

GEOLOGICAL SOCIETY NEWS LETTER

Volume 17, 1951

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GEOLOGICAL SOCIETY OF THE OREGON COUNTRY

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PURPOSE and MEMBERSHIP

The Geological Society of the Oregon Country serves the region now more commonly known as the Pacific Northwest. Its function is to educate people as to the wonders and natural resources of this vast region. Three classes of people seek membership in the Society:

- 1) Those who love, enjoy, and believe in the Oregon Country and want, therefore, to support the activities of the Society;
- 2) Those who wish to have knowledge of and to participate in the development of the natural resources of this region; and
- 3) Those who need help in finding, understanding, and enjoying the geological wonders which always and everywhere surround us.

The Society is not for professional geologists, though many lend their professional prestige to its support. On the contrary, the Society is composed of studious folk who want to enrich their intellectual lives and to walk with seeing eyes among the wonders of the earth on which they live.

Membership dues are \$3.50 per year for residents of Multnomah County; \$2.50 for other residents; and \$1.50 for Junior Members. A regular Membership comprises:

- (a) a single person; or
- (b) husband and wife (including children under 18 years of age).

A Junior Membership is for a single person under 18 years of age. Each membership includes one subscription to the GEOLOGICAL NEWS LETTER.

Applicants for membership should send name (and names of family members included, if any), address, phone(s), and dues to the Secretary, (Miss Ruby Zimmer, 805 S. E. 60th Avenue).

Please make checks payable to the Society.

SOCIETY ACTIVITIES

- LECTURES:** Lectures are held in the Public Library Hall, S.W. 10th Avenue and Yamhill Street on the second and fourth Friday of each month, at 8:00 p.m.
- TRIPS:** At least one field trip is held each month. For questions and suggestions concerning trips call Mr. Rudolph Erickson, BE 7191.
- LUNCHEONS:** Every Thursday noon at the Chamber of Commerce, 824 S.W. 5th Avenue between Yamhill and Taylor streets. Luncheon 85 cents.

JANUARY AND FEBRUARY LECTURES

- Friday
Jan.12 Dr. W. D. Wilkinson, professor of mineralogy, Oregon State College, will talk on "The Geology of the John Day Country." Illustrated.
- Friday
Jan.26 "Stanley's Explorations - Excepting Africa" by Orrin E. Stanley. Being highlights of Mr. Stanley's recent trip. Illustrated with his own inimitable pictures.
- Friday
Feb. 9 This regular meeting date has been changed as follows:

During the first part of February we will cooperate with the University of Oregon in sponsoring their lectures honoring Dr. Condon (the father of Oregon geology) which will be held as follows:
- | | | |
|--------------------|--|--|
| Tuesday Feb. 6 | Lincoln High School auditorium, 8:15 p.m.) | B. L. Byerly of the University of California |
| | " " " " " ") | at Berkeley, and great |
| Thursday Feb. 8 | " " " " " ") | authority of Seismology, |
| | |) will talk both nights on: |
- "Earthquakes of the World, the Pacific Coast, and Oregon."

JANUARY TRIP

Sunday
Jan.14 Trip to the moon and points beyond. Meet at the planetarium of the Oregon Museum of Science and Industry, 908 N.E. Hassalo, at 3:00 p.m. The trip will last 45 minutes and will be led by Mr. Stanley Shirk, Director of the Museum. Adults 40 cents, children 20 cents. The Museum opens at 2:00 p.m. and tours through it will be led before and after the planetarium trip for those interested.

NEWS OF MEMBERS

The Society's sympathies were sent to Mrs. Jane A. Flood (Jane Hurst) on the death of her husband, Floyd A. Mr. Flood died December 10 at the age of 66. Funeral services were held December 13, at 1:30 p.m. in the Miller and Tracy chapel.

Mr. Leslie Bartow is recuperating at the Veterans Hospital from a major operation performed on December 26. No doubt by the time this notice appears he will be at home -- or making plans to come home. Mrs. Bartow was most enthusiastic in her praise of the wonderful care given all the patients at the Veterans Hospital.

NEWS OF MEMBERS (cont.)

Miss Margaret Hughes Returns from her Vacation!

On December 16 Miss Margaret Hughes, whose vacation had been spent in Providence Hospital, locked her overnight bag, which had been a 4-weeks bag on this occasion, and flitted down the corridor (in a wheeled chariot) with all the eclat that Margaret Rose herself might have created. With her little magenta hat perched atop her head, and her cheery disposition shining through, she was soon the center of a bevy of nurses, Sisters, charwomen, and patients all clustered about our Princess Margaret, wishing her a safe journey home and continued improvement, along with a Merry Christmas and Happy New Year.

And we of the G.S.O.C. want to join those well-wishers in saying: "The best of everything, always, to 'Our Own Princess Margaret.'"

Gladys (Mrs. Ray) Baldwin,

STOP - READ - ACT

We hereby announce the 16th Annual Banquet: March 9, 1951, is the date. The Mt. Scott Community House at S.E. 72nd Avenue and Harold Street is the place, and 6:30 p.m. is the time. The price per plate will be \$2.00, and The Little Red House will cater. Leo Simon has the tickets now.

Dr. Harold E. Culver, professor emeritus of geology at Washington State College, will be our guest speaker, and in this we are most fortunate. A story of Dr. Culver's background will appear at a later date in the News Letter, and the title of his talk will be announced later.

May Dale is chairman of the committee working up the lighter entertainment for the evening. Avoid the draft and volunteer your service or ideas. Call May at CA 2123 (or FI 3361, Ext. 566, during working hours). Mrs. Leslie W Bartow is general chairman of the Banquet Committee which has accomplished so much so early.

EDITOR'S NOTE

Requests have been received for a reprint of the talk given before the Society on July 28, 1950, by Mr. Arthur M. Piper, Staff Scientist with the U.S. Geological Survey, on this country's water supply. In response to these requests this talk will be printed in the January and February News Letters - in two parts, due to its length. In connection with Part I, which follows, it is interesting to recall a statement made by our President, Dr. Edwin T. Hodge, subsequent to a trip to Cape Horn, Washington, last summer:

"At Cape Horn a vertical cliff shows a section that proves that the Columbia River did not start to cut its canyon until the capping andesites of the Cascade Mountains had been laid down. Hence, the Columbia River is very young and must have started by some sort of overflow over the Cascade Mountains. Why is this such an important fact? Well, without the river, then Portland and all that we call Oregon would not be as it is. For further proof you must wait till those regions that live in the precarious limit of water supply have gone the next fatal few years. Then the vast waters of the greatest river on the Pacific Coast of North or South America will be appreciated. Then the fact of its origin will be more important than any other fact which now concerns us."

