could "combust" spontaneously is a little difficult to explain. Others think it is bubbles of phosphine (PH_3). Hausman said he had produced phosphine in the laboratory and that when it came in contact with the air, it burned with a pale blue flame. But this gas has a pungent odor. Most observers fail to note this odor or any heat with the ignis fatuus. Perhaps it is a phosphorescent vapor, shining as does a watch face in the dark. (Phosphorescence in this connection does not imply the presence of phosphorus.) Another has suggested the glow may be electrical in nature.

Sanford says the bubbles may be methane (marsh gas) or carbon dioxide enclosed in a film of water which is laden with luminous bacteria. He states that some types of bacteria do not become luminous until they come in contact with the air. Certain flying insects are luminescent and some become so when diseased. One man thought he had caught a will-o'-the-wisp only to find it was a phosphorescent mosquito. Some have reported they have seen luminous owls in trees on very dark nights. This glow is said to be due to bacteria in their feathers.

There is considerable disagreement as to the shapes and sizes in which these little lights appear. While the general consensus is that they are globular, some of the more scientific observers state they look more like tiny clouds at first and become spherical as they rise. Most consider the luminosity quite faint, but some reports make them light up the surroundings like a flashlight - or even brighter. They are sometimes reported to have the shape of candle flames.

One observer stated that when he stirred the mud under the water over which a few luminous bubbles appeared, many more (that seemingly had been trapped in the mud) came to the surface. A family north of Eugene reported to me a few years ago that they saw the lights over shallow water near their home before dawn one dark, windy morning. Evidently the wind had loosened the bubbles.

After all that is reported on the subject, it seems that the ignis fatuus is still quite unexplained. It is quite probable that many sights reported are not this at all. It may be something like taking everything in the sky for a "flying disk." Lights of distant houses and moving lanterns, glowing decaying wood, fireflies and glow worms could easily give the same general impression. Perhaps the easiest "out" in the matter would be to adopt the idea expressed in the following letter received two years ago from W. L. Hite of Spokane.

> "In answer to your inquiry about the will-o'-the-wisp, I have seen many of these in the South. We called them 'jack lanterns.' They are of the supernatural and the scientist cannot figure anything out of it. Many years ago there was a time of spiritual rappings. There would be knocks on doors when no one was there. Old-fashioned grindstones would turn without anyone near them. Dishes on tables would rattle until no one could eat. Just supernatural. No one ever figured out anything about it."

The general opinion is that these mysterious little fairy lanterns are luminous bubbles of gas rising from decaying matter in marshy places; that there is a scientific explanation for them, but that due to the lack of accurate data and chemical studies, they are still very imperfectly understood.

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DONALD O'CONNELL WINS SCHOLASTIC HONORS

Donald O'Connell, a former junior member of the Geological Society of the Oregon Country, has been graduated with honors at the University of Oregon and elected to Phi Beta Kappa. He has accepted a research assistantship in psychology at Swarthmore College in Pennsylvania where he will spend part of his time assisting members of the faculty in research while working for his master's degree. Dr. Wolfgang Kohler, head of the department of psychology, is considered to be one of the outstanding psychologists in the world today. Swarthmore, one of the oldest colleges in the United States, was founded by the Quakers in 1864. The enrollment is limited to 750 students, the number being divided equally between men and women. Only three assistantships are offered each year.

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MRS. ERICKSON RECEIVES AWARD

We are proud of Mrs. Rudolph Erickson who has received the $200 annual Portland Civic Theater playwright award for her dramatization of the life of the Oregon historical figure, John McLoughlin. Her play, titled "The Beaver Hat," may be included in the Oregon Centennial Celebration to be held in 1949.

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THE MID-WEST HAS 'EM TOO

More than 50 members of the Geological Society of Minnesota set off for Colorado today (June 13, 1948) to prowl the Rockies for anything they could find in the line of gold, uranium, or what have you. The amateur geologists ranging in age from 21 to 75, and including doctors, lawyers, teachers, and housewives, also expect to turn up some fossils and, in between times, take part in the first annual convention of the American Association of Amateur Geologists.

St. Paul Pioneer Press.

IDENTIFICATION UP A STUMP

The "Western Hemlock" label on a fossil stump stirred discussion among Society members on the recent Columbia Gorge field trip. The stump is embedded in a roadcut near McCord Creek. The matter was referred to Prof. George F. Beck, of the Central Washington College of Education, who gave permission for the use of his answer in the News-Letter.

***

I think I know the tree stump of which you speak - the one at the east end of the bridge, enclosed in an iron grid and carrying a label assigning it to the modern western hemlock.

That the tree should belong to the hemlock of the present surroundings is highly improbable even without examination of the wood itself. I have picked up a few fragments and sectioned them but unfortunately the rays are not well preserved and a certain identification is impossible.

The wood structure places the tree in the broad category Cedroxylon which includes all fossil woods having a pinelike structure without the scattering resin canals. Modern hemlocks, firs, and golden larch belong to this group, with an outside possibility of cedar of Lebanon or the Chinese firlike Keteleeria being involved. What I can see of the ray detail almost surely excludes hemlock, so that fir or golden larch is the likely modern equivalent.

The reference to Ginkgo probably comes from my mention that the wood is to be sought for (as yet unsuccessfully) among the Gorge woods - for the leaves have been found there. I found cedar of Lebanon in the cut west of the bridge but that does not argue too much for the character of a nearby specimen.

The clipping referring to Dr. Sandborn's recognition of Metasequoia at Scio reminds me that some of our sequoialike woods may really represent this newly found genus. I am thinking particularly of the woods in the Gorge, at Roosevelt and the Yakima Canyon - whose woods lack the traumatic canals (apparently) of typical redwood. Even more so do the so-called sequoias of the Yellowstone and Florissant suggest this exotic genus, if we may assume the wood to be nearly but not quite like that of the redwood.

George F. Beck

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LUNCHEON NOTES - May 13, 1948

Twenty-five people, five of whom were guests, were present. Fay Bristol of Grants Pass, guest of Pres. Libbey, said that a new Grants Pass Geological Society is being organized in the interesting mining country in southern Oregon. Edith D. King of Burley, Idaho, and Ruth Dodge were Dr. Booth's guests. Gertrude Harris and Marian J. Campbell were guests of Estella Conner and Miriam Shepard, respectively. Shirley Buck, member, who has not been at the luncheons very often, was introduced by Raymond L. Baldwin.....Ada Henley had a fossil leaf from near Klamath Falls which A.D.Vance thought was a willow.....Pres. Libbey and Vice.Pres. Simon were heard arguing about a small rock which they did not trust to be passed around the table.....Letters about the fossil stump at the east end of the McCord Creek bridge on the Columbia Highway were read by Miriam Shepard and Dr. Ruth Hopson. The Forest Service seems to be inclined to put up an identifying sign "as soon as the scientists determine the species" of the stump.....Meetings and a trip were announced. Mr. Simon suggested a 3-day trip into the Three Sisters region with the Eugene Obsidians. Dr. Hopson was of the opinion that the Fourth of July would be too early for that altitude.....Bruce Schminky advanced the opinion that sun spots were responsible for the rainy Spring weather. **********

LUNCHEON NOTES

May 20, 1948

Among the two dozen people present at this luncheon were new members, Mr. and Mrs. Charles O. Conner, Fred W. Rodolf, a mining engineer of wide experience who was the guest of George Elder, H. J. Carruthers of the Portland Astronomical Society, and J. H. Karle of the Portland Amateur Telescope Makers and Observers. The last-named gentlemen spoke about the convention of the Northwest Region of the Astronomers' League.....Dr. C. L. Booth exhibited a specimen of mammillary hematite with quartz from England.....Lloyd Ruff had some Wyoming nodules for Dr. Booth.

* * * * *

May 27, 1948

An attendance of twenty, with President Libbey in the chair, was recorded for the above date. The president passed around a sample collection of sixteen minerals which the State Department of Geology and Mineral Industries is preparing for sale to students who are interested in owning specimens.....Dr. C. L. Booth had a scapolite from Laurel, Montana, which he rather expected would cause a discussion.....Mr. Forbes, fearing that some of us had forgotten about the museum, gave each person a circular explaining the functions of the museum, and made suggestions for methods of donating to the fund. He said that Mr. Lloyd has set aside a block of ground on the East Side and has offered to pay the cost of architectural plans, and to furnish a temporary home until the first wing of the museum building is ready for occupancy.....Mr. Vance introduced Mr. A. D. Platt, a former member of the Society, who is planning to renew his membership..... Dr. Booth mentioned an article in the current issue of Life about Dr. Weinzirl's work. He also said that some members of the Society would appear on a radio quiz on KXL Saturday, May 29.....Ellen James, chairman of the program committee, announced the coming lectures.....Mrs. Simon thanked Mr. Vance for his leadership of the fossil hunting trip in which about 60 people took part. She announced that the "Fourth of July trip" would cover the ground scheduled for last fall - up the McKenzie River.....Dr. Anderson spoke of a proposed trip to California and asked for geological information about Yosemite National Park.

* * * * *

June 3, 1948

The attendance at the June 3rd luncheon was limited by the size of the room. Those who could squeeze in gathered about a large round table with four people at two small tables jammed into the corners of the room. Other members took a look at the situation and went elsewhere for their luncheon. To add to the discomfort the service was unusually slow.....E.N.Bates had some pebbles that he had brought from the Salton Sea, and a copy of the new Scientific American - a very different magazine from the magazine of the same name of our college days.....J.W.Jones, a guest, had samples of rhyolite tuff from a ranch owned by Norton Bros. In a house that he is building he is finishing the bathroon with this material which does not take a high polish but which absorbs water amounting to one quarter of its dry weight.....Mr. Stone had a piece of granite from the Coulee dam site.....Mr. Erickson told of an erratic of mica schist in his garden. He said that others similar to it are found in the vicinity.....Dr. Arthur C. Jones had recently returned from California where he had attended a meeting of the National Rehabilitation Association which is concerned with re-establishing crippled and disabled people in gainful occupations. He said that we have the beginning of a rehabilitation center at SW 11th Ave. and SW Market St. in Portland and that its work will not conflict with that which other agencies are prepared to do. He also mentioned the fumaroles in the Salton Sea; and recommended the east and north views of Mt. Lassen as being

more interesting than the others.....Ellen James announced coming evening programs of the Society and urged that help should be extended to any of our members who might have been residents of Vanport.....Mr. Erickson was willing to take orders for Ancient Volcanoes in Oregon, by Howel Williams.

* * * * *

June 10, 1948

Twenty members, including Clarence Phillips who has been rather exclusive lately, inspected President Libbey's sample of 38° gravity oil, paraffine base, from Union Oil Company State #1 well in sec. 15, T. 18 N., R. 12 W., at Pacific Beach, Gray's Harbor, Washington. The well produces about five barrels a day. The oil would become solid if placed in a refrigerator.....Dr. Stevens said that there is much loose talk and speculation about preventing floods. He said, "You can't prevent them." You can't do it by planting more trees or contour plowing your land. The cool weather in Montana continued until the hot weather reached Canada and the run-off from both areas joined to make the big flood. It is only when we begin to encroach upon the river that there is any damage. There is nothing to do but build stronger and better works to care for the floods. It is a problem of dollar economy in the building of dikes. Works capable of protecting the flooded areas might have cost three times what was spent on the present ones. It is considered good engineering practice to "take a licking" every fifty years rather than to spend exorbitantly and put a heavy tax burden on the protected land. If storage reservoirs are built they should be used for flood control only, and should be emptied every spring so their capacity would be available to store the excess water. "It is doubtful if areas sufficient for this purpose are available," Dr. Stevens said, in answer to Mr. Vance's question what capacity would be needed to store the top foot of the 1948 flood.....Dr. W.C.Adams was in Portland during the 1894 flood and said that then nobody worried about it although boats and elevated wooden walks were needed in the downtown district. "It was just like Venice," said the doctor. People sang and enjoyed themselves..... E.N.Bates quoted Clarence Phillips as saying that the P.G.E. Company had increased the safety of the west side in Portland by connecting their lines serving the City's sewage pumping station with the lines of other companies so the plant is not dependent on any one company.....Mr. Libbey remarked that public utility companies are learning that they must use more publicity.

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June 17, 1948

In the absence of Pres. Libbey, the chair was capably occupied by Vice Pres. Simon.....Guests were Mrs.W.T.Graham of Iowa, presented by Miss Hughes, and Elaine Rowe, who was introduced by Mrs. Arthur C. Jones.....Dr. Arthur C. Jones had a thin translucent slab of "spinach" jade from Monterey Bay, California, which was passed around with Mr. Bates' pocket flashlight to better show the pattern in the specimen. To reach this ledge of jade one must be lowered down the face of a cliff by rope at low tide, so it is not believed that the supply will be rapidly depleted by amateur jade hunters.....R. Erickson had a copy of October 1947 Nature Magazine containing a description of a flood in the Olympics. This brought about a general discussion of the Columbia River flood and the great volume of silt brought down. Dr. Stevens explained the difference between surface-erosion, the result of careless cultivation, and geological erosion which man is unable to control.....Ruth Dodge spoke of wind erosion in Colorado and showed a dainty little arrow point that had been uncovered there by the wind.....Miss Hughes had a polished section of an agatized ammonite.....Dr. Ruth Hopson told of her experiences in not taking a boat trip through the Snake River Canyon. She has the sympathy of the group in her disappointment.....Dr. Hodge explained the differences between vesuvianite, jadeite, and californite; and how the value of a specimen is determined. The reporter's notes are not clear enough to be worth printing. So sorry.

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MEMBERSHIP APPLICATION
GEOLOGICAL SOCIETY OF THE OREGON COUNTRY

Qualifications and dues:

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

Date . . . . . .

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

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

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

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

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

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

Sponsored by _____
(member)

_____
(signature)

SOCIETY ACTIVITIES

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

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

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

AUGUST MEETING ANNOUNCEMENTS

Friday Aug.13 — The Annual Picnic of the GSOC is scheduled for the evening of Friday, August 13, 1948. This date and the fact that A.D.Vance is to function as Master of Ceremonies is a double challenge to Jupiter Pluvius. Picnic baskets will be unpacked at 6:30 p.m. Coffee, cream, and sugar will be served by that permanent refreshment committee consisting of the Misses Fowler, Rosa, and Smith. Bruce Schminky is the committeeman in charge of grounds.

The campfire session in the crater of the volcano will, as usual, include group singing and stunts worked out by the program committee consisting of the Misses Shaw, Henley, and Jennings; Dr. and Mrs. Adams; and Mr. E. N. Bates. Members are invited to bring along their friends for a pleasant and entertaining evening.

F. L. Davis, Chairman

Friday Aug.27 — There will be a lecture by Dr. Ewart Baldwin, Assist. Prof. of Geology at the University of Oregon, on Friday, August 27. Subject to be announced.

FIELD TRIP ANNOUNCEMENT

Sunday Aug.15 — A trip is scheduled for this date. Itinerary will be announced at meetings and in the paper.

BALDWINS ON CROSS-COUNTRY TRIP

The Raymond Baldwins have left for a 12-month cross-country vacation which will include the Canadian Rockies and many other interesting spots. Mr. Chester Wheeler has agreed to take over the job of Business Manager of the NEWS-LETTER, a post held by Ray Baldwin for many years.

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DR. COURTLAND L. BOOTH

Dr. Courtland L. Booth, a charter member of the Geological Society of the Oregon Country, died July 13, 1948, following a coronary thrombosis. He had been active in the practice of his profession until the time of the attack. Although his work many times caused him to be late at the Society's luncheons and lectures, he nearly always arrived in time to add interest to the meetings by his pertinent questions or comments, grave or witty, as the occasion demanded. He will long be remembered and missed by our Society and by the hundreds of friends in the other organizations of which he was a member.

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MOLALLA TRIP - JUNE 20, 1948

Norris Stone and your reporter met with the Portland caravan(?) at Molalla on Sunday morning at about 9:30. It was a typical GSOC caravan trip day. That is, it wasn't dry. Presumably for this reason the Portland section of the caravan was limited to two cars. Leo and Mrs. Simon, Mrs. James, and Miss Dodge were in one car and Dr. and Mrs. Weber and children were in the other. This completed the roll of members.

The combined caravan (?) proceded first to the Molalla River bridge east of that city and inspected the breccia flow exposed on the east side of the river at that point also the underlying tuff formation. The overlying breccia is composed of angular fragments, water-worn boulders, and particles of wood, all cemented into a compact formation. The breccia formation exposure is from 40 to 50 feet in depth and overlying this is a deposit of water-worn boulders probably deposited by the present stream before it cut on down to its present bed. From this point the caravan proceeded back towards the town of Molalla for approximately a mile then made a turn to the south along a country road to the private logging road operated by some timber companies. The road runs from the mountains down to a dump ground on the Willamette River. Permission to enter on this private road had been secured the day before by Leo Simon and your reporter on their scouting trip. The caravan then proceeded east along this road to the fossil leaf deposit which is in a tuff formation at the bluffs fronting the Molalla River and opposite Camp Collins.

Apparently threats of rainy weather is no deterrent for people from Salem since, on arrival at the leaf deposit area, we found Mr. and Mrs. Gordon of the Salem Society and some friends busily engaged in breaking out sections of the cliff side and gathering specimens. They were scouting for a proposed trip of the Salem Society to this formation. All members of our group were speedily engaged in the same activity and a very satisfactory number of specimens of Ginkgo leaves and nuts were obtained. A specimen of conifer twig was also found by one member of our group and, when we were cleaning up the debris out of the ditch, which cleaning was one request made of us by a member of the logging company when permission was secured to work at the spot, another very fine specimen of considerable size was observed in the rock, necessitating considerable additional time in securing the specimens. It was practically necessary to drag Leo bodily from the scene so that we might proceed to find a sheltered spot in which to eat lunch. Numbers prevailing on Leo, we proceeded south along the river and found an abandoned lumber mill that gave us the necessary shelter from the elements, and a very pleasant luncheon was enjoyed by all members of the group.

After lunch the caravan proceeded to where the private logging road of Weyerhauser Timber Company comes in onto the main private logging road. Leo and your reporter had visited this point on Saturday and were in hopes that a slide which had obstructed the highway at some point south of the junction would have been cleared away and that permission might be obtained to proceed up this Weyerhauser Timber Company road to another leaf deposit some ten or fifteen miles south of the junction. We were not able to get through, however, so proceeded down to the river which was close at hand and after parking the cars went down to inspect an apparent tuff formation exposed by the river and underlying a basaltic flow.

The caravan then proceeded back towards Molalla and stopped north of the leaf deposit to inspect a coal exposure in the side of the bluff some few feet above the roadway. At this point Leo Simon found additional fossil leaf deposits.

We had been advised on Saturday that the logging company contemplated a cutting back of the bluff here to eliminate some trestles and that we would be notified when this work was done so that, if desired, we might come out to check for the uncovering of additional fossil deposits. Apparently this work will uncover some interesting fossil deposits.

The caravan then proceeded into Molalla where Leo scouted around for information as to the location of some other coal seam exposures that he had visited at another time. Acting on some information he then secured we proceeded south of Molalla several miles to where an abandoned railroad grade crossed the highway leading to Kokels Corner. At the road grade we met up with a logging operator who had knowledge as to where the coal seams might be seen.

Norris Stone and your reporter being somewhat worn down at this point and the day drawing to a close the caravan (?) split up. As might be expected Leo went searching for the exposure and we understand that he and his party did arrive home sometime before the next morning. However; your reporter knows that Leo was not at his place of business until approximately noon the next day.

It was an interesting trip and enjoyed greatly by all who participated despite the drizzle of rain during part of the day. It is to be regretted that we did not have the benefit of some professional advice and opinions on what we saw on our trip, and also that there were not more of the members present.

R. Erickson

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KANSAS METEOR

This account of a meteor is not fresh in point of time but rather in point of view, which is that of a farm woman of the middle west. It is part of a letter written by the editor's cousin who lives near the south boundary of Nebraska.

Wilsonville, Nebraska
February 22, 1948

Last Wednesday the 18th at about 5:00 p.m. people here experienced quite a surprise when there was a loud explosion in the air. It shook the earth, frightened the chickens and stock (people too), rattled windows, etc., then there was a large billow of smoke with a trail of smoke going east for quite a distance. People from down town (Wilsonville) phoned out here to find out what had happened but it was some south of us yet; not too far though, for it was northwest from Norton, Kansas, our nearest town to the south. The reports came over the radio that the shock was felt in Colorado, Oklahoma, Kansas, and Nebraska.

Eldon's boy happened to be looking south; he was with his folks. He screamed, "Look" quite an instant before there was any noise. Eldon saw the flash of light but Dale said what he saw was like a star shooting through the sky with a tail of fire following it, all before the explosion.

One lady in Norton told me her husband was in Chicago and about 10 o'clock that night he called home and asked what it was all about, that he had just heard over the radio that a meteor had exploded directly over Norton, she said, while here we were yet wondering what it was.

****

YOU AND I

(The author of the unique and beautiful poem below is not known. It has been attributed to Gertrude Atherton, who has won a reputation as a writer of short stories, and sentimental romancists have credited it to a young college man enamored of a beautiful and talented young woman who did not reciprocate his affection. Finding his suit hopeless, after writing this poem he foreswore all literary effort thereafter and thus cheated the world of possible products of undoubted genius. Many have falsely claimed authorship. The poem would do credit to any who has won a place in literature. It has a beautiful rhythm perfectly suited to the theme, and the mingling of sentiment with scientific theory is admirable.)

When you were a tadpole and I was a fish,
In the Paleozoic time,
And side by side on the ebbing tide
We sprawled through the ooze and slime,
Or skittered with many a caudal flip
Through the depths of the Cambrian fen,
My heart was rife with the joy of life,
For I loved you even then.

Mindless we lived and mindless we loved,
And mindless at last we died;
And deep in a rift of Caradoc drift
We slumbered side by side.
The world turned on in the lathe of time
And the hot lands heaved amain;
We caught our breath from the womb of death
And crept into life again.

We were amphibians, scaled and tailed
And drab as a dead man's hand;
We coiled at ease 'neath the dripping trees
Or trailed through the mud and sand
Croaking and blind, with our three-clawed feet,
Writhing a language dumb,
And never a spark in the empty dark
To hint of a life to come.

Thus mindless we lived and mindless we loved,
And mindless we died once more.
Our forms were rolled in the clinging mold
Of a Neocomian shore.
The aeons came and the aeons fled,
And the sleep that wrapped us fast
Was riven away in a newer day
And the night of death was passed.

Then light and swift through the jungle trees
We swung in our airy flights;
We breathed in the balm of the fronded palm
In the hush of the moonless nights,
And oh, what beautiful years were these
When our hearts flung each to each,
When our minds were filled and our senses thrilled
In the first faint dawn of speech!

I was thewed like an Auroch bull
And tusked like the great cave bear,
While you, my sweet, from head to feet,
Were gowned in your glorious hair,
And deep in the gloom of a fireless cave,
When the moon lay o'er the plain
And the stars hung red on the river bed,
We mumbled the bones of the slain.

I flicked a flint to a cutting edge
And shaped it with brutish craft;
I broke a shank from the woodland dank
And fitted it head and haft.
Then I hid me close by the reedy tarn
Where the mammoth came to drink;
Through brawn and bone I drave the stone
And slew him upon the brink.

Then loud I howled through the moonlit wastes;
Loud answered our kith and kin;
From west to east to the crimson feast
The clans came trooping in.
O'er joint and gristle and padded hoof
We fought and clawed and tore,
And, cheek by jowl, with many a growl
We talked the marvel o'er.

(For we lived by blood and right of might
Ere human laws were drawn,
And the age of the sin did not begin
Till our brutish tusks were gone.)

And that was a million years ago,
In a time that no man knows;
Yet here tonight in the mellow light
We sit at Delmonico's.
Your eyes are blue as the Devon spring,
Your hair is dark as jet,
Your years are few and your life is new,
Your soul untried, and yet

Our trail is on the Kimmeridge clay
And the scarp of Purbeck flags;
We've left our bones on the Bagshot stones
And deep in the Caroline crags.
Our life is old; our love is old;
And death shall come amain--
Should it come today what man may say
We shall not meet again?

Though cities have grown above the graves
Where the crooked bone made war,
And the oxwain creaks o'er the buried caves
Where the mummied mammoth are,
Still, as we linger at luncheon here
O'er many a dainty dish,
Let us drink anew to the time when you
Were a tadpole and I was a fish.

---Anon.

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FURTHER EXPLORATION OF BRITISH COLUMBIA URGED BY ANTHROPOLOGIST A. E. PICKFORD

Through archaeological explorations, it has been determined that man inhabited the North American continent nearly 25,000 years ago, said A. E. Pickford, anthropologist of the Provincial Museum, before a meeting of the Rotary Club yesterday at the Empress Hotel.

Until a comparatively recent time, he explained, it had been believed man first came to this continent only 4,000 years ago.

His address, entitled: "Archaeological Exploration in British Columbia," dealt primarily with a recent exploration trip into the interior of the province. He described an Indian burial ground located at Lillooet, in which were found remains of original natives, and their various personal possessions - including warriors' weapons.

Mr. Pickford expressed hope that the museum may soon undertake extensive archaeological explorations throughout British Columbia, which might lead to the uncovering of much information relative to Canada's ancient history.

He claimed that most of British Columbia was under ice about 10,000 years ago, and at that time migrants from Asia came to this continent by way of Alaska and southward along the Mackenzie River route.

From The Daily Colonist, Victoria, B.C., June 11, 1948.

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LUNCHEON NOTES - THURSDAY, JUNE 24, 1948

The unexpectedly large group made the usual slow service even slower so Vice President Simon had time to have the guests introduced and the specimens started before people got too busy to pay attention to them. Dr. Stevens presented his grandson, Norman Hay of San Francisco; Glenna Teeters' guests were Malcolm Chisholm and Ben Lashbaugh, high school students; Mrs. Eleanor Gordon of Eugene brought Charlotte Reeves, daughter of Wm. A. Reeves; and Ralph Mason presented two members of the State Department of Geology and Mineral Industries, June Roberts and Dorothy Edgerton. .....Dr. Ruth Hopson showed a thick volume of remarkable photographs taken in the McKenzie River valley to illustrate her thesis for her doctor's degree. .....Rudolf Erickson had a ginkgo leaf impression and a piece of wood from the vicinity of Molalla and Leo Simon said that he found a fossil limb of a cone-bearing tree having wide needles. There were ten people on the scheduled Sunday trip. .....Ruth Dodge had a small polished bit of "conglomerate" which was so well cemented that the included pebbles would break without loosening from the cementing material. .....Ada Henley showed a piece of fluorescent yellow opal from Virgin Valley, Nevada, and some marcasite and galena from Baxter Springs, Kansas. .....Kenneth Phillips brought a copy of a pamphlet on "Power Resources of the McKenzie River." .....Eleanor Gordon was enthusiastic about her fossil leaves in black shales from the vicinity of Goshen. .....Franklin Davis brought two books to be returned to the library. They were received with nearly as much noise as a presidential nominating convention. .....Dr. C. L. Booth had a banquet program from the Colorado Mineral Society which was a beautiful bit of sketching combined with several tiny rock specimens cemented to the card. He also had an announcement of the summer camp to study Earth Sciences in which Dr. John Allen is a leader. .....R. L. Baldwin said that Dean Butler is in Alaska. .....F. L. Davis brought up the subject of an annual picnic and Friday, August 13, was decided upon as the date. He would like to have volunteers for various activities for that occasion.

****

MEMBERSHIP LIST
As Of July 6, 1948
Compiled by Miriam Shepard, Secretary

Name	Address	Zone	Telephone
#Adams, Dr. and Mrs. W. Claude	2614 N.E. Bryce	12	GA 8747
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Anderson, Dr. and Mrs. Ward A.	10216 N.E. Skidmore Street	13	WE 5228
Bach, Miss Alwina	7607 No. Fowler Avenue	3	UN 1796
Baldwin, Dr. and Mrs. Ewart M.	Dept. of Geology, Condon Hall Univ. of Oregon, Eugene, Oregon		
#Baldwin, Mr. and Mrs. Raymond L.	4804 S.W. Laurelwood Drive	1	CH 1452
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Bates, Mr. and Mrs. E. N.	345 U.S. Court House	5	AT 6171 Ext. 638
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Butler, Mr. and Mrs. J. Dean	Rt. 17, Box 1272, Hill Road Milwaukie, Oregon	Oak Grove	3-7967
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Cole, Mr. and Mrs. A. O.	3618 N. Montana Avenue	12	MU 0919
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Elder, George V.	5537 No. Burrage	11	MU 7397
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Fischer, Mr. and Mrs. Virlis L.	420 N.W. Skyline Blvd.	1	BR 4639
Forbes, John Ripley	Oregon Museum Foundation Portland Hotel	4	AT 1171

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#Woodard, Mr. & Mrs. E. Clyde	107 N.E. 192 Avenue	16	Gresham 3246

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SUMMARY

Honorary Members	2
Charter Members	30
Junior Members	3
Other Members	100
Total	135

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LOUIS OBERSON HONORED

The activities of one of our teacher members, Louis Oberson, during the current summer vacation period is reminescent of a postman's vacation. Louie was accepted by Reed College as a student at the three-weeks course in Nuclear Physics given at that institution this summer with all tuition expenses paid. This course was given to further research and study of this subject. Louie is recipient of a scholarship given locally by the Portland Garden Club for a three-weeks course at the Institute of Natural Sciences conducted by the University of California at Santa Barbara College, California. Classes will be held in the Museum of Natural History under the supervision of the Department of Biological Sciences of that institution. The two courses for which Louie enrolled are: Conservation of Natural Resources and A Survey of Natural Science. Louie was selected from among 50 applicants for this dinstinction.

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GEOLOGICAL NEWS LETTER

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GEOLOGICAL SOCIETY OF THE OREGON COUNTRY

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J. Dean Butler (1949) — Chester A. Wheeler (1950)

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GEOLOGICAL SOCIETY OF THE OREGON COUNTRY

Qualifications and dues:

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

Date . . . . . .

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

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

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

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

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

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

Sponsored by _____
(member)

_____
(signature)

SOCIETY ACTIVITIES

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

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

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

SEPTEMBER MEETING ANNOUNCEMENTS

Friday Sept.10 — An illustrated travelogue of Eastern Washington and Oregon by Orrin E. Stanley.

Friday Sept.24 — "Geology and geography of Kodiac Island," by Tom Matthews. Illustrated with colored slides.

FIELD TRIP ANNOUNCEMENT

A field trip to the beach via the new Sunset Highway is planned for the latter part of September. The date and itinerary will be announced.

****

PAID-UP MEMBERS ADDED TO MEMBERSHIP LIST SINCE ITS PUBLICATION

	Phone
Mr. and Mrs. Thomas A. Carney (Charter members) 7269 N. E. Thorburn Street, Portland 16, Oregon	SU 9290
Mr. and Mrs. Louis E. Oberson (Charter members) 3569 N. E. Stanton, Portland 13, Oregon	WE 3685
Mr. and Mrs. A. L. McCauley Route 1, Box 266-A, Hood River, Oregon	
Mrs. Coralie S. Nelson Maplewood, Oregon	
Almeda Smith Route 2, Box 163, Oswego, Oregon	
Mrs. Charles R. Meyer 3919 S. E. Grant Court, Portland 15, Oregon	LA 6435
Mr. and Mrs. Ben F. Smith (Charter members) 1350 S. E. Flavel Street, Portland 2, Oregon	EA 1565

CHANGE OF ADDRESS

Miss Ella Triol - 2547 S.E. 27th Avenue, Portland 2, Oregon
(Miss Triol's former address was Vanport.)