* * * * *

WATER -- POTENTIALLY A LIMITING RESOURCE
IN THE UNITED STATES

By
Arthur M. Piper

Part I
Water in Relation to the Nation's Economy

Water is a commonplace natural resource. None the less, it is a resource which in the future probably will limit critically the social and economic evolution of many extensive parts of the United States.

No longer can the Nation take for granted an easily won and adequate supply of water at any and all places or at any and all times. A veritably insatiable thirst for water has developed under our greatly increased population and new industries that accelerate per-capita consumption ever more rapidly. Within a century we have evolved from essentially an agricultural economy in which per-capita use probably was only a few gallons a day¹ to a complex industrial economy in which summer per-capita use is 1,000 gallons a day or even more in some municipalities, and whose commonplace technologies include many rapacious users of water. To cite only a few², the water requirement per ton of industrial-chemical product is 320,000 gallons for butadiene, 200,000 gallons for viscose rayon, 50,000 gallons for smokeless powder, 70,000 gallons for sulphate pulp, 60,000 gallons for soda pulp bleaching. Distillers use 600,000 gallons of water per 1,000 bushels of mashed grain; oil refiners use 770 gallons per 42-gallon barrel. It will require as much as 1,650 gallons of water per barrel of oil made from coal. For these products and many other industrial-chemical processes, the water used must meet fairly rigorous and diverse limits of temperature, dissolved constituents, and suspended matter. No end to this voracious thirst is in sight. Water has become the very life blood of a highly industrialized economy and a standard of living which, as a Nation, we cannot renounce without gravely compromising our security.

What is the scale of this demand? As of 1950, over-all daily use of water in the United States is estimated by the Geological Survey to be about 200 billion gallons, or 1,300 gallons per capita, on the average. This estimate easily can be in error by 25 percent, or even more, because many uses are not of record and have been evaluated from crude index coefficients. At the source of supply, these estimates of current water use (or median values for a range of estimates) are as follows:

Table 1.
Estimated Use of Water in the United States in 1950

| | Billion gallons a day (average) | | | Percent of total |
|--|---------------------------------|-------------------|------------|------------------|
| | Ground-water sources* | Streams and lakes | Total | |
| Irrigation | 15 | 80 | 95 | 52 |
| Industrial (other than from municipal systems; water for hydropower generation excluded) | 5 | 65 | 70 | 40 |
| Municipal | 3 | 9** | 12 | 6 |
| Rural (other than irrigation). | 2 | 1 | 3 | 2 |
| Total | 25 | 155 | 180 | 100 |

*See Guyton, W.F., Estimated use of ground water in the United States, 1945: Paper prepared in and mimeographed by U.S.Geol. Survey for a committee of Am. Soc. Civil Engr., 1950

**See Langbein, W.B., Municipal water use in the United States: Am. Water Works Assoc. Jour., vol. 41, no. 11, pp. 997-1001, November 1949. (Based on data by the U.S. Public Health Service.

The National Security Board estimates that total water use in the Nation may increase to 400 billion gallons a day--that is, it may double--within the not-distant future.³⁷ It seems infeasible to meet a doubled use at each and every community--in other words, we face unlike geographic patterns in economic development and in potential sources of additional water. Possibly because we are accustomed to bountiful supplies, we have competed in uses of water and have discharged contaminating wastes somewhat heedlessly. Too frequently, local or transient water shortages have been and are a consequence of such conditions, aggravated at some places by lagging development of new sources (as at New York City). Unchecked by voluntary concerted action, what will be the outcome of current trends in the Nation's water situation? Within a few decades numerous and rather severe water stringencies could develop--not so much because Nation-wide supply is inadequate but because industrial development may have crystallized in a geographic pattern inconsonant with the distribution of that supply. A century hence, will our principal urban centers have so depleted surrounding areas that satellite communities cannot thrive within reach of practicable transportation systems?

The time has come for thoughtfully "taking stock"--for comprehensive inventory of current uses, estimation of prospective uses, appraisal of residual capacity in all water sources (whether in the streams or underground), and evaluation of measures necessary to balance prospective use against potential supply. No longer can we shirk the long pull of inquisitive fact-finding, analysis, and rational concerted action necessary to a realistic solution of water problems with a minimum of misdirected effort.

The Hydrologic Cycle

Within limits, fresh water is a self-renewing resource. Essentially all that is usable by man must be captured from a vast circulatory system, the hydrologic cycle, in which water condenses from atmospheric moisture, falls as rain or snow, and then flows over or through the land to the oceans. Evaporation from the surface of water bodies, from vegetation, and from moist soil returns water to the atmosphere as vapor and closes the cycle.

To place a scale on this circulation--for all the United States, (1) rainfall is at the average rate of 6.5 million cubic feet a second, 4,300 billion gallons a day, or 24 times the aggregate use just cited; (2) aggregate runoff to the oceans averages about 30 percent of rainfall, 2 million cubic feet a second, 1,300 billion gallons a day, or 7 times aggregate National use. But this does not justify complacency--these potential sources are distributed most unevenly in certain seasons or throughout the year, supply even now is taxed nearly to capacity over extensive parts of the United States.

Stress should be placed on reservoir elements in the hydrologic cycle and their potential capabilities. These are as follows:

In gross volume, ocean water is vastly greater than man's current and prospective ^{consuming} uses. Obviously, however, it is limited to special, low-order uses until such time as economically practical means may be developed for eliminating its salt content.

Of the fresh water in storage on the land surface of the United States, by far the greater part is in the Great Lakes. For the area within the United States, this storage is about 12 billion acre-feet, 2½ year's average rainfall on all the Nation's land area, or 8 year's average runoff to the oceans. Storage in remaining fresh-water lakes and in stream channels at any one time is insignificant by comparison.

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Suspended water within reach by root systems constitutes the temporary storage by which vegetation, both crop plants and native cover, is sustained. The quantity ranges widely each year. In the more humid areas and in fine- to medium-textured soils, natural suspended-water storage during the growing season may be equivalent to a substantial part of a year's average rainfall. However, in the more arid areas essentially no suspended water may be available naturally for growth of plants, at any time. Under such conditions, crops can be grown only under irrigation. The Nation over, natural suspended-water storage is inadequate for the fullest production of food, fiber, and timber crops.

Ground water constitutes the largest fresh-water storage naturally available. Within the United States and to depths feasible of being reached by modern well-drilling methods, it is estimated to be not less than 50 billion acre-feet, four times the estimated storage in the Great Lakes, and equivalent to 10 year's average rainfall or about 35 year's average runoff. Some parts of this Nation-wide "reservoir" are feasible of management to store and later to yield water that otherwise would escape as unused stream runoff.