NEWS ITEM

Lotus Simon left Madison, Wisconsin, June 9th. Her plans for the summer include the following: June 11 to 24 at the Audubon Nature Camp, Medomak, Maine, and June 29 to August 31 at the Cohasset Museum, Camp Lenoloc, Arden, New York.

****

PINE AND PINE-LIKE WOODS OF THE WEST AMERICAN TERTIARY

by

George F. Beck

As a graduate thesis in geology the writer has deposited at the University of Washington the above title. In it are described some six new species of resiniferous conifers according to the following plan of classification:

Pityoxylon (Kraus) Beck (pine and spruce-like woods)

Pityoxylon cutbankensis Beck
Pityoxylon spp. Beck

Pinuxylon (Gothan) Beck (hard? or soft? pines)

Pinuxylon tonensis Beck
Pinuxylon pealei (Knowlton) Beck
Pinuxylon spp. Beck

Pinus Linneaus (pine)

Diploxylon Koehne (hard pine)

Pinus yakimaensis Beck

Haploxylon Koehne (soft pine)

Pinus kelloggi Webber

Piceoxylon (Gothan) Beck (spruce-like woods)

Piceoxylon spp. Beck

Picea A. Dietr. (spruce)

Picea pacifica Beck

Pseudotsuga Carriere (Douglas fir)

Pseudotsuga pseudotsugae (Gothan) Beck

Larix Mill. (larch or tamarack)

Larix oregonensis Beck

Pinus cutbankensis is a very generalized pine-like type found as a single specimen in the vicinity of Cutbank, Montana, by Richard Doorenbos. The various Pityoxylon spp. come from Eugene, Oregon, (Ross Bros.); Malheur County, Oregon, (Julian Field); and Bakersfield, California, (R.S.Beck).

Pinuxoylon tonensis is represented by a single specimen from Tono, Washington, (Don Ross). Most of the early Tertiary true pine types have been referred to Knowlton's original type, Pinuxylon pealei, from Montana. This includes the frequently described materials from the Yellowstone National Park. Among my materials are specimens from Chehalis (Hugh Brown), Salmon Creek, Washington, (Herbert Thompson); Fall Creek, Oregon, (Lloyd Ruff); Albany, Oregon, (L.L.Robertson); Broadus, Montana, (R.D.McCurdy); Yellowstone, Fred Crosetto); Neuwaukum River, Washington, (James McGrath).

Pinuxylon spp. is represented by specimens from Unga Island (A.V.McIntosh); Morton, Washington,(Georgia Chesser); Salmon, Idaho, (Brenneman); Lamar River, Yellowstone, (A.C.Carpenter); Ellensburg, Washington, (R.T.Smith); Lamar River, Yellowstone, (F.B.Cotner); Priddys, Oregon, (A.H.Hoffman); Columbia Gorge (A.H.Hoffman).

Pinus yakimaensis is represented by specimens from the Columbia basalts of Central Washington.

Pinus kelloggi was instituted by Miss Webber for material from the Mojave. Additional material referred by the writer to this genus comes from Pendleton, Oregon, (Mr. and Mrs. Ellis Simpson); Horlick, Washington, (Melvin Cowen); Rainbow Ridge, Nevada, (Percy Train); Virgin Valley, Nevada, (H.H.Lippitt).

Piceoxylon spp. have come from Rainbow Ridge, Nevada, (Percy Train); Buena, Washington, Enumclaw, Washington, (Houston Allen); Forks, Washington, (Louise McAbee); Chehalis, Washington, (Hugh Brown); Thorpe Prairie, Washington, (Melvin Cowen); Nevada (E.W.Chapman); Agate Beach, Oregon, (Agate Pete's shop); Saskatchewan, Canada, (T.H.McAllister); American River, Washington, (E.E.Cowin); Wishram, Washington, (A.H.Hoffman); Priddys, Oregon, (A.H.Hoffman); Beacon Rock, Lower Columbia, (A.H.Hoffman); Palix Creek, Washington, (Mrs. Grace Kallgren).

Picea pacifica includes material from the Vantage forest, Washington, and from the neighborhood of Pikes Peak (W.A.Brown).

Pseudotsuga pseudotsugae is represented by material from central Washington.

Larix oregonensis is based upon a specimen from Fall Creek, Oregon, (Ford. E. Wilson).

July 20, 1948.

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LUNCHEON NOTES, JULY 1, 1948

President Libbey occupied the chair again and table service was much more prompt than a week ago, with promise of continued good service. There were 21 members present including Louis Oberson and Tom Matthews who have not been with us for some time. . . . .Business Manager Raymond L. Baldwin announced that he will leave Portland soon for a year's trip through the north and east, a stop at Niagara Falls and return through the southern states. He and Mrs. Baldwin retired from government service on June 30. The luncheon group wishes them a pleasant trip. . . . .F. W. Libbey had samples of chromite sand from the property of the Chrome Corporation near Bandon and some kaolinite from the Myrtle formation, Hubbard's Creek, Port Orford. . . . .G. V. Elder brought rich samples of gold ore, crystals, and unidentified specimens from Montana. . . . .Miss Henley had a piece of mesolite from near Roseburg. . . . .F. L. Davis brought a book, "Multitude of Living Things" and Miss Hughes had an old work on geology which she had purchased in Victoria. . . . .Mr. Hancock had a heavy rock from Wyoming which he said had formed in the throat of a geyser -- building up in layers from the outside until the flow of water had been stopped. He had stopped at a fossil bed to find four fossil heads of Oreodonts; and had to be towed out of the mud twice in the "Great Dust Bowl" of a few years ago. He reports "a very pleasant trip" so far as temperature was concerned.

****

BREAKFAST AT MADAME PELE'S

The one act geological play, "Breakfast at Madame Pele's," is printed here for the enjoyment of readers who were not able to attend the Society's picnic on Mount Tabor, and for picnickers whose knowledge of geological terms had not been polished up recently enough to enable them to savor the various viands that were served by Madame Pele at this interesting breakfast.

----- # -----

BREAKFAST AT MADAME PELE'S
A one act play
by
Ada Henley

Cast of Characters

Rough Terrain . . . . . Lloyd Ruff
Bruce Ite . . . . . Bruce Schminky
Franklin Ite . . . . . Franklin Davis
Ruby Spinel . . . . . Helen Haven
Rhoda Chrosite . . . . . Carol Ann Schminky
Madame Pele . . . . . Ada Henley

(Scene opens with Madame Pele setting table, Rhoda helping. Enter Rough Terrain, Bruce Ite, and Franklin Ite.)

ROUGH TER: Well, well, Madame Pele, what have we got this morning for breakfast?

MME. PELE: Some nice fresh THUNDER EGGS, Mr. Rough Terrain, straight from the Friday Ranch - delivered by Lon Hancock himself.

ROUGH TER: THUNDER EGGS! They look pretty tough to me.

MME. PELE: Wait till you see what's inside.

BRUCE ITE: ALBITE. What is it?

MME. PELE: Some GNEISS AGATE Jell, Bruce Ite.

ROUGH TER: Humph! They taste pretty flat to me. Pass the B'SALT.

FRANKLIN ITE: Got any hot LAVA? I mean Java?

MME. PELE: QUARTZ! Fresh from Paricutin. Myrtice Fowler's best. Pass your cup, Franklin Ite.

FRANKLIN I: Too hot for me. Let's have a bit of ICE.

(Enter RUBY SPINEL)

BRUCE ITE: Well, forever AMBER! If here isn't RUBY SPINEL! Why that DIAMOND sparkle in your eye, RUBY?

RUBY S: I've just had a wire from my ANTIMONY. She's coming to visit me from her SILVER mines.

FRANKLIN I: Haven't we a guest this morning? Who's the rosy cheeked gal?

MME. PELE: This is my friend RHODA CHROSITE. Rhoda, I want you to meet my boarders, Miss RUBY SPINEL; Mr. Rough Terrain, our eminent geological fault finder; and the Ite brothers, BRUCE ITE and FRANKLIN ITE.

CHORUS: SODALITE to meet you.

MME. PELE: Tell them where you're from, Rhoda.

RHODA: I'm from Montana. All us Chrosites have pink cheeks. RHODONITE'S my cousin. She's an ALUM of O.S.C.

MME. PELE: Franklin Ite, where's your twin brother WILLEMITE this morning?

FRANKLIN I: Oh, he's sleeping in this morning. He was out too late under the bright fluorescent lights last night.

MME. PELE: Those New Jersey twins and their friend CALCITE are usually inseparable.

RUBY S. I'm still hungry. Haven't we anything else to eat?

MME. PELE: Only some PUDDINGSTONE and it's kinda gritty. But there's plenty of MILK OF MAGNESIA to eat with it.

RUBY (aside): I only hope there's none of Madame PELE'S HAIR in it?

FRANKLIN I: Oh, well, my APATITE'S JADEd anyway. Think I'll chew some GUMMITE. I can STILBITE.

RUBY (aside to Bruce): Poor chap - nobody home. Solid MARBLE. Wonder where he got that SULPHURIC tie.

BRUCE ITE: At Newberry's Crater store - TUFFA NICKEL.

ROUGH TER: Ho hum! What's on the SLATE for today?

BRUCE ITE: Something new - you'll be surprised. MISPICKEL is going to do a SERPENTINE. And Leo Simon is going to give a talk on ribs - spare ribs, Adam's rib, and other fossil ribs. He takes a lot of ribbing.

(Franklin crawls under the table)

RHODA: What's the matter with FRANKLIN ITE?

ROUGH TER: Oh, he's looking for his APATITE. He lost it this morning. Try this bit of ARSENIC, Frankie. We haven't any EPIDOTE though. I mean antidote.

BRUCE ITE: Hey! Look at that seismograph! We're gonna have an earthquake! Let's get out!

(The table collapses as Franklin comes up)

MME. PELE: There goes my best set of PLATY ANDESITE!

(Exit all in confusion)

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FIELD TRIP TO THE UPPER MCKENZIE

(Under joint sponsorship of the Geological Society of the Oregon Country and the Obsidians of Eugene, Oregon)

July 3-4, 1948

Leaders: Dr. Warren D. Smith, former Head, Department of Geology and Geography, University of Oregon.
Hugh P. Currin, Chief Engineer, Eugene Water Board.
Ray B. Boals, Superintendent, Eugene Water Board.

First meeting was held at 8:00 P.M., Saturday, July 3rd, at the Obsidian Lodge in the CCC Camp, 58 miles east of Eugene and about 4 miles west of Belknap Springs. There were 43 in attendance, equally divided between the Obsidians of Eugene and the G.S.O.C. of Portland, with a sprinkling of members of the Mazamas.

The general description of the Upper McKenzie can best be told by the following features:

1. BELKNAP HOT SPRINGS. These springs gush out of the lava at a slightly higher level than the McKenzie River at the Post Office of Belknap Springs, where there is also a nice lodge, swimming pool, and fawcet taps from which you can get this mineralized water either cold or hot. It comes out of the ground at 180 degrees temperature. It is highly mineralized and is used for drinking and bathing. Belknap Springs is about 62 miles up the McKenzie from Eugene.

2. CLEAR LAKE, with its submerged forest and large spring on the east bank.

3. THE RECENT AA LAVA FLOW which dammed the McKenzie about 1000 years ago and produced Clear Lake.

4. PAHOEHOE LAVA FLOW below the lake.

5. THE THREE SCENIC FALLS, known as Upper (Sahalie, 120 feet high), Middle (Koosah, 70 feet high), and Lower Falls (Tamolich). No one of us seemed to know what these Indian names mean, so any reader who does know please pass the information on to your trip chairman, Leo Simon.

6. The three kinds of lava in the valley are (a) the older lava of the valley walls, thought to be contemporary with Columbia River basalt; (b) the intra-canyon lavas; (c) the Recent, or aa lavas. These three lavas are all basalts, though some facies so closely resemble andesite that only petrographic study can make the determination certain.

At 8:00 P.M. on July 3rd, Dr. Smith gave us a resume of the geology of the country and what we were to see the next day.

Promptly at 8:30 Sunday morning, July 4th, the caravan started for its first stop at the Middle Falls. The Lower Falls were so inaccessible that these were not visited; but the Middle Falls and the next stop at the Upper Falls were extremely beautiful. Dr. Smith pointed out to us the older lavas on the main canyon wall, through which the McKenzie had years ago cut its way. Intracanyon lavas filled the valley floor again, and now the McKenzie at the three falls is eating its way back through this intra-canyon lava.

We began to see that the entire country contains many sparkling-clear and icy-cold springs due to the fact that there is considerable porous lava, particularly in the latest aa group. We were told that later in the season the Lower Falls are entirely dry due to the fact that sink holes above the falls carry the water underneath the falls and into the plunge pool.

The three falls all lie within a distance of about four miles; and here we see the same process of a river eating back through solid lava to form a gorge in a similar manner to the theory of how the Columbia River produced its gorge.

The next stop after the falls was at Clear Lake. This is a body of water that is outstanding in beauty; it is windowglass clear, with a beautiful coloring shading from a light green into a dark blue. Boats were available at the Clear Lake store, and the entire party was transported across the lake to one of the large springs feeding it. This spring was some 25 to 30 feet in diameter and the temperature was 34 degrees. The temperature of the lake at this time, we were told, is 42 degrees. The storekeeper said he had never seen it go over 44 degrees. It is so cold that the only fish that can survive in it are rainbow and cut-throat trout.

One of the party, a Mr. Campbell of Eugene, brought along a small rubber boat, and by strapping fins to his hands paddled around just like Donald Duck, to the amusement of everyone and to the pleasure of himself. However, in trying to maneuver a standing position, over went Donald Duck into this 42-degree water. He finally clambered back into the boat, not with ten thousand duck pimples, but ten thousand goose pimples.

After viewing the spring the party was rowed back across Clear Lake and had a well-earned lunch in the park.

Both coming up and going back our attention was called to the very recent aa lava flows, named from the similar flows of the Hawaiian Island lavas. Aa lava is a scoriaceous, vesicular, very rough formation, looking as though it were some sort of a dump rather than a systematic flow that we are accustomed to seeing in the smoother lavas. Dr. Smith pointed out that we could tell comparatively the most recent as against the oldest of these late flows by the amount of soil and vegetation that had formed on them. Some of these flows look as though they had just been put there yesterday. One of them blocked the entire canyon, estimated at about 1000 years ago, and from Clear Lake on the trip over to the spring and back we saw some of the stumps of the forest that was drowned when this damming took place. We understand that, at the lower part of the lake where the water is crystal clear and 190 feet deep, the trees are still standing in the bed just as they were when covered and can be seen very plainly. The storekeeper at Clear Lake told us that the lake very seldom freezes over, but several years ago they had 13 feet of snow and the lake did freeze. When the ice started to go out it dammed the lower outlet of the lake, raising the water very rapidly. He showed us on the store the water mark about three feet above the floor, and approximately 10 feet above the present level of the lake. This is an example of what, we are told, happened on a larger scale in the Columbia River at Arlington and just below Portland when, at the close of the ice age, the river brought down massive bergs with their load of erratics which were dropped at various places.

On the way back we stopped above the Lower Falls about twelve miles north of Belknap Springs. Here, some of the party set out on a very rugged trip on foot. We went down an angle of about 45 degrees for about 300 feet; then a 5-mile hike through a nearly impenetrable virgin forest of beautiful trees. Our end point on this trip was to see one of the sink holes above the Lower Falls, which gave us some idea of the workings of waters in porous lava.

During this trip on foot our attention was called to this fact: if you will look at the topographical map of this section you will note that in the area between the north-south line of the McKenzie and the crest line of the Cascades there are no rivers shown. We were told that all of the snow and ice that melts from the west slope of the Cascades flows in and under the porous lava and through seams to form the many springs, along the McKenzie, so prevalent in that territory. Most of the springs are cold, but the one at Balknap seems to be either from a different source, or has gone through a section of lava which might not as yet have cooled entirely. Doc headed the party on this rugged 5-mile hike and showed that he has lost none of the woodsman qualities of his younger days. He went through those woods like a stag, and had most of us in the party demanding rest stops. But we finally made it back up that 300-foot climb to the cars.

Our next stop was at Belknap Springs, and then back to Obsidian Lodge for another fine meal out in the open. Obsidian Lodge had excellent facilities for cooking and was in every way a very fine asset. The G.S.O.C. are very thankful for the fine cooperation shown by our neighbors, the Obsidians.

Most of the group continued the fun into Monday, the 5th, visiting various points of interest - some going up over McKenzie Pass and back home through Redmond and Bend.

The G.S.O.C. are very thankful, too, for the time and effort given by Dr. Smith and his helpers in seeing that the whole party enjoyed a trip that will stand out in our memory as being very instructive and well-handled.

Norris Stone

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CAROL ANN SCHMINKY WINS RIBBONS AT COUNTY FAIR

Five children in the 4-H Garden Club at Glencoe School received a total of 65 ribbons out of 167 awards at the Gresham Fair. Carol Ann Schminky took 29 of the 65. In addition she received a blue ribbon on her rocks and minerals display, 4 ribbons in canning, 1 each in cooking and sewing, and 3 ribbons for demonstrations. Her total ribbons for 4-H work were 40. She also entered cakes, cookies, jams and preserves, and canned fruit in the open (adults) class in domestic science from which she received 8 additional ribbons (3 blue and 5 red).

The garden club winnings made front page in the Oregon Daily Journal and Carol's baking is being made nationally known through Sperry Flour Company's advertisements in papers and magazines throughout the country. The flour advertisement appeared in the Oregon Daily Journal, September 2, 1948.

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THE 15TH ANNUAL PICNIC

Just why General Chairman Franklin L. Davis stopped counting the people at the picnic when he reached one hundred is not explained. It is definitely known that he knows what number comes next, and that there were more than a hundred hungry diners gathered around the tables in Mt. Tabor Park. It is further known that if anyone left the tables with his hunger unsatisfied it was not for lack of super-excellent food. The coffee committee consisting of Myrtice Fowler, Glenna Teeters, and Almeda Smith had arrived early and had their part of the dinner ready before others arrived. Bruce Schminky, to whom had been given the task of general arrangements for the tables and the seating for the program which followed the dinner, did his job well and will not assume responsibility for the failure of the public address system during the learned lecture by Dr. W. Claude Adams; so that will have to be charged to gremlins.

Some improvements in the "stage" had been made by the Park Bureau during the past year, but a few lamps on tall poles that could be controlled locally would make things nicer for this group, at least.

Dr. J. C. Stevens read, with sympathetic understanding, the script of a short play which had been written by E. N. Bates and Orrin E. Stanley. The cast consisting of A. W. Hancock as Pseudo-Geologist; Leo Simon as Sim Simon, the wealthy dealer in pastries; Rudolph Erickson as Dr. Chinook, professional oil geologist; and Norris Stone as Artemus Shark, a dealer in futures, showed outstanding histrionic ability.

Next came Ada Henley's dinner party at which the guests were served geological specimens with names similar to every-day foods. The actors were Lloyd Ruff, Bruce Schminky, Franklin Davis, Helen Haven, Carol Ann Schminky, and the author, Ada Henley.

Dr. W. Claude Adams, director of music, led the group-singing and sponsored the accordion and vocal numbers by the Rice sisters. He also exhibited a three-horned skull which was said to have been found in the vicinity of Vanport after the flood.

And despite the fact that A. D. Vance was master of ceremonies there was no rain.

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FOSSIL TREE TRUNK

A fossil carbonized and silicified tree trunk was found in a sea cliff at Seal Rock by Mr. Brown, Assistant State Geologist of Ohio. To reach the fossil wood, take drive-in opposite Seal Rock postoffice on west side of highway to path leading to saddle of sand thence down to the left and follow sandstone cliff to a point about half the distance to the next cliff, probably about 300 yards. The tree is sticking out near the contact between the sandstone and lava.

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OIL IN AFRICA ?

Today a specially outfitted Douglas transport plane landed at Lourenco Marques, Portugese East Africa, to begin aerial mapping and an airborne magnetometer survey in a search for new oil resources there over an area as big as the state of Pennsylvania. Aero Service Corporation of Philadelphia, the oldest flying corporation in the world, is making the survey for the Mozambique-Gulf Oil Co,, a wholly owned subsidiary of the Gulf Oil Corporation.

A concession area of 45,000 square miles has been granted to the oil company for exploration and development. The area includes both wooded and savana country and big game abounds in the western part. Though Lourenco Marques is the Miami Beach of South Africa, elephant herds, lions, giraffes, baboons, and other wild animals are found within 75 miles of the city. Existing African maps are inadequate, so precise aerial maps will be made of the concession area by Aero Service Corporation. These photo maps will be used first to guide the plane in the airborne magnetometer survey of the area, then the maps will be used later for the oil company's development planning.

The airborne magnetometer used by Aero Service Corporation is a new oil exploration tool, developed by the Gulf Research & Development Co. It was employed during the war to aid the U.S. Navy's search for enemy submarines in the Atlantic, and in peacetime it now speeds the search for new oil and mineral deposits. A highly sensitive instrument, it measures variations in the earth's total magnetic field. These variations help to reveal the earth's sub-surface structures to oil company geologists, isolating areas for their further study and investigation with ground instruments.

According to Aero Service Corporation, the airborne magnetometer will perform magnetic reconnaissance of the African Survey area at the rate of 150 miles per hour. Aerial mapping will be done at the same speed, many times faster than would be possible for ground parties over this undeveloped terrain.

About six to 12 months will be required to complete the aerial mapping and magnetometer survey. A staff of 15 men - pilots, mechanics, radio operators, photographers, electronic engineers, and mapping experts - makes up the Aero Service survey party.

This survey is one of many aerial mapping or magnetometer surveys performed by the Philadelphia company in Alaska, Canada, Central and South America, and other foreign areas. Aero Service recently completed the first large-scale airborne magnetometer survey ever performed, mapping some 85,000 square miles in the Bahamas for five major oil companies. Other surveys have been made by the company for the mining industry over smaller areas in the United States and Canada.

(From Aero Service Corp.,Philadelphia, July 23, 1948.)

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LUNCHEON NOTES - AUGUST 19, 1948

Summer vacations are suspected of being responsible for the small attendance of fifteen at this meeting. In the absence of higher officers, Director Mildred James called the meeting to order and directed the affairs of the society until time for adjournment when Vice Pres. Leo Simon hurried in to make the announcement that there would be a trip to Silver Creek Falls on Sunday the 22nd, and to then declare the meeting adjourned.....Eliza Stevens brought specimens of agate and wood, Miss Hughes had some samples of native copper from the Hecla Mine in Mich. that were very interesting, and Glenna Teeters had brought a piece of granite from Payette Lakes, Idaho.

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LUNCHEON NOTES - JULY 8, 1948

Among the nineteen members present at this luncheon were seven mosquito-bitten veterans of the Fourth of July trip up the McKenzie River from its mouth to its source in Clear Lake. There were also two guests, Hazel R. Newhouse and Helen B. Ross, who were introduced by Dr. Ruth Hopson.....President Libbey opened the specimen exhibit with an interesting piece of calcium iron (hedenbergite) pyroxene from near the southeastern corner of Oregon.....Leo Simon had a pretty specimen of calcite from the State of Washington that he had secured from V. D. Hill of Salem. This was a rhombohedral crystallization. He also had a burn across his manly chest, made by adhesive tape applied to ease the distress of a broken rib which he acquired when he contacted a piece of granite on the McKenzie River road. The injury to his camera was more permanent but less painful -- neither of these interesting injuries was shown publicly.....G. V. Elder gave away specimens of fluorescent minerals from Montana, and showed a printed poem, almost obliterated by red ink, and a copy of it which had been made photographically by O. E. Stanley, using panchromatic film and a red filter.....A. D. Vance had a newspaper clipping telling about the capture of a thief by Helen Cole. He introduced a resolution (which was unanimously adopted) commending her services to anyone in need of a capable bodyguard.....Dr. J. C. Stevens called attention to a combined geological and Shakespearian trip to Ashland in August. He and Dr. Adams are planning to go and both recommended the trip to others.....Just to keep others from feeling too badly about missing this meeting, it might be mentioned that the asparagus was at that uninteresting stage between edibility and fossilization, but fortunately there was not enough to serve the entire group.

* * * * *

JULY 15, 1948

The luncheon group was saddened by news of the sudden death of Dr. Booth on the preceding Tuesday. Miss Henley, speaking briefly, told of the sudden ending of a long and beautiful life.....Mr. Libbey circulated a copy of the Geological Review containing an article on the "Ronne Antarctic Research Expedition" of which Dr. "Bob" Nichols was a member.....May Dale brought a box of assorted specimens.....Dr. Ruth Hopson told of wood that had formerly been considered waste material on account of partial decay, that is now being made into Kraft paper. The country near Vernonia is being re-logged to salvage this material.....Miss Stevens had a sample of ginkgo wood from near Goldendale. ....Dr. Hodge had made a recent trip to Roads End and, cancelling all former opinions, now believes that the end of the point blew off in volcanic action. He found many evidences to substantiate this new theory.

* * * * *

July 29, 1948

Twenty-five members and guests were at the Chamber of Commerce for luncheon, which number is not bad for a vacation period. The Oberson family had a 100 percent attendance with Mary Louise, who, though very young, received a regular introduction from her mother. Miss Mella White and Miss Clara Nelson, who have returned from vacations spent in Alaska and the Wallowas respectively, described high points of their trips. Miss White had a specimen of granite and epidote (?) from Alaska. Tom Matthews had specimens of Mt. Angel tuff sawed into a block, and pumice shaped into a piece for "taking callouses off feet." Lon Hancock had a sample of the rare and somewhat mysterious fossil fern found by him near the Burnt Ranch in the Mitchell quadrangle of eastern Oregon. Dr. Arthur Jones sought, without success, to obtain some further information from those present concerning a newspaper item describing volcanic phenomena recently observed near Mt. Lassen in California. He also mentioned discovery of laterite similar to Washington County laterite in a well sunk near Scholls.

* * * * *

August 5, 1948

President F. W. Libbey had no difficulty in keeping the seventeen members and two guests in order during the meeting. . . . .Dorothea B. Kearns was Mrs. H. Bruce Schminky's guest. . . . .Orrin E. Stanley introduced his brother Charles of Seattle who had collected rocks on their two-thousand mile circuit of Washington and Oregon and brought some specimens with him. Not to be outdone, Orrin distributed specimens of gypsum crystals that he had kept in storage for two years. They came from Ellsworth, Kansas. He also had a piece of red salt from the same location and two other rocks which are still unidentified. . . . . President Libbey had a sample of high grade silver ore from the 3000-foot level of the No. 3 vein of Silver Summit mine in Wallace, Idaho. It assays 236 ounces of silver to the ton of ore which makes profitable digging at 90½ cents an ounce. . . . .H. B. Schminky had a piece of lava from Mt. Tabor in which was imbedded a rounded pebble. . . . .Franklin L. Davis told of a book he had been reading -- "Human Destiny" by Gates. He said that it is as important an addition to literature as was "The Ascent of Man" by Darwin when it was written eighty years ago. Mr. Davis did not wish someone to return the book to the library for him. . . . .The approaching picnic and possible field trips were discussed informally.

* * * * *

August 26, 1948

Including Mary Lou Oberson, there were twenty-one members at this very interesting meeting. If Mary Lou does not suffer loss of charm in the next fifteen or twenty years she will be pretty nearly the whole show at any gathering which she graces with her presence. . . . .Ada Henley exhibited a beautiful specimen of chrysocolla (not to be confused with the popular cola drinks) from California. . . . .Tom Matthews had a geiger counter tube -- not at all interesting to look at, but intensely so for what it can do. . . . .Myrtice Fowler brought a pretty pink cameo that any lady would be proud to wear. . . . . President Libbey had specimens of crystallized dolomite, orthorhombic quartz and two concretions which he thought were from the vicinity of Dayville. He also called attention to a remarkable colored photograph of a rare specimen of adamite (hydrous zinc arsenite) from Mapimi, Mexico. This was printed in "American Mineralogy." . . . .Ellen James had brought a large specimen of micaceous specular hematite that came from Eagle Bar, Adams County, Idaho. . . . .President Libbey called attention to the recent death of Dr. Ward Anderson. . . . .A specimen of stibnite mounted on a myrtlewood base by Mr. Wiegand and to be presented to the Oregon Museum Foundation by F. L. Davis was exhibited. . . . .Orrin Stanley had several sheets of photographs of the activities at the picnic that were viewed with varied emotions by the subjects of his camera. . . . . Leo Simon reported on the Silver Creek Falls trip of the 21st and Louis Oberson told interestingly of his summer's work in California.

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MEMBERSHIP APPLICATION
GEOLOGICAL SOCIETY OF THE OREGON COUNTRY

Qualifications and dues:

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

Date . . . . . .

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

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

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

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

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

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

Sponsored by_____
(member)

_____
(signature)

SOCIETY ACTIVITIES

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

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

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

OCTOBER MEETING ANNOUNCEMENTS

Friday Oct. 8 — Dr. Henry P. Hansen, Professor of Botany, Oregon State College, will give an illustrated lecture entitled "Postglacial forest succession, climate, and chronology in the Pacific Northwest."

Friday Oct.22 — Joint meeting with the Agate and Mineral Society to hear Dr. George F. Beck lecture on fossil woods. This will be an outstanding meeting and all members will want to attend.

FIELD TRIP ANNOUNCEMENT

The October field trip will be announced at meetings and in local papers.

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SHOWCASES FOR YOUR SPECIMENS

Members of the Oregon Museum Foundation who wish to obtain the use of glass showcases for the display of their specimens at home may file their applications with L. W. Bartow, chairman of the Service Committee, who will notify you later when and how the cases will be delivered.

These cases are about five feet long by two feet wide and perhaps sixteen inches high. They are now on tables, and it is possible that the tables are included in the offer. These cases were formerly in the Portland Free Museum in the city hall and will not be needed in the quarters to be occupied by the Oregon Museum Foundation. They will be loaned to members of the Foundation for indefinite periods, subject to possible recall.

You can see what these showcases look like by going to the Municipal Auditorium at times when the people are working at reclassifying the specimens, and perhaps Mr. Ruff may be able to use some of your spare time in the cataloguing.

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CONDON'S TWO ISLANDS

Miss Eliza Stevens, Bonneville, Oregon, writes as follows:

"A friend of mine has a copy of Condon's Two Islands in good condition that she'd like to sell. Hyland will not offer anything for it although he holds the copies he has at $25.00 - $35.00. Do you suppose any of our members would be interested?"