Some Ground-Water Principles

Relation to the flow of streams

Most ground-water bodies move constantly, though slowly, toward springs and seeps at the land surface. Such ground-water runoff is the principal source of dry-season or "base" flow in most streams. The proportion of ground-water runoff to total runoff and the uniformity of stream flow usually increase with unconfined ground-water storage.

For example, in northern Indiana, Tippecanoe River and Wildcat Creek drain two relatively small areas about 60 miles apart, under about the same humid environment. Having greater natural storage within its basin, in lakes and in the zone of saturation, Tippecanoe River is characterized by moderate runoff through the late summer and far into the winter, and has no flash floods even during severe storms. In contrast, the basin of Wildcat Creek sheds most of its water in flash floods with each storm period, and yields little during protracted stormless periods. Developing the full potential water supply in a basin such as that of Wildcat Creek requires construction of reservoirs to hold a large part of each year's runoff.

For another example, the basins of Hocking River and of Mad River, in Ohio, yield about the same average runoff per square mile, with ground-water runoff being about one-third of the total for the Hocking River but two-thirds for the Mad River. In north-central Oregon, the John Day River is very "flashy" whereas the adjacent Deschutes River is uncommonly steady in flow. The difference is a resultant of very large ground-water storage in certain young volcanic rocks of the Deschutes River basin.

Dissolved mineral matter

Natural waters enter the soil as active solvents; thereafter, they continue to dissolve and to react chemically with their containing materials, until each water assumes a quality characteristic of its material. Consider, for example, the very soft waters from certain areas of crystalline rocks, the very hard waters of the Southwest, and the high-silica waters of the Northwest.

Pre-treatment or special handling of natural waters is advantageous for many common uses. By saving soap, laundries justify softening their water; feed water for high-pressure boilers must be pre-treated to rigid specifications; the irrigator must so use water that his soil does not become toxic to crops; even a

moderate excess of common dissolved substances may greatly reduce the market appeal of beverages and canned foods; numerous modern industries require process water with very "tight" standards of chemical purity. The list of such limitations could be expanded almost indefinitely.

In both chemical composition and temperature, ground water generally is less variable than the water of streams. Accordingly, many industries desire a ground-water source so that dosage for pre-treatment can be standardized, even though an available surface-water source contains less dissolved mineral matter. Likewise, a ground-water source may be preferred for air-conditioning or for industrial temperature-control because summer temperature of ground water is commonly several degrees lower than that of an alternative surface-water source. Under such limitations, industrial and urban areas have competed for water from a common source insufficient for both.

Land-use and land-management practices

Especially in the last decade, a concerted Nation-wide drive has been pressed toward management of land to the end of conserving soil and assuring optimum yields of its food, forage, fiber, and timber products. This has been overdue, to correct some spoliative use of land with consequently eroded soils and sediment-loaded stream channels or reservoirs. However, land management is not a panacea for water problems.

In some 15,000 observation wells scattered over the United States, measurements of water level fail to show progressive depletion of ground-water storage in areas not affected by pumping. Some of the records go back nearly 50 years and a few nearly a century.^{4/} The water level has risen in wet periods and fallen in dry periods, but its mean has not dropped substantially. Thus, there seems to be little basis for the common belief in widespread depletion of ground-water storage owing to misuse of land.^{5,6/}

Over extensive areas--which include much of our nonirrigated crop land and in which low-permeable materials are common below the soil zone--current practices of soil conservation and land management engender substantially increased storage of soil-and-subsoil water, and may increase dry-season yield of shallow-seated springs and wells. However, in other extensive areas, including recharge areas of numerous major ground-water bodies, those same practices would not necessarily increase, and might decrease the deep infiltration that sustains heavily pumped wells.

Forests and other vegetal covers do not "make" water; they extract and dissipate soil water whenever available during the growing season. Thus, as has been demonstrated for certain experimental areas in Colorado, California, and North Carolina,^{7/} removal of cover commonly increases runoff or ground-water storage, or both, rather than decreases them. Croft,^{8/} a leader in watershed-management research, points out that maintenance of vegetal cover for control of erosion involves inescapable cost in water.

None of this denies that vegetal covers may stabilize soil mantles, that their root systems commonly open passages for infiltrating water, or that their surficial litter commonly slows immediate runoff during storms.

Standards of management are evolving for irrigated land, the chief objectives being perpetual fertility and minimal land-drainage. Under some circumstances, it would seem practicable to diminish irrigation-water requirements substantially.

1951

To be judicious and effective over the Nation, land-management practices must be adapted to a very wide range of environments involving complex interplay between factors of climate, topography, bedrock and surficial geology, hydrology, and vegetation. Much fundamental research, with close collaboration between hydrologist and agronomist, remains undone. It is ventured that ultimate land-management standards will be predicated on minimal effort that will sustain an optimum yield of land products--food, forage, fiber, and timber--and will limit movement of sediment reasonably; in other words, that good management can increase land productivity largely to the extent that it increases soil-water storage (for later extraction by the growing product), but over extensive areas any such increase in soil water must be at the expense of recharge to ground-water bodies having other uses.

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(Part II will appear in the February News Letter.)

KNOW YOUR FAMILY TREE?

A course entitled "Life of the Past" will be given during the Extension Division's winter term by Mr. Hollis M. Dole, geologist with the State Department of Geology and Mineral Industries. The class will be held on Mondays at Lincoln High School beginning January 8. Call the Portland Extension Center, AT 2165 for further information.

ANCIENT BIVOUAC

An early bivouac of ancient man on the trail from the Alaskan coast to the interior of the North American Continent was discovered this summer by a United States Geological Survey worker. A considerable collection of artifacts dating from the end of the latest ice age has been turned over to the Smithsonian Institution's Bureau of American Ethnology by the discoverer, Robert J. Hackman. The find is considered one of the most significant yet made in North American archeology.

The artifacts - among which is a fragment of a Folsom point, a type of spear-head which is the earliest known human remain on this continent - were found by Mr. Hackman near the northern entrance of Anaktuvuk Pass through the Brooks Range, which runs essentially parallel to the Arctic coast. They were found under about 10 inches of soil in a moraine left by a retreating glacier at the edge of a lake.

All these chipped-stone fragments are quite similar in design to the so-called Cape Denbigh flint culture discovered about 2 years ago by Dr. J. L. Giddings, of the University of Pennsylvania. These were found buried 7 feet deep on Cape Denbigh at the head of Norton Sound and may be considered the first human artifacts in the New World. It now is generally admitted that the first Americans, ancestors of the Indians, came from Siberia sometime toward the close of the last ice age, and the Norton Sound area would have been convenient for their earliest settlements.

From this region, according to present theory supported by Hackman's discovery, they moved slowly eastward along the southern foothills of the Brooks Range. The migration was desultory, following the trails of game. At one point apparently they turned northward through a convenient pass in the high mountains and then made their way farther eastward along the northern foothills until they came eventually to the broad valley of the Mackenzie River, which they followed southward along the eastern slope of the Rockies. This appears to have been the chief migration route. Hackman's discovery confirms part of the theory.

This bivouac can be considered between 7,000 and 12,000 years old. It certainly dates from sometime after the beginning of the retreat of the latest glaciation, which is now set at about 12,000 years ago. This has been confirmed recently by the disintegration rate of radioactive carbon. The rate at which the glaciers retreated is not known. It is certain, however, that about 7,000 years ago there was a period of quite mild climate in the Far North.

It was about this time that the ancient people were engaged in their migrations. At about the same time, or a little earlier, a curious migration of animals took place along approximately the same routes. Peccaries, pronghorns, horses, and camels were moving from North America into Asia. Mammoths, deer, and bison were coming into North America. The people responsible for the Anaktuvuk Pass deposit may have hunted all these.

The pass was a natural migration route through the mountains. Until quite recently it was used by inland Eskimo to cross the mountains on their way to obtain supplies at the trading post at Bettles.

Hackman was a member of a six-man Geological Survey party that went into the region with snow tractors, or weasels. They proceeded from the base camp of the Survey, located on the Colville River 165 miles southeast of Point Barrow.

Another Geological Survey worker, Milton C. Lachenbruch, found two more Folsom points near the headwaters of the Noatak River in northwestern Alaska, just beyond the Brooks Range. This site also, it is probable, was one of the bivouacs in the great migration. (Smithsonian Institution release, December 19, 1950)

GEOLOGICAL NEWS LETTER

OFFICIAL PUBLICATION OF THE



VOL. 17 NO.

2

PORTLAND, OREGON

February 1951

GEOLOGICAL NEWS-LETTER

Official Publication of the

Geological Society of the Oregon Country

616 Morgan Bldg. Portland, Oregon

POSTMASTER: Return Postage Guaranteed

GEOLOGICAL SOCIETY OF THE OREGON COUNTRY

Officers of Executive Board, 1950 - 1951

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| Treasurer: | Mr. Norris B. Stone | Rte. 1, Box 179-A, Oswego, Oregon. | | Oswego 6531 |
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Staff of Geological NEWS LETTER

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- 1) Those who love, enjoy, and believe in the Oregon Country and want, therefore, to support the activities of the Society;
- 2) Those who wish to have knowledge of and to participate in the development of the natural resources of this region; and
- 3) Those who need help in finding, understanding, and enjoying the geological wonders which always and everywhere surround us.

The Society is not for professional geologists, though many lend their professional prestige to its support. On the contrary, the Society is composed of studious folk who want to enrich their intellectual lives and to walk with seeing eyes among the wonders of the earth on which they live.

Membership dues are \$3.50 per year for residents of Multnomah County; \$2.50 for other residents; and \$1.50 for Junior Members. A regular Membership comprises:

- (a) a single person; or
- (b) husband and wife (including children under 18 years of age).

A Junior Membership is for a single person under 18 years of age. Each membership includes one subscription to the GEOLOGICAL NEWS LETTER.

Applicants for membership should send name (and names of family members included, if any), address, phone(s), and dues to the Secretary, (Miss Ruby Zimmer, 805 S. E. 60th Avenue).

Please make checks payable to the Society.

SOCIETY ACTIVITIES

- LECTURES: Lectures are held in the Public Library Hall, S.W. 10th Avenue and Yamhill Street on the second and fourth Friday of each month, at 8:00 p.m.
- TRIPS: At least one field trip is held each month. For questions and suggestions concerning trips call Mr. Rudolph Erickson, BE 7191.
- LUNCHEONS: Every Thursday noon at the Chamber of Commerce, 824 S.W. 5th Avenue between Yamhill and Taylor streets. Luncheon 85 cents.

FEBRUARY LECTURES

(Note: There will be no meeting of the Society on Friday, February 9.)

CONDON LECTURES - Condon lecturer this year is Dr. Perry Byerly, Department of Geology, University of California, who will give two lectures on earthquakes of the world, the Pacific Coast, and Oregon as follows:

Tuesday "The Causes of Geographical Distribution of Earthquakes."
Feb. 6

Thursday "The Effects and their Mitigation."
Feb. 8

Both lectures will be held at 8:15 p.m. in the auditorium of Lincoln High School. There is no admission charge, and the public is invited.

* * * * *

Friday "Worlds in Collision," by Mr. Lehi F. Hintze, Department of Geology,
Feb.23 Oregon State College. (Note: This is the night of the annual business meeting of the Society. The business will be dealt with beginning at 8:00 sharp. The lecture will follow.)

MARCH LECTURES

Friday Annual Banquet (for details see next page).
Mar. 9

Friday "Geology of the John Day Country," an illustrated lecture by
Mar.23 Dr. W. D. Wilkinson, Professor of Geology, Oregon State College.

FEBRUARY FIELD TRIP

Sunday Basement Trip. Leader is Leo Simon. Meet at 1:30 in front of
Feb.25 Northeast Y.M.C.A., 1630 N.E. 38th Avenue (corner N.E. 38th and
1:30 p.m. Broadway). Three basements (i.e. rock and mineral specimens housed in three basements) will be visited.

READ AND ACT

The Annual Banquet is only a month away.

Dr. Harold E. Culver, chairman of the Department of Geology, Washington State College, will talk to us on "The Search for Ore." This should be a most interesting subject, and will most likely be spiced with many of Dr. Culver's personal experiences.

Dr. Culver is a geologist of long standing, having received his bachelor's degree from the University of Wisconsin in 1910, and his doctorate from the University of Chicago in 1923. Between the years 1925 and 1945 he was both State Geologist of Washington and Head of the Department of Geology at Washington State College. He is now Chairman of this latter department.

Remember last year's skits and look forward to an equally good finish to this program.

Leo Simon can now give you your choice of good seats. Price per plate is \$2.00 and the Little Red House should furnish a fine meal. March 9, at 6:30 p.m., in the Mt. Scott Community House, S.E. 72nd Avenue and Harold Street, is the note you should make in your date book.

NEW SERIES OF UNITED STATES TOPOGRAPHIC MAPS

The U.S. Geological Survey has inaugurated a new series of topographic maps on a scale of 1 : 250,000 (1 inch = about 4 miles). Each quadrangle map in this series will cover 1 degree of latitude and 2 degrees of longitude. The contour interval will usually be 100 feet for areas of normal relief, supplemented by 50-foot contours where the terrain is flat.

To date, maps of this type issued show parts of Delaware, Maryland, New Jersey, and Pennsylvania.

SKULL CAST

Skull casts of a creature that seems to fall into the gap between the great apes and man have just been received by the Smithsonian Institution from the British Museum.