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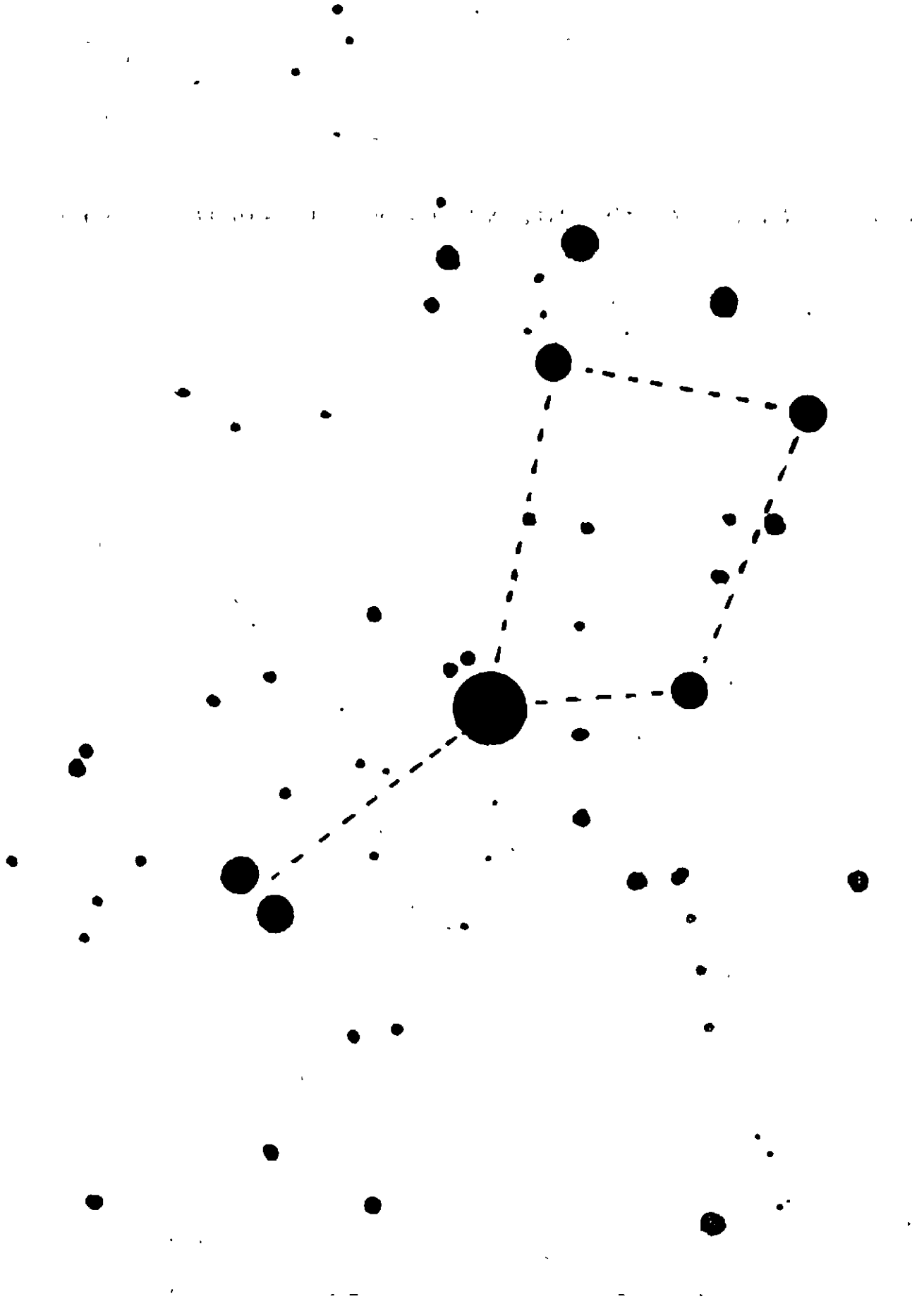

THE PLEIADES

This is about twice the size of this constellation as seen through 7 x 50 Zeiss prism binoculars when they are mounted steadily on a tripod.

THE PLEIADES, THE BEAUTIFUL DAUGHTERS OF ATLAS

by
J. Hugh Pruett
Astronomer, Oregon General Extension Division

"A goddess has lost her necklace,
Of topazes, wondrously fair,
And it lies, a shimmering tangle,
On heaven's blue tapestried stair."
(From "The Pleiades" by F. Ina Burgess)

As the last of a clear Indian summer twilight fades into the October night, there is faintly glowing over the eastern horizon a tiny luminous cloud. There is a distant mystery surrounding this nebulous patch of light. Closer attention shows it to be a compact cluster of little stars arranged in the form of a very small dipper.

Known since ancient times as the Pleiades,* this "shimmering tangle" of little stars has been an inspiration to the poets of all ages. "The magic of their quivering misty light has always made a strong appeal to men of imagination, and minstrels of the early days sang of their bewitchment and beauty." The Grecians, Homer and Hesiod, wrote of them. The ancient Hebrew asked, "Canst thou bind the sweet influences of the Pleiades?" Wrote Milton, "Dawn and the Pleiades before him danced, shedding sweet influence." Tennyson said of this group, that it "glittered like a swarm of fireflies tangled in a silver braid."

In mythology the Pleiades were seven sisters, daughters of the nymph Pleione and the giant Atlas, who carried the world on his shoulders. One story concerning the sisters relates that because of their beauty Orion, the Mighty Hunter, greatly admired them and caused considerable annoyance by running after them. The maidens finally appealed to the great Jupiter, who was moved to pity and changed them to doves so they might fly away to the safety of the eternal heavens, where we still see them. Some even now in fancy claim to see this cluster as a flock of flying birds.

It is easily noticed that when the Pleiades are looked at indirectly they give far more light than can be accounted for by the few naked-eye stars making up the group. The explanation is clear when only slight optical aid is employed. These brighter stars seem entangled among numerous fainter ones, many just below visibility to the unaided eye. Unknowingly, we are receiving the collective light from numerous background stars too faint to be perceived individually.

Good field glasses - even opera glasses - give charming views of this beautiful cluster. Through prism binoculars with wide front lenses these stars are very numerous and bright, as many as 60 appearing in the field of view. When the group is just high enough to clear the haze of the horizon, this type of optical aid makes of it a "twinkling starry host," unexcelled in beauty by any other assemblage of stellar objects in the sky.

Although only six stars may be seen in the Pleiades by most observers, yet good eyes can often detect seven, or even nine. So excellent was the sight of Professor William H. Pickering of Harvard that he could count 13 when "seeing" conditions were the best. Professor Percival Lowell of Flagstaff, Arizona, said he could see 16. These astronomers announced detecting finer details on the surface of Mars than is possible through the eyes of most telescope users.

*Pronounced PLEE-ya-deez.

We sometimes see literary references to the "lost Pleid." Since this group is often referred to as the Seven Stars, it may be that one has dimmed since ancient times. But we are not so sure about this since there seems to be a great diversity of opinion among poets as to which is the lost sister.

The Pleiades are an actual group of stars in the same general locality in the depths of space. The generally accepted distance now assigned to them is so great, 3,000,000,000,000,000 miles, that their light which reaches us tonight started on its almost inconceivably long journey about 500 years ago. (Light travels 186,270 miles per second in the high vacuum of interstellar space.)

You will see that the Pleiades dipper has only one star in the handle. The star Alcyone,* which joins the handle to the bowl, is the brightest of the entire group. The star at the end of the handle becomes a double with sufficient optical aid. The tiny dipper of the Pleiades is not the true Little Dipper of the skies. The latter has the North Star at the end of the handle and is a considerably larger figure.

Powerful telescopes show multitudes of stars in the direction of the Pleiades, but only about 500 are thought actually to belong to the group, all members of which are receding from us at around five miles per second. Long photographic exposures show some of the brighter stars so engulfed in nebulosity that they are about lost in this haze. It is now thought that this is dust and gas of a nonluminous nature which is lighted by the neighboring stars. Spectroscopic analysis shows that the light is the same as that of the stars, so is surely from these originally.

For those desiring a closer acquaintance with these bewitching stellar maidens - for when once sighted they do hold one's attention in a strangely mysterious manner - perhaps their names will be of help. Classical records avow that in the dim past these were the beautiful sisters: Alcyone, Merope, Electra, Celaeno, Maia, Taygeta, and Asterope.

Look for the shining sisters somewhat north of east rather early in the evening, shortly after 8:00 p.m., standard time, at this time of year. As they climb higher in the sky, they swing toward the south. They rise four minutes earlier each succeeding night. Those poetically inclined will surely thrill to the beauty of this tangle of celestial jewels, softly shimmering through the haze along the horizon.

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*Pronounced Al-SI-o-nee.

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STOP YOUR KIDDING

Shall the Geological News Letter lay aside its mask and deal hereafter only in prosaic facts as probably befits its status as the publication of a scientific organization, or may it occasionally step aside from the straight and narrow path to indulge in the juggling of words for the enjoyment of the writers, in the hope that many of the readers will experience a similar relaxation? This question is suggested by an extract from a letter written by J. Hugh Pruett to the editor, and reproduced below.

> Three different people evidently misunderstood the announcement of the annual picnic on Mt. Tabor as stated in your July issue. The first was a woman in Portland to whom I sent a copy of my Will-o'-the-Wisp story. She wrote back, "How do they know the mountain is going to erupt on that evening? I'll be interested to learn if they

are right." A woman in Walla Walla wrote, "I notice only one mistake in the G.N.L. They misspelled 'lava' by starting the word with 'j'. I shouldn't think that they would want to be fooling around there if they are sure there is to be a volcanic eruption." Then from a physician friend at Palo Alto, California: "I notice the printer's devil put one over on the editor and spelled 'lava' as 'java'." The Walla Walla reader was quite "red in the face" according to her report after I had explained to her. She used to live in Portland and found several names in the G.N.L. she knew. She comforted herself by saying, "Well, if a California doctor is as dumb as I was, I do not feel quite so bad about it."

Perhaps we should add for the information of those unfortunates who were not able to attend the annual picnic, that java flowed freely at the supper tables, and that when the Pseudogeologist drove his pick into the ground to emphasize his remarks at the close of the play, there was an eruption of a liquid which was supposed to have been java or lava, but which we suspect was from Franklin L. Davis' bottle of carbonated water. At any rate, it was a spectacular ending to a splendidly acted play. Our absentee members have our sympathy for not having been able to be present on this delightful occasion. Better luck next time.

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THE FIRST RED MEN

The first red men encountered by white explorers in the New World were a relatively hospitable, peaceful, and industrious people, dwelling in established communities with orderly forms of government, who fell just short of what would be considered "civilization."

These were the Arawaks of the Greater Antilles - the now nearly extinct aboriginals of the Bahamas, Cuba, Jamaica, Haiti, and the Dominican Republic - with whom Columbus established his first contacts. They are the subject of a lengthy publication just issued by the Smithsonian Institution in cooperation with the Department of State. This is part of an exhaustive handbook on all the South American tribes which now is in course of publication.

Information on these people has been sparse and scattered. Native ways of life disappeared so quickly after the Spanish occupation that only fragmentary and often confusing accounts were preserved. Their settlements, although substantial, were of wood and cane and left little for the archeologist. Essentially the sum total of knowledge concerning them has been compiled for the Smithsonian project by Dr. Irving Rouse of Yale University.

The Arawaks, it is clear, were not the original inhabitants of the West Indies. Like the Spaniards, they had come as conquerors, explorers, and immigrants, but apparently they had been there long enough to build up a stable society and develop distinctive ways of life. These relatively peaceful people were ill-fitted to survive competition with the Spaniards.

During his second and third voyages Columbus subdued most of the aboriginals of the island of Hispaniola - now Haiti and the Dominican Republic - and extracted from them a tribute of gold, to be delivered each three months. Succeeding governors, when this tribute was not forthcoming, required that each chief supply a certain number of his men to work in the Spanish gold mines.

This system of so-called "repartimientos" was fatal to the natives. The Indians were overworked and ill-fed. Some starved and others killed themselves. Mothers killed their children. Smallpox swept over the island. Within less than 50 years after the first Spanish landing there were less than 500 left alive out of an original population estimated at about 200,000.

Between 1540 and 1550, when Hispaniola's gold had been exhausted, the system of repartimientos was abolished, but the damage had been done. When Sir Francis Drake visited Hispaniola in 1585, he reported that not a single full-blood Indian was left alive. The fate of the aboriginals was the same in Puerto Rico and Jamaica, which were settled by the Spanish in 1508 and 1509 after the conquest of Hispaniola had been completed. In the Bahamas also the Indian population was destroyed before 1600 as a result of slave raids undertaken by the colonists of Hispaniola to replenish the diminishing supply of Indians on that island.

The situation was much better in Cuba. This was the last area conquered by the Spaniards in the West Indies, and its large expanse allowed many of the native groups to avoid the slave hunters. When the repartimiento system was abolished in 1550, the aboriginals still outnumbered the Spaniards - about 2,000 to 700. The original population has been variously estimated at 16,000 to 600,000. It probably was roughly the same as that of Hispaniola. The survivors were allowed to set up towns of their own near the chief Spanish settlements, to own their own property and govern their own affairs. For a time they prospered. As late as the middle of the eighteenth century they established one new town - Jiguani, in the eastern part of the island. There was, however, much intermarriage with the conquerors and adoption of European ways of life. By 1900 about 400 essentially pure-blooded natives still remained, but almost all traces of the native mode of life had disappeared.

These Cuban Arawaks were the original searchers for the "fountain of perpetual youth" in Florida, which later drew Ponce de Leon to that country. About the time of Columbus's first voyage a group of them migrated to Florida under the leadership of a chief named Sequene. They founded a town called Abaibo somewhere in southern Florida, established some sort of control over the original inhabitants, and maintained a fairly constant contact with their homeland. Their eventual fate is unknown.

At the other end of the Antilles Columbus discovered Trinidad in 1498. The island was not settled, however, until 1584 when the Spanish governor De Barros made it a base of his search for the legendary El Dorado. The Indians, however, did not escape unscathed. Many were captured in slave raids. European diseases were introduced. Hundreds were slain resisting De Barros. When the British captured the island from the Spaniards in 1797 only 1,082 natives were left. Approximately 200 of predominantly Indian blood still survive in one village, Arima.

These Arawaks were essentially a race of small farmers. Their chief crop was manioc, the root from which tapioca is made, which was their chief food. Corn also was a major crop. Every few years fields were abandoned as they lost their fertility, and new clearings were burned out in the forests.

They lived in towns and villages, the largest of which contained as many as a thousand houses with a population of about 3,000. Nearly every settlement contained its ball court, a flat, rectangular area surrounded by an embankment.

The houses had timber frameworks with thatched roofs, walls of thick canes bound together with rattan, and dirt floors. About the only piece of furniture was the hammock.

Clothing was practically unknown. Washing was a common custom both for cleanliness, which the Indians prized highly, and for prevention of disease. Better than the Spaniards, they recognized the value of sanitation. Both sexes painted themselves - some red and others black, white, and yellow, or a combination of all four. Men generally preferred red and women white. Warriors were accustomed to paint their whole bodies red. They wore ear and nose ornaments of gold, silver, bone, or shell suspended on cords. Necklaces were common, especially among the upper classes. Each family handed down its beads from generation to generation.

The Arawaks traveled chiefly in dug-out canoes made of cedar and cottonwood. The largest of these could carry 70 to 80 men. There were no roads. Paths through the jungles were just broad enough for a single man to pass.

Gold was used only for ornaments. The Indians washed it from the mountain streams. They knew how to beat the metal on pieces of stone, but not how to smelt it.

Hispaniola at the time of Columbus's first voyage was divided into five provinces, four large and one small, each of which had its chief or "cacique." Under him were about 30 subchiefs in charge of local districts, and 70 to 80 headmen in charge of villages. Some of these exercised despotic power, but the sytem of government seems to have varied considerably from province to province, depending largely on the personality and force of character of the cacique.