Fossil remains of this anthropoid form, known as Proconsul, were found recently in Kenya, East Africa, by the British anthropologist Dr. L. S. B. Leakey. It is essentially a small and somewhat primitive type of great ape, but some features seem closer physically to man than any found in the gorillas, chimpanzees, or oranges now extant. This is especially true of the teeth. The bones were found in deposits of the Miocene geological era, about 25,000,000 years ago.

Proconsul, it is claimed, may be interpreted as an approach to the hypothetical common ancestor of the great apes and the human race.

Recently also the veteran anthropologist Robert Broom discovered in South Africa a complete skull of the curious Paranthropus crassidens, hitherto known only from a jawbone. The skull is described in the current issue of the American Journal of Physical Anthropology.

(Continued on page 16.)

WATER -- POTENTIALLY A LIMITING RESOURCE
IN THE UNITED STATES

By
Arthur M. Piper

Part II* - The Current Water Situation

Nation-wide Aspects

Let us take a quick long view into the Nation's water situation, in calm determination to identify problems and to begin a groundwork for their ultimate solution. With some hazard of over-simplification, this quick view can be taken with two basic generalizations: (1) the extent of our National growth, socially and economically, will be limited by water supply; and (2) the patterns of growth will follow the sources of water which now are known or which remain to be discovered or made available for use. Our investment of effort in this growth can be recaptured fully only if our knowledge of water supplies, of their conservation and prudent use, keeps substantially ahead of the requirement for applying that knowledge to problems of the day. At this time our knowledge lags behind that requirement.

Three basic concepts should guide our thinking -- specifically, (1) our population increases steadily and vigorously, and probably will continue so to increase while our economy remains stable; (2) present-day technologies steadily are raising our standard of living, but those very technologies are rapacious consumers of water; and (3) we cannot make water at reasonable cost today, but perforce must rely on supplies derived ultimately from precipitation and drawn from the streams and lakes, from underground water bodies, and from the oceans.

In the decade just ended, our national population has increased roughly one-tenth; that of the three States along our Pacific Coast has increased roughly one-half. Projected through the coming century, such trends indicate not only the obvious and large Nation-wide increase in number of water consumers, but also potential serious disparities between local rates of such increase and availability of water supplies. Two current examples will suffice to suggest the nature of problems involved.

First, certain of our largest communities, including New York, already have tapped the readily available water supplies within considerable distances. Will they, in the future, so deplete extensive areas that necessary satellite communities cannot thrive within easy reach? What will be the impacts on transportation and housing?

Second, in the Willamette Valley of western Oregon, in which reside the majority of people of that State, the larger communities and economic centers became established along trunk streams and initially drew their water supplies from those streams. With growth and with development of our present concept of public sanitation, those communities turned from the trunk streams to small tributary streams on adjacent mountainous terranes. However, it is characteristic of those terranes that natural runoff dwindles sharply in summer and autumn, and that sites for practicable impounding reservoirs are very costly if existent. Currently, with accelerated population growth, especially in the last decade, the water requirements of those communities are surpassing the summer yields of their local mountainous watersheds. Excepting only the Portland metropolitan area,

*Part I published in January 1951 issue of News Letter.

there is in prospect a general and early return to the trunk streams as sources of water, although in the interim those trunk streams have become the drains for sanitary and industrial sewage. To what extent can obsolescence of water sources be foreseen, and potential alternative sources protected from deterioration owing to indiscriminate use?

In the fields of irrigation and hydro-power, do we conceive at all sharply the water requirement of a century hence? Interim food-and-fiber needs of our growing population will bring much new land under irrigation in the arid West, and will involve more intensive production from lands in the more humid mid-West and East. Even now, in these more humid regions, the advantage of supplemental irrigation to maintain optimum soil-water conditions during the crop season is being convincingly demonstrated by far-sighted producers. Industrially, we have achieved a level of production per worker that far surpasses the achievement in most other Nations, and we have done so very largely by the unstinting expenditure of energy to drive tools. If there is a saturation point in terms of energy per worker, that point is not yet close. Here we have a certain choice between substantially increased hydro-generation and greater pressure on our reserves of mineral fuels, because it seems doubtful that nuclear reactors will, within the foreseeable future, produce a major part of our Nation's energy requirement. Thus, development of hydro-power to near the limit of practicability seems inevitable.

The third of our basic concepts -- that our water supplies must perforce be drawn from the streams and lakes, from underground bodies, and from the oceans -- seems true for the foreseeable future. Here, we deal with three integral elements in the dynamic process of land drainage. With respect to fresh water, fundamentally we can only intercept of salvage water that otherwise would escape us by runoff to the oceans, by evaporation from free-water surfaces, and by transpiration through worthless native vegetation. Within limits not now definable sharply, we can augment known supplies by modifying the natural drainage regimen, both on and beneath the land surface, but let us undertake such modification in the humility of knowledge that in the past, in so doing, man all too frequently has created problems more involved and more to his disadvantage than those which he sought to solve. Possibly our most promising means of augmenting supplies lies in a better understanding and in effectively managed use of our natural underground reservoirs.

Inevitably, we shall move either toward chaotic competition for the water sources which now are known or which may be discovered in desperation, or toward a voluntary and somewhat rigorous self-discipline including (1) orderly and progressive evaluation of all recoverable supplies, (2) allocation of supplies according to priorities of over-all advantage in their use, (3) utmost economy in the consuming uses coupled with widespread treatment of effluents, and (4) re-use of effluents for purposes to which they are suited. The alternative of disciplined, thoughtful management of water-supply destiny in this way obviously is the more constructive.

Admittedly, the problem of assured water supplies for our myriad of users is becoming ever more involved. The current problem is a pressing need for the unbiased information derivable from water facts, more water facts, and still more water facts. Frankly, however, our current store of such facts is so pitifully meager that we cannot specify in detail all the kinds of water facts that advantageously might be gathered now for the long pull in prospect.

Water-Supply Aspects of the Pacific Northwest

The Pacific Northwest is relatively well watered, but supplies available for use range widely from place to place. Owing to the interplay between its ruggedly mountainous terrane and the moisture-laden air masses which move over it from the ocean, that region spans nearly the full range of climatic and hydrologic environments in the Nation -- from the wettest nearly to the driest. Its lower parts yield little runoff in summer. In its western part (west of the Cascade Range), maximum runoff is that from winter rain storms; in its eastern part, that from snow melting on the higher terrane in early summer.

The major stream of the Pacific Northwest, the Columbia River, drains about 219,500 square miles in the United States and 39,500 square miles in Canada. Yet the 15 percent of its drainage area which is in Canada yields about 40 percent of its water. The river's flow characteristics, where it leaves the more arid eastern part of its basin, are shown by following Table 2.

Table 2

Flow Characteristics of the Columbia River at or near The Dalles, Oregon

| | <u>Cubic feet per second</u> |
|--|----------------------------------|
| Average, 71 years of record ending with 1949 . . . | 189,000 |
| Yearly average: Greatest (1894) | 311,000 |
| Least (1926) | 118,000 |
| Maximum day of the year: Greatest (1894) | 1,230,000 |
| Least (1926) | 269,000 |
| Minimum day of the year: Greatest (1900) | 103,000 |
| Least (1937) | 36,000 |

Between The Dalles and its mouth, the river's flow increases about 24 percent -- specifically, from 189,000 to 235,000 cubic feet a second, on the average -- but its drainage area increases only about 9 percent.

Tables 3 and 4, which follow, compare the water productivity of the Columbia River Basin with that of other basins in the United States, and with that of the several continents.

Table 3
Largest 20 Rivers in the United States, in
Order of Average Discharge at Mouth

After "Large rivers of the United States," U.S. Geol. Survey Circular 44, 1949.
 First-order tributaries marked "T", Second-order tributaries marked "TT"

| Rank | River | Drainage area (square miles) | Approximate average discharge | |
|------|---|---------------------------------|----------------------------------|----------------------------|
| | | | Cubic feet per second | Inches on drainage area |
| 1 | Mississippi | 1,243,700 | 620,000 | 6.8 |
| 2 | Ohio (T) | 203,900 | 255,000 | 17.0 |
| 3 | Columbia | 259,000 | 235,000 | 12.3 |
| 4 | St. Lawrence | a 302,000 | a 226,000 | 10.2 |
| 5 | Mississippi above Missouri River (T) | 171,600 | 91,300 | 7.2 |
| 6 | Missouri (T) | 529,400 | 70,100 | 1.8 |
| 7 | Tennessee (TT) | 40,600 | 63,700 | 21.3 |
| 8 | Mobile | 42,300 | 59,000 | 18.9 |
| 9 | Red (T) | b 91,400 | b 57,300 | 8.5 |
| 10 | Arkansas (T) | 160,500 | 45,200 | 3.8 |
| 11 | Snake (T) | 109,000 | 44,500 | 5.5 |
| 12 | Susquehanna | 27,570 | 35,800 | 17.5 |
| 13 | Alabama (T) | 22,600 | 31,600 | 19.0 |
| 14 | White (T) | 28,000 | ---- | ---- |
| 15 | Willamette (T) | 11,250 | 30,700 | 37.0 |
| 16 | Wabash (TT) | 33,150 | 30,400 | 12.4 |
| 17 | Cumberland (TT) | 18,080 | 27,800 | 20.9 |
| 18 | Illinois | 27,900 | 27,400 | 19.1 |
| 19 | Tombigbee (T) | 19,500 | 27,000 | 18.8 |
| 20 | Sacramento | c 27,100 | ---- | ---- |

a At international boundary, lat. 45°.

b Ouachita River added.

c About.

Table 4
World Distribution of Runoff, According to L'vovich, 1945

After "Annual runoff in the United States," U.S. Geol. Survey Circular 52, 1949

| Continent or area | Land area (thousands of square miles) | Runoff (inches) |
|---|---|--------------------|
| Malayan Archipelago | 1,012 | 63.0 |
| South America | 6,941 | 17.7 |
| North America (including West Indies and Central America) | 7,893 | 12.4 |
| Europe (including Iceland) | 3,734 | 10.3 |
| Africa (including Madagascar) | 11,510 | 8.0 |
| Greenland and Canadian Archipelago | 1,499 | 7.1 |
| Asia (including Japanese and Philippine Islands) | 16,321 | 6.7 |
| Australia (including Tasmania and New Zealand) | 3,075 | 3.0 |
| Total or average | 51,985 | 10.5 |

Although average depth of runoff from all the Columbia River Basin is 12.3 inches (about equal to that of North America as a whole), it is less than 1 inch from extensive areas in south-central Washington, north-central and southeastern Oregon, and southern Idaho. The greater part of the runoff is from the mountainous areas; in order of diminishing average yield, from the Coast Ranges, the Cascade Range, the Rocky Mountains of British Columbia, the Bitterroot Range and others to the north along the Idaho-Montana boundary, the Rocky Mountains of western Montana; the Teton, Salt River, and Wind River Ranges of Wyoming; the Sawtooth Mountains of central Idaho; and the Willowa and Blue Mountains of northeast Oregon and southeast Washington. Among the summit areas of these mountains, average yearly runoff diminishes in sequence from more than 80 inches to about 20 inches.*

The Pacific Northwest is favored by the complementary facts that its potential water supplies are copious and currently have been committed to use in a small part only. In terms of total runoff, its water supply is roughly two thirds of that in all the 17 "arid" States. Also, the region has some 40 percent of the Nation's hydro-power resource, and has developed only a minor fraction of that potential. The impacts of this situation on potential economic development in the region and in the Nation are obvious.

The basic requirement is that currently and in the future, the available water supplies serve multiple uses to the greatest common advantage. Surface-water and ground-water supplies are potentially complementary at one place, but mutually exclusive at another. In broadest terms the uses are for private and municipal domestic supply, for irrigated agriculture, for mineral and industrial development, for generation of hydro-power, and for main-stem navigation. The key lies in integrated development on a bold scale for control of floods and for the several potential uses, with due regard to complex international and inter-state aspects, tempered by critical analysis by the best hydrologic, engineering, economic, and administrative talent the Nation possesses.

*McDonald, C. C., and Riggs, H. C., Annual runoff in Columbia River Basin in percent of the mean, 1928-45: U.S. Geol. Survey Circular 36, pl. 20, 1948.

DUES DUE!

Dues are now payable for 1951 as follows: \$3.50 for regular members; \$1.50 for junior members; \$2.50 for members living in counties not adjacent to Multnomah County.

NEW MAILING ADDRESS

Beginning with the February issue, the new mailing address for the News Letter will be 703 Times Building. Formerly it was mailed from 616 Morgan Building. Mrs. Mary L. Murray, manager of the Progressive Advertising Agency, is the new mailer-outer and promises that you will get your copy in plenty of time to avail yourself of the meeting notices.

SKULL CAST (cont.)

The features of this skull are entirely apelike, but there is evidence that the creature walked erect like a man, in common with a variety of its relatives of the same locality and time. This particular animal was a giant in comparison with Proconsul.

In return for the Proconsul skull casts, Dr. T. D. Stewart, Smithsonian curator of physical anthropology, has sent the British Museum a cast of the skull of Tepexpan man, found amid the bones of prehistoric animals near Mexico City a few years ago. Tepexpan man may be the oldest human relic known in the New World.

(From the Smithsonian Institution, January 3, 1951.)