Chieftainships were hereditary in the maternal line. Each cacique was addressed by a series of five titles which he inherited with his office. He was entitled to special food, special houses, special dress and ornaments, and special modes of transportation. In some cases he had power of life and death over his subjects. At least one of them was so exalted that he spoke to ordinary people only through intermediaries.

Under the chiefs was a hierarchy of social classes - nobles, commoners, and "slaves." The status of the latter is quite obscure. Polygamy was common among men who could afford to support several wives. One cacique had 30.

The Arawaks believed in the existence of spirits not only in their own bodies but also in trees, rocks, and other natural objects. There was a "paradise" to which the dead went - a remote valley called Coaibai somewhere in Hispaniola. The Indians believed that by obtaining control over the spirits of nature and of their ancestors they could gain supernatural power. The presumably obtained this power by constructing images of wood, stone, shell, and even gold, known as "zemis." Everybody had at least one, and some as many as ten. A chief kept his zemis in a special house. These images were in the shapes of grotesque human beings. (From the Smithsonian Institution, Aug. 8, 1948.

****

CHANGE OF ADDRESS

Ellen L. James, 1870 Reed Street, Eugene, Oregon, Phone - 3731-W

* * * * *

ANOTHER PAID-UP MEMBER

Mrs. R. F. Cleveland, 168 N.E. Lombard, Portland 11, Oregon

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LUNCHEON NOTES

September 2, 1948

Seventeen members, including Donald O'Connell, met at the usual time and place for food, geological discussion, and chit-chat.....Donald had a sack of samples of rhodochrosite which he distributed with a free hand. These specimens came from Montana where Donald had spent some time this summer between a conference of the Western Psychological Association and the opening of the school year. He will be at Swarthmore College for the coming year as assistant to a professor of psychology, doing research work.....Dr. Adams brought specimens of quartzite, graphitic chloritic schist, and serpentine from southern Oregon and northern California.....Rudolph Erickson had some fossil shells from the Oregon Coast.....President Libbey had a nicely polished (by the wind) dreikanter, or facetted pebble, from Wyoming where the wind is said to really blow.

*****

September 9, 1948

Thirteen members gathered in the corner of the main dining room on this hot September day. A letter from Dr. John Eliot Allen was read. He reports that summer school is over and that he and his family are busy carpentering, gardening, and painting.....A card from the Raymond Baldwins and one from Mrs. Stockwell were passed around the table.....Rudolph Erickson showed a specimen of rock from the Frank slide in Alberta, and told some of the history of the catastrophe which claimed 66 lives from the little mining town of Frank when the face of Turtle mountain broke loose and spread over about a square mile of the valley.

*****

September 16, 1948

The usual members of the luncheon group were reinforced by Dr. and Mrs. Francis Jones who have not been in Portland for several years, and "the Phillips Twins," Clarence D. and Kenneth N.....Dr. Thayer who has been working in the John Day region told of his work.....Dr. Jones introduced his guest, Dr. Glen Bailey.....Miss Henley had some specimens from California, and Mr. Vance one from Short Sand Beach.....A California mineral magazine was shown which contained an account of the death of Dr. Booth and of his interest in rocks and minerals..... It was announced that the former City Hall collection is now the property of the Oregon Museum Foundation.

*****

September 23, 1948

Dr. J. C. Stevens introduced Mr. Repp who is here from Santa Barbara, Calif., to prepare and arrange specimens for the Museum Foundation. He said that getting a new museum started is really a tough assignment. He went from Denver to Santa Barbara in 1923 for a six-months trip, having bought a round trip ticket from Denver, stayed on the job for 25 years during which time the staff of the museum had grown to 12 full-time workers.....Mr. Ruff asked for volunteer workers to help with the classifying of the old city hall collection.....There was some discussion about future trips, but no decision was made.

*****

September 30, 1948

Some members of the luncheon group seem to have an uncanny way of knowing which days the group is to meet in the large dining room, for these meetings are noticeably smaller than the ones in the more pleasant smaller rooms. Only 15 members, including Mrs. Gordon from Salem, were present. Mrs. Gordon brought some excellent specimens of fossil leaves from Harney and Malheur counties.....Mr.Libbey brought his pockets full of rocks including zoisite, chalcocite, pectolite, and melilite, all of them silicates.....Mrs. Gordon says that the Salem Geological Society is correlating the fossil leaf locations. She called particular attention to the Chinese water chestnut in dark shale, included in the group she showed..... Mr. Hancock brought a beautiful specimen of argillite on which was a mineral growth of manganese, strongly resembling moss or ferns, and thought by many people to be of vegetable origin. This is a Pre-Cambrian rock from Montana.

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MEMBERSHIP APPLICATION
GEOLOGICAL SOCIETY OF THE OREGON COUNTRY

Qualifications and dues:

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

Date . . . . . .

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

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

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

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

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

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

Sponsored by _____
(member)

_____
(signature)

SOCIETY ACTIVITIES

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

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

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

NOVEMBER MEETINGS

Friday Nov.12 — No meeting. An Audubon Society lecture will be held on this date.

Friday Nov.26 — "The John Day Country, Oregon's Lost World," a talk by Mr. A. W. Hancock. Specimens from the locality will be displayed.

NOVEMBER FIELD TRIP

If a field trip is planned it will be announced at meetings and in the local newspapers.

* * * * *

NOMINATING COMMITTEE

Mr. Kenneth Phillips
Mrs. Lloyd Ruff
Mr. Rudolph Erickson
Miss Glenna Teeters
Mr. A. D. Vance

* * * * *

BULLETIN ON CASCADE RANGE AVAILABLE

The State Department of Geology and Mineral Industries has secured a limited supply of the Oregon Bureau of Mines and Geology bulletin: "Some Scenic Pleasure Places in the Cascade Range in Oregon" by Ira N. Williams (1916).

Members of the GSOC who do not already possess one of these bulletins may obtain a copy free at the Department office, 702 Woodlark Building, for as long as the supply lasts.

* * * * *

NEW MEMBERS

Charles E. Kirschner, 702 Washington Street, Olympia, Washington.
(Mr. Kirschner is a geologist with the Union Oil Company of California.)

James A. Macnab, 2703 Hemlock Street, Longview, Washington. Phone 1794-W
(Mr. Macnab teaches biology and geology at the Lower Columbia Junior College.)

RENEWED MEMBERSHIP

Alva Oakes, 218 N. W. Flanders Street, Portland 9, Oregon.

PAID-UP MEMBERS

Dr. and Mrs. John H. Hershey, C/o Veterans' Administration Hosp., Roseburg, Ore.
(Dr. Hershey, in rewriting his subscription to the News-Letter, says that he is now located at the Veteran's Administration Hospital in Roseburg. He hopes that he may find a group interested in geology at his new location. We join him in that wish.)

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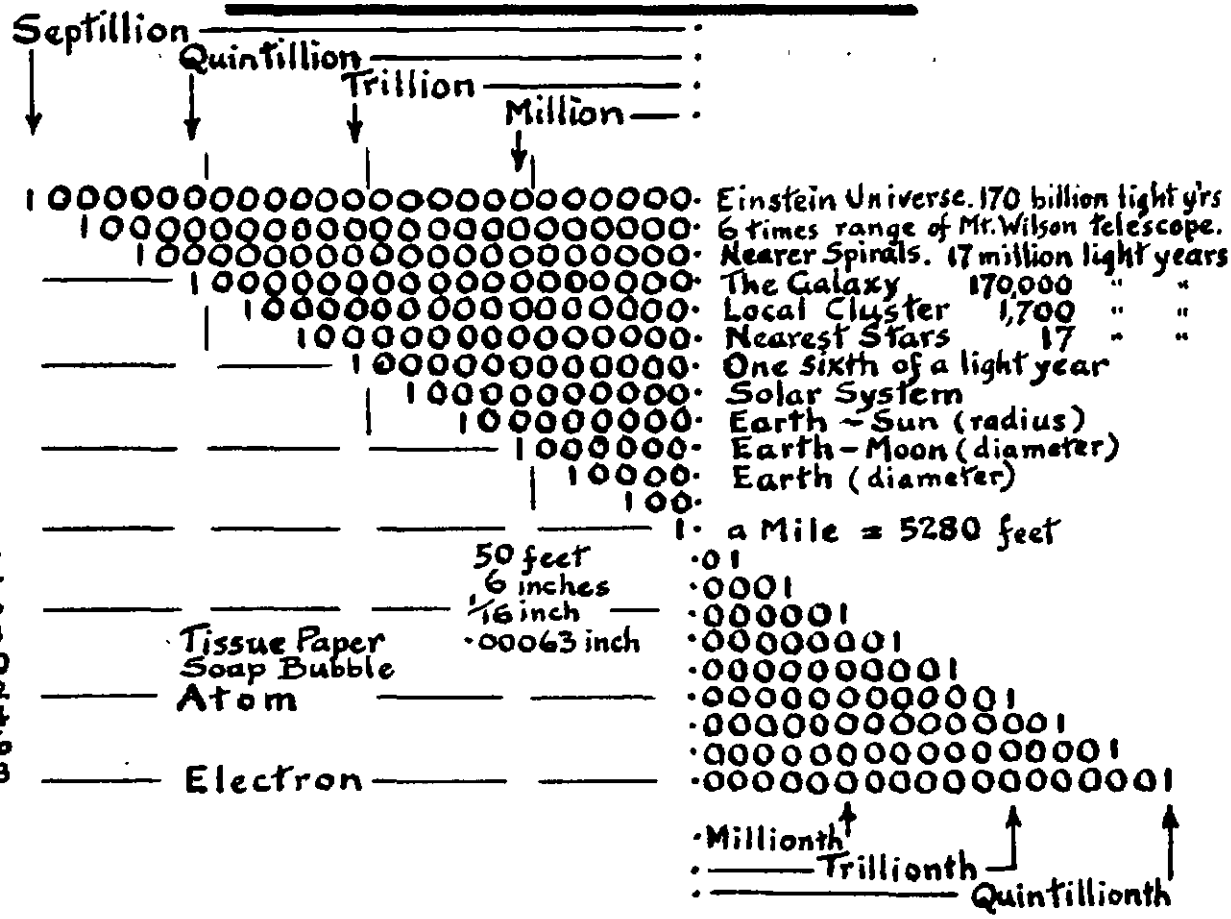
Relative Sizes in Miles



1 Light Year = $60'' \times 60' \times 24^h \times 365.26^d \times$ Velocity of Light

= 31,558,464 × 186,324 = 5,880,099,246,336.

Seconds in 1 year — miles per second — Miles

or nearly 6 million million

C.P.R.
Dec. '42

AN AID TO THE VISUALIZATION OF ASTRONOMICAL VALUES

By
Carl Price Richards

One of the most widely used methods of teaching is by means of comparisons -- the process of comparing the unknown with the known. It is extensively used in ordinary conversation; a person wishing to tell another what kind of a man a certain Mr. X is, compares him to Mr. Y, with whom both are acquainted, possibly adding some qualification such as being taller or heavier. It is used constantly in such phrases as "quick as lightning," "eyes like an eagle's," "as white as snow." Frequently the comparison is a gross exaggeration, but, nevertheless, serves the purpose. When endeavoring to convey conceptions of scientific phenomena, analogies are often essential. One recalls the admonition at the beginning of the elementary textbook on electricity to help the student to visualize the nature of an electric current - "imagine water flowing through a pipe." That analogy, of course, needed very extensive qualification, but served as a basic idea upon which to build the true conception.

One might also cite biblical authority for teaching by comparison. There it is stated that One who was the Prince of Teachers "spake in parables." To convey conceptions of abstract ideas He constantly used comparisons, such as "the kingdom of heaven is like unto . . . ," always selecting that which was familiar to his audience for a symbol of the ideas He was teaching.

In the astronomical field analogies of various kinds are extensively used to enable the serious student, as well as the general public, to grasp as nearly as possible a true conception of dimensions and distances encountered in the realm of the stars. The most common of these is the comparison represented by the mental picture of "an express train traveling at 60 miles an hour continuously day and night" from the earth to some planet or star, and telling how many years it would take to reach its destination. In recent times that picture has been modernized by substituting an airplane at 300 miles an hour in place of the train at a mere 60 and, accordingly, is probably more realistic to the present air-minded generation. In Herschel's day, presumably, the comparison was to the stagecoach at 8 miles an hour. Hence, at any rate, we advance with the times in such things, though it is probably true that the conception conveyed by each analogy was, respectively, equally clear to the people of each period.

Another frequently used analogy is that of the scale model. This usually takes some such form as comparing the sun to a large pumpkin at the corner of Broadway and Main, then the earth would be the size of a cherry seed a block away; Jupiter would be like an orange a few blocks further on; while Sirius would be represented by a big boulder on top of yonder hill so many miles from town. Other schemes might be cited; all have more or less merit and one or another of them, doubtless, has served as the sole mental picture of astronomical distances to many individuals throughout their lives.

A somewhat more technical method, which encompasses the whole gamut of physics from electrons to universes, is shown in the accompanying table. To appreciate it one needs an arithmetical sense, but given that, it carries with it a conception which can be very helpful in visualizing the vastness of astronomical dimensions and the minuteness of physical entities. The basic idea is that every line represents a multiple or submultiple of the same unit - the mile. Unfortunately, the use of that nonmetric unit has necessitated "slipping a cog" in one or two of the comparative figures, such as 50 feet, which is not exactly one hundredth of a mile. It is close enough, however, and does not affect the general purpose of the table, which is to assist one in making mental comparisons.

It should be kept in mind that the figures represent lineal values and that each line indicates 100 times the value of the line immediately below it. And it should also be realized that in square area, each line is 10,000 times the one below, and the cubic space represented is a million times that indicated by the succeeding line.

For instance, take the .01 mile line, (which for convenience, as stated above, has been compared to 50 feet), this lineal value is 100 times the one below it called .0001 mile, or 6 inches. It is obvious that there are 10,000 six-inch squares in a 50-ft. square; also that there are 1 million six-inch cubes in a 50-ft. cube.

Now, to clinch the conception, pick out some four-story building down town, which has a 50-ft. frontage, preferably at a corner, and compare it with a 6-inch cardboard box which approximates a cube. The relative volumes are as a million is to one, the same as indicated in this table by any one line relative to the line next to it. A good grasp and visualization of this relationship will help greatly to a comprehensive appreciation of the proportions of many astronomical values, typical examples of which are cited opposite some of the lines. Thus, the earth-sun radius of 93 million miles typifies the 100 million shown on the fourth line above the unit mile; and the 10 billion miles of the fifth line affords a comfortable margin over the actual distance across the solar system, the relation being roughly one to a hundred.

Similarly, where a volumetric conception is desired, as with the local cluster and the galaxy, which appear on adjacent lines, it is indeed impressive to realize that their spacial relation is of the same order as that of the cardboard box to the four-story building, or one to a million.

The derivation of what might be termed the astronomical yardstick, the light-year, is given below the table and several of the higher mileage figures are compared with light-year values. Another frequently used yardstick is also approximately indicated; the earth-sun radius, often called the astronomical unit, and usually taken as 92,900,000 miles, is closely approached by the 100 million line. Hence the lines above it indicate successive hundred multiples of such a unit.

Conversely, with the fractional values of the mile as one goes down the table, each line represents one hundredth the linear value of the one above. Thus one quickly descends into the diminutive of the physical world.

Regarding the table as a whole, it goes from the ultra-big to the ultra-small; from the super-telescopic to the sub-microscopic. The transition is by uniform steps, each of 100 linear, 10,000 superficial, and 1,000,000 volumetric units greater or smaller than the adjacent ones. It might be that it was a table like this which that anonymous wag had in mind when he perpetrated that delightful doggerel which runs somewhat as follows:

The big fleas have little fleas
Upon their backs to bite 'em;
Little fleas have lesser fleas,
And so ad infinitum.