THE GOVERNMENT ROCK-HOUND (nickname for geologist)

Up yonder cliff the rock-hound climbs,
 To map the ground, or what he finds.
 The rock he breaks with a hammer's blow,
 What he finds within we'd like to know.
 The chips and sparks fly free and thick.
 As he swings about with little pick.
 Judge not the tramp as how he dresses,
 As eyeglass to his face he presses,
 He turns the stone face in the light,
 Hoping like hell, his guess is right,
 Then comes up with an awful name,
 That puts our learning soon to shame,
 For he knows it all from book to book,
 And merely bends to take a look.
 His mind is lost in solemn thought
 On folds and faults that God hath wrought.
 His desk is thick with many a stone,
 Crystal, fossil, rock, or bone.

- - - - -

With bouncing gait and lengthy stride,
 On him we pick for fun to ride,
 He has an answer to all we ask,
 But for us to listen, is quite a task.
 For rock we dig beneath yon mound
 Is soft as cheese and sure not sound.
 He scans the hill from car below,
 How he tells what's in it, we'd like to know.
 The fault is here, he surely said,
 Not now active and long since dead,
 But we dig awhile and soon she'll slip,
 We blame and cuss that rock-hound gyp.
 With swinging arms he'll demonstrate,
 On how it happened, but now too late,
 With grin and smile he frames a theory,
 To expound to those who aren't so leary.
 In His mind it's clear, but His words are long,
 Our mind's confused, so we think He's wrong.

Donald C. Birch
 September 1950

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- 2) Those who wish to have knowledge of and to participate in the development of the natural resources of this region; and
- 3) Those who need help in finding, understanding, and enjoying the geological wonders which always and everywhere surround us.

The Society is not for professional geologists, though many lend their professional prestige to its support. On the contrary, the Society is composed of studious folk who want to enrich their intellectual lives and to walk with seeing eyes among the wonders of the earth on which they live.

Membership dues are \$3.50 per year for residents of Multnomah County; \$2.50 for other residents; and \$1.50 for Junior Members. A regular Membership comprises:

- (a) a single person; or
- (b) husband and wife (including children under 18 years of age).

A Junior Membership is for a single person under 18 years of age. Each membership includes one subscription to the GEOLOGICAL NEWS LETTER.

Applicants for membership should send name (and names of family members included, if any), address, phone(s), and dues to the Secretary, (Miss Ruby Zimmer, 805 S. E. 60th Avenue).

Please make checks payable to the Society.

SOCIETY ACTIVITIES

LECTURES: Lectures are held in the Public Library Hall, S.W. 10th Avenue and Yamhill Street on the second and fourth Friday of each month, at 8:00 p.m.

TRIPS: At least one field trip is held each month. For questions and suggestions concerning trips call Mr. Rudolph Erickson, BE 7191.

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

MARCH MEETINGS

Friday Annual Banquet - 6:30 p.m. at Mt. Scott Community House,
Mar. 9 S. E. 72nd Avenue and Harold Street.

Friday "Geology of the John Day Country," an illustrated lecture by
Mar.23 Dr. W. D. Wilkinson, Professor of Geology, Oregon State College.

MARCH FIELD TRIP

Sunday Assemble at 1:30 p.m., March 25, at Troutdale for a trip up the
Mar.25 new highway toward Bonneville. The trip will be led by
1:30 p.m. Dr. Edwin T. Hodge.

NEWS OF MEMBERS

Mr. F. W. Libbey, recently elected as one of the directors of the American Institute of Mining and Metallurgical Engineers, attended the A.I.M.E. annual meeting in St. Louis during February.

* * * * *

The Society extends sympathy to Dr. Lester Jones and his family on the death of Mrs. Jones.

EXTRA! EXTRA! READ ALL ABOUT THE LUNCHEONS

As of March 8, 1951, the first course of the luncheon will be served at 12:05 or 12:10 at the latest. This is a promise on the part of management at the Chamber of Commerce restaurant. It is to be hoped that this will be an inducement for members to attend every week, and let's be early if possible, so the prompt service will be continued. The luncheons are informal, social affairs - and informative too.

M. R. D.

SUN HOTTER*

The heat of the sun, as it reaches the earth, has increased a fourth of one percent during the past 20 years. This was reported to the regents of the Smithsonian Institution at their annual meeting today by Dr. Alexander Wetmore, Secretary of the Institution.

The finding is the result of analysis of more than 16,000 measurements of the solar constant at the Smithsonian's Astrophysical Observatory station on the summit of Mt. Montezuma, Chile. The solar constant is an arbitrary unit of radiation from the sun - the amount of heat from the sun falling during one second on a black cube with the dimensions of one cubic centimeter. It is assumed that the cube is at the outer edge of the earth's atmosphere, and appropriate corrections are made to support this assumption.

The measurements made at the Montezuma station are the most accurate available, according to the report of L. B. Aldrich, director of the Smithsonian's Astrophysical Observatory, and there can be little question that the indicated heat increase is real. While the actual increment may seem small, in light of the enormous amount of solar radiation falling on the earth it means enough extra heat to have affected climate to an observable degree.

Between 1920 and 1930 the mean of 5,820 solar-constant measurements at Montezuma gave a solar-constant value of 1.9431 calories. Between 1931 and 1940 the mean of 5,520 measures was 1.9463. Between 1941 and 1948 the mean of 5,004 measures was 1.9478.

This is of particular significance, according to the report of the Board of Regents, because of other evidence that has accumulated of climatic changes in various localities over the earth. On the whole, these changes indicate that average temperatures have increased somewhat over the past century, with an accelerated increase in the recent past.

*From the Smithsonian Institution, January 12, 1951.

'BASEMENT COMPLEX'*

Dictionaries are wonderful things. They not only give us meanings of words; they sometimes give a lift to the spirits.

For example, in looking for another word (it always happens that way) we noticed the phrase "basement complex." From additions the psychiatrists have made to the language we immediately supposed that one who had a basement complex was a person who was perennially "down in the dumps" and needed some kind of a boost to get him out of his self-imposed ashpit. Or at least that he (or she) was someone heartily addicted to shopping in bargain basements.

But no. A "basement complex," according to Webster's New International, is a geologic term meaning "the assemblage of metamorphic and igneous rocks underlying the stratified rocks in any particular region."

Now that we know what it is, we are glad we have a "basement complex."

*From the Christian Science Monitor, February 13, 1951.

WHAT ARE STARS?*

Twinkle, twinkle, little star
How I wonder what you are. . . .

Everyone has felt something of the curiosity expressed in this familiar childhood rhyme at least occasionally during his life, and men have wondered about the stars for many thousands of years. With a very few this curiosity has been the most important thing in their lives, and these few are the astronomers of past and present. It is little short of amazing that man has been able to learn as much as he has about the stars, and his knowledge of these tiny points of light is one of the greatest accomplishments of the human intellect. Ingenious methods and wonderfully accurate measurements, instruments of many kinds, extremely sensitive or precise, simple or complicated; but above all careful and disciplined thought, have enabled man to plumb the almost fathomless depths of the universe.