And the great fleas in their turn
Have greater fleas to go on;
Greater still have greater still,
And then, so on and so on.

The lower portion of the table portrays the field of the physicist, and the upper part seeks to cover the realm of the astro-physicist. The possibility of unlimited extension of this table below its lowest fractions and beyond its upper limits would seem to point to the truth of those cynical definitions which described, first, the physicist as "one who is constantly endeavoring to find out more and more about less and less, till, ultimately, he expects to know everything about nothing."

Then, in contrast, is pictured the astro-physicist as "a scientist who realizes that, relatively, he knows less and less as his horizon extends more and more, till ultimately, he fears, he will know nothing about everything."

That, of course, is a case of reductio ad absurdum, but, can one wonder at the conclusion when it is pointed out that the anagram of "ASTRONOMERS" is "NO MORE STARS!"

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IT'S TIME TO STOP BORING

For program chairmen, Grit Chamber offers time-limit suggestions - some theoretical, some effective, and others of doubtful value. This is done in the interest of promptness among members of a profession who never worry about time when there is a job to be done. Here are some ideas to make speakers clock-watchers:

(1) Use a traffic signal, like the device used in some luncheon clubs, with a red light that goes on when time is up; (2) use a raucous buzzer that goes off at an ordained time, drowning out the dallying speaker; (3) put speakers on-stage with a curtain that is lowered when the time is gone, leaving the slow speaker talking to an unappreciative drape; (4) put speakers over a trap door that will open two minutes after the deadline, guaranteed to get speakers off the program even ahead of schedule; (5) use the India club's idea of making the speaker talk on one foot, with the speech over as soon as the other foot touches the floor; (6) use a bouncer who has the courage, which most chairmen lack, and who will tap the speaker publicly on the shoulder and say, "That's all, brother."

The final suggestion, not previously disclosed to the public, is the dispensing of under-tongue lozenges to every speaker, with the admonition that when the lozenge has dissolved, the speech is over. The lozenges could be made up for 15-minute, 30-minute, and 45-minute dissolving rates for all kinds of speakers.

The idea sounds good for men who take out their watches, place them carefully on the lectern - and proceed to forget them, but a minister failed completely with one of our time-lozenges. Instead of a 15-minute sermon, he talked for over an hour because the lozenge he slipped under his tongue turned out to be a suspender button.

Knowing that all of the above may fail in a pinch, we offer the idea of posting in front of the speaker's stand the succinct motto: "If you fail to strike oil in 30 minutes, it's time to stop boring."

From "The Grit Chamber" in Sewage Works Engineering.

****

DRUM MOUNTAINS METEORITE

A report on the eighth largest meteorite yet found in the United States, a mass of sky iron which weighs 1,164 pounds and whose surface reveals some unusual features, has recently been released by the Smithsonian Institution.

This is the so-called Drum Mountains meteorite from Utah, discovered by chance in 1944 by two Japanese from a nearby relocation center set up for enemy nationals during the war.

These two, Yoshio Nishimoto and Akio Ujihara, were conducting classes in gem cutting for the internees. They were exploring the countryside for materials suitable for classroom demonstration of their art when they came upon a large rock protruding about 2 feet above the ground, the striking appearance of which attracted their attention. Mr. Nishimoto chipped off a piece and sent it to the Smithsonian. The entire object now has been brought here and subjected to chemical and metallographic examination by E. P. Henderson and S. H. Perry of the Smithsonian staff.

Iron meteorites frequently show broad, shallow depressions on their surfaces, which are popularly known as "Thumb marks." This iron has deeper depressions, unrelated to the so-called thumb marks, which have also been observed on some other iron meteorites. They have been previously explained by weathering or rusting out of some constituent after the meteorite landed on this earth or by the burning out of troilite, a sulfide of iron, during the flight of the mass through the earth's atmosphere. Henderson and Perry offer a new interpretation of these deeper depressions, suggesting that they may have been in existence prior to the time the meteorite entered our atmosphere.

The iron was found resting almost entirely on the surface of the ground. L. B. Aldrich, director of the Smithsonian Astrophysical Observatory, estimated that this 1,164-pound meteorite must have had a force of at least 20,000,000 foot-pounds when it struck the earth. There was no evidence of a crater in the formations in which the iron was discovered, and the surface of the meteorite is surprisingly free from any evidence of an impact of this order of magnitude.

A possible explanation is that it fell some distance from the point where it was found, and either bounced or rolled to the place where it finally came to rest. There is also a possibility that the impact with the earth was cushioned by deep snow or loose sand.

From the Smithsonian Institution, October 18, 1948.

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AMATEUR GEOLOGISTS LEAVE FOR ROCKIES

More than 50 members of the Geological Society of Minnesota set off for Colorado today to prowl the Rockies for anything they could find in the line of gold, uranium or what have you.

The amateur geologists, ranging in age from 21 to 75, and including doctors, lawyers, teachers, and housewives, also expect to turn up some fossils and, in between times, take part in the first annual convention of the American Association of Amateur Geologists.

From the Pioneer Press, June 13, 1948.

****

MIGHTY AGATE VALUABLE FIND

Discovery of a massive agate, definitely gem material in composition and weighing approximately 200 pounds, has been announced by the Deschutes Geology Club. The discovery is believed to be the most important of its kind made in Central Oregon, a region far-famed for its agates, in the past year.

The huge agate was found by Howard H. Jenne, in the Ashwood country of Jefferson County. He described the agate as of the "vug" type, having been formed in a lava cavity. The matrix had weathered away, leaving the large chunk of gem material as float in a creek bed. No other agates were found in the area.

Value of the agate cannot be determined until the large piece is cut, members of the geology club said. They described the material as being some of the most colorful ever found in the area. Several years ago, a chunk of "smoke and fire" agate of similar size, found by C. G. Springer, president of the Deschutes Geology Club, sold for $1000.

From the Oregonian, October 17, 1948.

****

LAVA vs. JAVA

You have heard of the power of suggestion
And how thoughts will go where they are sent -
Just take off in any direction -
Well, this is the way that they went:

Of hot LAVA I thought was made mention,
And straight to conclusions I leap!
I hasten with every intention
Of seeing a seething mass seep,
And rumble, then splutter and bubble
Like a cauldron that must soon over-run;
But all that I got for my trouble
Was a hot flow of JAVA --- and FUN!

Ethel Boyd Wilhelm

****

LUNCHEON NOTES

August 12, 1948

(Editor's note: The notes of this meeting were found on the editor's desk during excavations preparatory to admitting guests to his home. During the same exploratory work a perfectly good check for $11.50, payable to the editor, was also unearthed, carefully dusted off, and later cashed. He hopes that by publicizing the results of some of the excavations on his home location he may interest other members of the Society enough to get occasional voluntary assistance.)

Besides Sylvia Hatfield, a guest of Ruth Dodge, there were several members present who find it impossible to meet with the group regularly. Among these were Dr. E. T. Hodge, Mella White, Clara A. Nelson, Myrtice Fowler, L. Kate Rosa, J. M. Weber, Ferris Weber, Almeda Smith, and Mrs. Arthur C. Jones.....Mella White brought some shells from Sitka, Alaska, and Mrs. Jones brought a Japanese specimen box from Formosa that is used in teaching in secondary schools. The specimens were all labeled with Japanese characters..... Charles W. F. Jacobs, ceramist with

the State Department of Geology and Mineral Industries, was introduced by President F. W. Libbey.....Mr. and Mrs. J. M. Weber have been on the desert near Needles, California.....A paper "Unusual concretions from Templeton, San Luis Obispo County, California," by R. A. Crippen, was shown.....Tom Matthews brought a copy of "Military Engineer" containing an article about the Missouri River Project.

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"ENCLOSED PLEASE FIND"

This Committee, created by recent events and circumstances, hereby submits its report of its deliberations, judgments, decisions, and performances with proper and appropriate Whereases, Be-It-Resolveds, Wherefores, and Therefores as seen in its judgment relevant and sufficient.

This Committee, sitting in secret session behind closed doors, and proceeding to the deliberation of the first matter properly coming before it in its efforts to fulfill the purposes of its being, finds that

Whereas, the undersigned, whose signature appears below as Chairman of this Committee, has been a member in good standing for the past several years of the Geological Society of the Oregon Country, called by some the "G.S.O.C.", and occasionally dubbed by the flippant and frivolous, "Geesockers," which being interpreted means Geese Scrambling (and scratching and honking and digging and hammering, and rattling and tumbling) Over out-crops, to the amazement and wonder, and often the confusion, consternation, and the annoyance of Good Sober Oregonians and Citizens of other communities adjacent to their peculiar activities; and

Whereas, said member has attended all but a few of the regular meetings of the above-mentioned Society without ever meeting the Treasurer thereof, who is unknown to said member, nor has her presence at such meetings, if any, ever been called to his attention, either officially or unofficially, with the very natural result that his dues in said Society for the year 1948 have not been paid up to the time of the above-mentioned sitting of this Committee; and furthermore, that said member has not by mail, telegraph, special messenger, or any other way remitted said dues to said Treasurer of said Society, with the inevitable result that said member has become delinquent according to the Constitution, Bylaws, and other Rules and Regulations governing dues of members of the aforesaid Society; and

Whereas, there appeared in a recent number of the official organ of the aforesaid Society, a list of the Members thereof for the current year of 1948, and the name of the aforesaid undersigned member was not included in said list, but was quite conspicuous by its absence therefrom, thereby providing the final factor contributing to the utter and complete delinquency of the above-mentioned undersigned unfortunate youth.

Wherefore, Be It Resolved that it is the judgment of this Committee that it jointly and severally views this state of affairs as stated just above, with disapproval and distress, as it is their unanimous judgment that said state of affairs constitutes a grave menace to the peace of the World in which said delinquent lives, moves, and has his being; and

Furthermore, Be It Resolved that this Committee, in sober conference assembled, views with alarm the very imminent possibility that the above-mentioned distressing state of affairs may continue on through the year 1949.

Wherefore, it is the unanimous decision of this Committee that the Executive Branch thereof, at its earliest convenience meet with said delinquent and request and prevail upon him to procure and fill out in proper legal form a U.S. Postal Note for Seven Dollars ($7.00) the same being the amount of dues in said Society for the two years mentioned above, and deliver said U.S. Postal Note to the Chairman of this Committee; and

Wherefore, the Executive Branch reports to the Committee as a whole that said delinquent was very happy to meet with said Executive Branch and promptly and without argument or veto, acceded to all requests in a full and true spirit of amity and cooperation and hastened forthwith to comply therewith; and

Wherefore, the Chairman of this Committee has caused the aforesaid U.S. Postal Note, duly and fully executed, to be attached to and made a part of this report; and

Wherefore, this Committee has decided unanimously that this report with said Postal Note attached shall be mailed, with proper and sufficient postage affixed to the envelope, to Miss Grace Poppleton whose address is Route 1, Oswego, Oregon, who is the Treasurer of the aforesaid Society and living at the above address, according to the October number of the official organ of the Geological Society of the Oregon Country; and

Wherefore, this final action by this Committee as recorded just above shows to the proper officers of said Society that the aforementioned delinquent has complied with all demands of the Society regarding dues of delinquent members, and the Committee hereby requests that the name of said delinquent be restored to the list of members in good standing in said Society for the period beginning March 1, 1948, and ending not earlier than Midnight February 28, 1950; and

Furthermore, that the stigma and humiliation of delinquency of said member be forgotten, and blotted out from the memories of all the other members of the Geological Society of the Oregon Country, official, fully paid up, delinquent, or otherwise;

Therefore, this Committee having considered all matters coming rightly before it, and having fulfilled all purposes for which it was created, and performed all duties and obligations resulting therefrom to the full extent of its abilities hereby requests that it be dissolved and discharged, and be relieved and exempted from any further responsibilities.

Done at the City of Portland, County of Multnomah, State of Oregon, U.S.A., this 12th day of October 1948, A.D., on the last day preceding the celebration of Yom Kippur in the year 5710 of the Jewish calendar, in the year of the Independence of the United States of America the 173rd; and in the year of the founding of the unlovely, uncooperative, unsociable Union of Soviet Socialist Republics the 26th.

/s/ Alva Oakes

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LUNCHEON NOTES

October 7, 1948

Vice President Leo Simon occupied the chair at this meeting in the dining room of the Chamber of Commerce.....Franklin L. Davis brought a University of Oregon Bulletin "In memory of Thomas Condon, Professor of Geology 1876-1906," June 1907, which the group bought by each member contributing a dime..... Ada Henley had a specimen of apatite.

* * * * *

October 14, 1948

Miss Caroline Rankiellour of Minneapolis was a guest of Miss Margaret Hughes .....H. K. Carruthers brought greetings from the Astronomical Society and an invitation to meet with it on November 5. President F. W. Libbey exhibited specimens brought from Oswego Creek by R. Erickson. He described them as nephrite, melilite, and metamorphic rock changed by hydrothermal action.....May R. Dale's specimens were garnet and garnet schist.....R. Erickson called attention to a report by the Canadian Geological Society on the Turtle Mountain slide which covered a part of the town of Frank, Alberta, and killed about 66 people. This report is contained in Bulletin No. 1211 of the Canadian Government Printing Bureau, Ottawa: Memoir No. 27, Canada Department of Mines, Geological Survey Branch.....Earl Minar showed a fossil from the Wolf Creek Highway, near the tunnel, which he had found on a solo trip that the rest of the Society had decided not to take.

* * * * *

October 21, 1948

Sixteen members of the G.S.O.C. luncheon group met in Room B of the Chamber of Commerce and found the table decorated with greens and pumpkins.....F. W. Libbey presided and exhibited specimens of pegmatite tourmaline and pegmatite quartz..... Ada Henley had a "stalactite" section showing quartz crystals. Carl Richards called attention to a coming meeting of the Astronomical Society at which a film showing the construction of Palomar Observatory was to be shown.....Rudolph Erickson mentioned an interesting article in "Natural History" about continental glaciers.....F. W. Libbey had just returned from Lake County where experiments are in progress with artificial pot holes. So far the artificial pot holes have not filled up with salt deposits as have the natural ones. Many guesses have been made as to the cause of the natural pot holes, but none of them has been generally accepted.

* * * * *

October 28, 1948

Several of our members who can read noticed that the meeting was to be in the main dining room and decided to eat elsewhere, prefering quieter surroundings; but fourteen hardy souls had a peaceful and pleasant session.....F. W. Libbey presided and introduced his guest, Pierre R. Hines, a mining engineer, who told about the lava formations in the Owyhee tunnel, part of which, he said, checked fairly well with the preliminary geological survey and allowed one contractor to make a world's record for speed in tunnelling. Another contractor, however, lost heavily on his section. These flows, Mr. Hines stated, are quite similar to those in the Lake Superior region which yielded great quantities of copper - sometimes a ton or more in a single mass.....Leo Simon had a letter of inquiry about rocks, from a budding scientist in the hills west of Portland.....W. C. Adams had small vials of water said to be from the River Jordan and the Dead Sea, and sand from drill exploration on the Panama Canal. He also reported that Tracy Wade is recovering his sight slowly.....Earl Minar is interested in garnets in ton lots. They are used as abrasives in sand-blasting operations.....E. N. Bates told a hair-raising story of an accident which shortened his vacation by the amount of time that was required to repair his car after it went through a guard fence on the Coast Highway and down a steep embankment following the blow-out of his right front tire. His car stopped only a few inches from a vertical drop. His advice is to have your good tires on the front wheels.

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GEOLOGICAL NEWS LETTER

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MEMBERSHIP APPLICATION
GEOLOGICAL SOCIETY OF THE OREGON COUNTRY

Qualifications and dues:

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

Date . . . . . .

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

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

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

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

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

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

Sponsored by _____
(member)

_____
(signature)

THE STAFF and PRINTERS of GEOLOGICAL NEWS-LETTER send SEASON'S GREETINGS to each of THE READERS with BEST WISHES for good pickings during 1949.

SOCIETY ACTIVITIES

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

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

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

DECEMBER MEETING ANNOUNCEMENTS

Friday Dec.10 — Dr. Olivia McHugh, from Salt Lake City, will give a talk on the geology of Utah. Colored slides will be shown.

Friday Dec.24 — No meeting

DECEMBER FIELD TRIP

Sunday Dec.12 — We're going somewhere on this day, weather be hanged. The trip will probably be to the Molalla fossil bed, because so many members missed out on visiting it last spring. Bring your lunch and meet in front of the new Journal Building at 9:00 a.m.

* * * * *

NEWS OF OUR MEMBERS

Ellen James is now attending the University of Oregon. Her present address is 1870 Reed Street, Eugene, Oregon.

Lotus Simon is planning on making a visit to her parents in Portland during the Christmas holidays. During the school year she may be addressed at 936 W. Johnson, Madison, Wisconsin.

Orrin E. Stanley has been notified that the board of trustees of Professional Engineers of Oregon, at a recent meeting, elected him to honorary membership. He is one of the founders of that society.

* * * * *

NEW MEMBER

James L. Macnab, 382 College Avenue, McMinnville, Oregon, student at Linfield Coll.

CHANGE OF ADDRESS
(GSOC News-Letter)

George V. Elder, 6922 S.E.Brooklyn St., Portland 6, Oregon

Mr. and Mrs. Hugh Miller, Route 1, Summit Drive, Lake Grove, Oregon

Lotus Simon, 936 W. Johnson, Madison, Wisconsin.

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FURTHER NOTES ON THE BLUE LAKE RHINO

By
George F. Beck

An item in the News Bulletin of the Society of Vertebrate Paleontology for October 1948 is of particular interest to those who have visited the Grand Coulee with the writer in years past. The item relates to the Blue Lake (Coulee City) rhino. For the benefit of those who have visited this unique fossil, or yet may risk their lives in the attempt, the paragraph is being quoted here:

> "Professor J. W. Durham and D. E. Savage have solved the problem of the Coulee City, Washington, rhino to the satisfaction of the people here in Berkeley. This creature is preserved by a death mold in a partially subaqueous pillow lava of the Columbia River basalt. The beast was lying on his left side with his back against a tree when he was surrounded by the basaltic flow. The bloated condition of the body indicates that the interring occurred some time after the death of the animal. Working in a strained and uncomfortably hot position, Savage managed to make a plaster cast from the mold. The re-assembly of this cast and a study of the bone and tooth fragments found within the hollow prove its authenticity. It appears to be Diceratherium, intermediate in size between the John Day and Agate Springs species."

The history of the rhino discovery may bear repetition - granting it is the only fossil animal of its kind known to science. It was in the summer of 1935 that a young couple, Mr. and Mrs. G. B. Peabody of Seattle, passed through Ellensburg with the story that they had found bones of a creature in its mold high in the bluffs at Blue Lake, Lower Grand Coulee. They missed me at the local college and carried the bones to the University of Washington where they passed into the hands of my brother, R. S. Beck. In due time they were relayed back to me and it became apparent with passing inspection that they represented a form of rhinoceros.

A few months later the Peabodys returned to guide the writer and a small party to the site of the mold, re-found with some difficulty in the huge expanse of lavas that are exposed in Grand Coulee. This was a welcome find to me inasmuch as it was supporting evidence that the trees at Vantage are in fact buried in basalt. Furthermore the very existence of such a lava-encased animal had been postulated by virtue of the same line of resoning. It might be well to remind the reader here that mold, or petrified body (or trunk), have been dependent upon the depth of water - the critical depth being in the neighborhood of four feet. More than that, as for instance the 50 or so feet depth at Vantage, is sufficient to protect trees, at least, from burning or distilling. The depth of water at the rhino site and elsewhere, when on the order of several feet, serves to set the lava as a mold but the wood does not survive the ordeal. The rhino survived in part, only remnants of badly shattered bones being found within the mold.

The geological staff of the University of Washington have always been deeply interested in these pillow-lava fossils - naturally since Dr. Richard Fuller is the authority on the basalts in general and the pillow basalts in particular. So it was that Dr. Durham carried with him to California something more than a passive interest in the Blue Lake rhino. He and I had been classmates at the two institutions. It was natural that he should think of

a visit back to the state of Washington in terms of several field trips. So last summer he brought back with him Mr. Savage as a specialist in vertebrate paleontology and stopped in to ask for the bones from the rhino mold and directions to the spot.

Intensive search has failed to show another animal mold (or petrified body) within the whole area of the petrified forests. After all of these years it is unlikely that one will appear. There seem to be too many "if's" in the conditions necessary for such a type of preservation. The Blue Lake rhino, of whatever type or species, promises to be the one of its kind - the only animal who survived a fiery lava onslaught to tell of it - providing one has the imagination to catch what the fellow has to say for himself. He has been broadcasting his plight for some 20 million years, as reference to his species and size will indicate (Miocene).

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TO THE EDITOR, GEOLOGICAL NEWS-LETTER

Sir: It would seem that one attributes quotations to "Anonymous" at his peril.

My article in your November issue was only a day or two off the press when a friend told me that he disagreed with at least one thing in it, which was that the "anonymous wag" to whom I attributed the verses anent the fleas, was indeed an outstanding, though long-deceased individual.

He then proceeded to enlighten my literary shortcoming by telling me that the author was that brilliant mathematician, Augustus De Morgan, who was professor of mathematics for over thirty years at University College, London. He died in 1871 at the age of 65. A prolific writer in a wide range of subjects, one of his last works was called "Budget of Paradoxes," in which he treated of such things as the futile efforts to invent a perpetual motion machine, to square the circle, to trisect the angle, and other alluring objectives. It was in this book that the analogy of the fleas occurred, though in somewhat different form from that in which I gave it. De Morgan was a great reader and, evidently, came across a verse in "Odd Poems - a Rhapsody," which Jonathan Swift wrote more than a century before; this verse ran thus:

So, naturalists observe, a flea
Has smaller fleas that on him prey;
And these have smaller still to bite 'em;
And so proceed ad infinitum.

De Morgan's mathematical mind was quick to spot the defect of that verse in limiting the process to the diminishing direction, so he proceeded to complete the parody with the expanding process, which he did in the following four-line verse:

Great fleas have little fleas upon their backs to bite 'em;
And little fleas have lesser fleas, and so ad infinitum.
And the great fleas themselves, in turn, have greater fleas to go on;
While these again have greater still, and greater still, and so on.

When one contemplates the stature of the author of these lines it would seem appropriate to withdraw the term "wag." One who was a scientist of such breadth and a mathematician of such eminence merits a more dignified epithet, so let us substitute "genius."

Carl Price Richards, Salem, Oregon.

November 16, 1948.

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"APE-MAN" OR "MAN-APE"?

Casts of bones believed to represent a weapon-carrying, fire-making pigmy "ape-man," who lived in South Africa more than a million years ago and who may have been the earliest known of man's ancestors, have just been added to the anthropological collections of the Smithsonian Institution.

This fossil, discovered in 1947 in the deposits of an ancient Transvaal cave, was described for the first time last month in the American Journal of Physical Anthropology, whose editorial office is at the Smithsonian.

The discoverer, Professor Raymond A. Dart of the University of Witwatersrand in Johannesburg, had the casts made specially for Dr. T. D. Stewart, Smithsonian Curator of Physical Anthropology, and editor of the Journal. These casts are the first to reach this country.

The long-extinct creature has been given the name of Australo-pithicus prometheus. It is thought that this creature walked erect, weighed from 80 to 100 pounds, had a brain comparable in size to that of the largest known gorillas and showed physical traits closely approaching the human. It might be debated whether it should be called "ape-man" or "man-ape."

If not in the direct line of man's ancestry, it represents an extremely progressive ape type, which had gone far in the human direction at a time when the first pre-humans were appearing in the world.

The evidence suggests that it pursued and killed other animals with clubs. Perhaps it cooked their flesh over fires in its cave lairs. Its physical structure was such as to open the way to brain development.

From the Smithsonian Institution, November 16, 1948.

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LUNCHEON NOTES

November 4, 1948

Mrs. R. Erickson of Oswego, Carl Richards of Salem, and Kenneth Phillips of Groveland kept the group from being an unlucky thirteen. Of course, any one of them could have done that alone, but it was nice to have all of them with us at once.....Mr. Richards was still thrilled with the film of the building of the Hale telescope and the Palomar observatory which he had seen on November 3rd. He made some of us regret that previous engagements had been given priority..... Pres. F.W.Libbey had a booklet issued by the Canadian Bureau of Mines, Ottawa, Canada, entitled Prospector's Guide for Uranium and Thorium Minerals in Canada which he thought could be obtained free by writing to the Bureau. He also had specimens of iridescent volcanic cinders from Abbott Butte, Oregon, and a piece of Clackamas County bauxite.....Ada Henley brought a specimen of willemite and a copy of Desert magazine.....Miriam Shepard said that Ruth Coats, 710 E. First St., Tillamook, has invited everyone interested to see her "Hobby House" Sunday, November 7, from 3:00 to 8:00 p.m.....Pres. Libbey announced that A.W.Hancock will talk about the John Day country at the next evening meeting of the Society on Nov. 26. ....Leo Simon called attention to the coming meeting of Oregon Academy of Science Nov. 11.....E.N.Bates had a catalog from the Spencer Company containing an interesting description of phase microscopes.

* * * * *

November 11, 1948

This being a holiday for many of our members, only eight people met for luncheon and a discussion of geological matters. This number included such reliable people as Pres. F.W.Libbey, Business Mgr. C.A.Wheeler, Past Pres. J.C.Stevens, W.C.Adams, Ada Henley, Margaret Hughes, Mrs. Arthur C. Jones, and Irving W. Jones.

* * * * *

November 18, 1948

President F. W. Libbey had little trouble in keeping the dozen geologists in order at this rather unexciting meeting.....Mrs. Sunderland brought a short section of a petrified log about four or five inches in diameter for identification as to species. No one was rash enough to attempt this feat. It came from near the Wyoming-South Dakota border.....Mr. Vance had a copy of Pacific Discovery, published by the California Academy of Science, containing an article on "Dawn Redwoods of China" by Dr. Ralph Chaney of the University of California. These interesting living trees are the same as the fossil meta Sequoia found in the John Day beds laid down 30 or 40 million years ago.....Leo Simon delivered a short lecture on monocotyledons and dicotyledons; quite instructive to those of us who slighted our study of botany.

O.E.S.

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MUSEUM NOTES

A number of important hurdles have been negotiated by the Oregon Museum Foundation staff and its various committees. Most notable event is, of course, the block of land donated by Mr. Lloyd and which now has a sign at 10th and N.E. Clackamas reading, "Future Home of the Oregon Museum of Science and Industry." Just two blocks east of the property, at 12th and Clackamas, a large house which, through the generosity of Mr. Lloyd, will be the first home of the museum staff. This will be known for the present as the workshop, where the majority of the exhibits will be prepared for the temporary museum.

Sorting, dusting, and packing the former Portland Free City Museum material, now stored at the City Auditorium, is complete and a portion of the same collection has been removed from the Forestry Building. The Accessions and Exhibit Committee, headed by J. Lewis Renton, has the following G.S.O.C. members lending a hand: Mr. F.W.Libbey, Mr. and Mrs. Leo F. Simon, Dr. J.C.Stevens, Dr. W.C. Adams, Mrs. May Dale, Miss Miriam Shepard, Mr. and Mrs. C.A.Kennedy, Mr. and Mrs. A.W.Hancock, Mr. A.D.Vance, Mrs. Florence E. Sunderland, Mr. and Mrs. M.C.Yeager, and Mr. and Mrs. Lloyd L. Ruff.

The first bird exhibits, under the very capable hand of Mr. E.G.Rett of Santa Barbara, in collaboration with Director Forbes, are nearly finished. At least three and perhaps five of the bird cases will be moved from the auditorium to the east side workshop within a few days.

Much remains to be done between now and the opening date of the temporary museum. In other words, to paraphrase the old saw: "Now is the time for all good men (and women) to come to the aid of the foundation." More volunteer workers are needed, especially in clerical, typing, carpentry, electrical, and architectural work. Sign up with F.W.Libbey, Leo Simon, or Lloyd Ruff.

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THE JOHN DAY WONDERLAND

A. W. Hancock recreated, for about a hundred attentive listeners, the early days in the John Day country of eastern Oregon at Library Hall, Friday, Nov. 26th. By "early days" we do not mean the "days of '49," but those of something like sixty million years ago.

"We spend our time reading about 'lost worlds' when we have at our door a real lost world - the John Day Wonderland - where the story is written in stone, carbon, lime and quartz. Its title is 'The John Day Fossil Bed of Central Oregon.' This is not a 'phony world,' but is much like the world in which we live today,

with a different climate, warmer, and with a richer vegetation," said Mr. Hancock. Nature, when she wants us to know what has happened, turns the trees and animals into stone and buries them in rock. Here we can find the oak wood, the oak leaf, and the acorn; also the leaf and fruit of the persimmon. To read this book there must be plenty of material. It must be well-preserved and get-at-able. All these conditions are met here. Dr. H.C.Merriam, who has studied similar formations the world over, says that no other place on earth furnishes such a complete sequence of animal life as does the John Day country. Dr. Ralph Chaney, Chairman, Department of Geology, University of California, says that no other place on earth furnishes so complete a sequence of plant life.

In apology for beginning his story so recently as 60 million years ago, Mr. Hancock explained that the older records are not well-defined; so it is necessary to begin with the kinds of life that existed in the Tertiary period.

The evidences of life in the Oligocene period are plentiful, there being a hundred kinds of animals and forty varieties of plants. Some of the sediments in this region are 2000 feet thick and the animals preserved in the bottom layers are quite different from the more modern varieties in the upper strata. Here are found the fossils which show the development of the horse from the little 12-inch Eohippus with four toes, through the three-toed Mesohippus, from 16 to 18 inches in height with an arched back denoting speed such as we have today in the whippet, to the Miohippus, a browser about 2 feet high. This animal lived in the woods and ate branches and leaves of trees.

The strata are broken by earth disturbances, cross cut by ancient streams, and covered with lava which came up through seams in the rock, covering a hundred thousand square miles and wiping out all animal and plant life in the area. These basaltic lavas had round or oval pockets which became filled or partly filled with crystals forming geodes. Sands, blown in from surrounding territory, and seeds, dropped by birds flying over the barren country, started a new vegetation which was followed by new types of animal life different from those below the lavas.

Many of the old plants, such as the ginkgo, did not return, but their place was taken by oaks and other new types. A new and larger horse about forty inches high appeared, which ate grass instead of tree limbs, and had longer teeth than his ancestors. The rhino does not appear in the later strata, being replaced by the elephants which had found a land bridge from Europe.

The landscape was elevated about 2,000 feet and the mountains were raised up between the Pacific Coast and the John Day region, causing a colder and dryer climate.

The Pliohippus, with the two side toes hanging above the ground, appeared about this time. There were also camels and grazing deer. The Pliohippus lost the two side toes in the passing of time.

As we come closer to the present surface of the ground we find the elephant and the Equus, closely related to the modern horse.

Another lava flow again drove the animals and plant life from the area, and after they returned they were again driven out during the ice age.

The above condensation and "garbleization" of a very excellent talk is presented with the apologies of the reporter to Mr. Hancock and to our readers.

O. E. Stanley

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