We are likely to call any bright point of light in the night sky a star, but if we do, we will sometimes make a mistake. The ancients noticed that a few of these points moved about among the others which seemed to be fixed in their arrangement. These moving objects were called planets, meaning "wanderers" or "wandering stars." Those points of light whose arrangement did not change were called "fixed stars." We know now that the planets are bodies more or less like the Earth, moving around the Sun as we do. Careful measurements of the relative positions of the stars over the centuries finally disclosed the fact that they too have individual motions, much too slow to be detected with the unaided eye in a life time, or even in many lifetimes. Changes in the brightness of a few stars were observed, also, so that men knew that the stars were fixed neither with regard to position nor brightness, but most of man's ideas about the stars were based on speculation rather than on actual fact until hardly more than a couple of centuries ago.

It had been long suspected that the stars were bodies like the Sun, but no one could be sure of this until the distance of at least one star was measured, for without some knowledge of their distances it was impossible to decide whether the stars were relatively faint and near, or very brilliant and very distant. The appearance of the sky would be the same in either case. Many attempts were made to determine their distances but none was successful until 1838. However, these failures were not entirely fruitless, since it was realized that some of the attempts failed only because the stars were very far away, and hence it was known that the stars must be at very great distances. Since 1836 the distances of a few thousand stars have been determined by various methods yielding results with various degrees of accuracy.

The amount of light received from a single star can be measured with great accuracy with the help of sensitive photo electric cells or "electric eyes," as well as by other instruments and methods. Once we know the amount of light received from a star, that is, its apparent brightness, then a knowledge of the distance will allow us to compute its real brightness, its "candle-power," the

*Quoted from a booklet (No. 9 of a series on astronomical topics) prepared by the staff of the ADLER PLANETARIUM, Chicago 5, Illinois.

actual amount of light given off by the star. We can go through the same process with the Sun and then we can compare the brightness of the stars with that of the Sun, and we find that the Sun is an average star, that the stars are bodies like the Sun as far as brightness is concerned. The distances of stars are measured with the same methods used by the surveyor in determining the height of a mountain without climbing it, or in measuring the width of a river without crossing it. In making such a measurement the surveyor lays out a triangle with two angles where he can reach them, while the third is at the inaccessible point, as shown in Figure I, where the points A and B represent two stakes driven in the ground on the surveyor's side of the river while C is a tree or other easily recognizable object on the other side of the river. Placing his transit (a device for measuring angles) at A, the surveyor determines the angle at A, marked 1. He next places his transit at B and measures the angle 2. Finally, he measures the distance between A and B. He might then draw the triangle accurately to scale and measure the distance CD, which is the width of the river, but he more usually computes this distance with the aid of trigonometry, that branch of mathematics dealing with triangles.

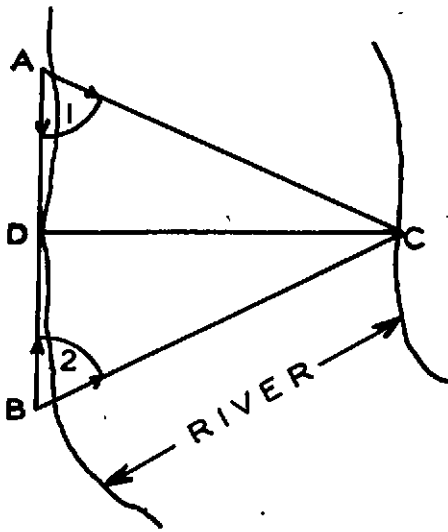


FIGURE I

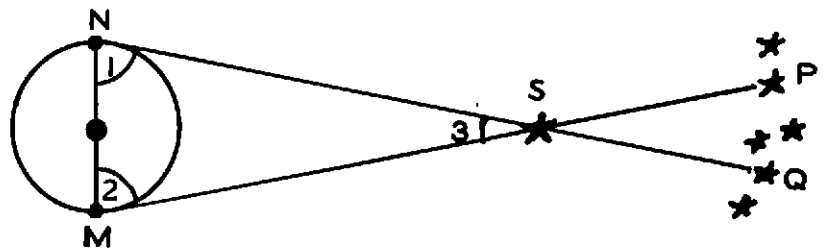


FIGURE II

Precisely this method is used in measuring the distances of the stars, but it is necessary to make the distance or base line between A and B as great as possible since the distance to be measured is so great. The astronomer's base line is the diameter of the Earth's orbit. He observes the star when the Earth is on one side of the Sun, say at M in Figure II and again about six months later when the Earth has gone half way around the Sun and stands at N, 186,000,000 miles from its first position at M. From M the nearby star S would appear almost in front of the star P, six months later from N the star S would appear to have shifted over until it would seem to be almost in front of the star Q. This apparent shifting of the nearby star, measured as an angle (3), is called "parallax." From it the angles 1 and 2 can be determined, and the distance calculated.

The astronomer usually expresses the results of his measurements in terms of half the angle at the star, marked 3 in Figure II. This half angle is called the "parallax" of the star, and the more distant the star, the smaller its value. Stellar distances are rarely expressed in miles, since the figures involved are too large to comprehend. To avoid this difficulty, longer units of distance are employed, and one of the best known of these is the light-year. This, by the way, is not a unit of time, but is simply a distance, the distance travelled by light in one year. Since light goes nearly 11,000,000 miles in one minute a light-year is an enormous distance; amounting to about 6,000,000,000,000 miles.

The nearest star, except the Sun, is at a distance of 4-1/3 light-years, some of the bright stars are at distances of hundreds of light-years, while many of the fainter stars visible to the unaided eye are at distances of thousands of light-years. With the greatest telescopes it is possible to photograph individual stars at distances of a few million light-years. Table I gives distances and calculated brightnesses of some representative stars.

Table I

| <u>Star</u> | <u>Brightness (Sun = 1)</u> | <u>Distance Light-Years</u> |
|------------------|---------------------------------|---------------------------------|
| Deneb | 67,000 | 1630 |
| Rigel | 21,000 | 540 |
| Antares | 1,900 | 250 |
| Spica | 440 | 120 |
| Capella | 150 | 42 |
| Sirius | 30 | 8.6 |
| Procyon | 6.9 | 11.1 |
| Sun | 1 | 1/270,000 |
| Epsilon Indi | 0.16 | 11.2 |
| Lacaille 9354 | 0.014 | 12.0 |
| C. D. -46° 11540 | 0.0033 | 14.5 |
| VanMannen's Star | 0.00019 | 13.3 |
| Wolf 359 | 0.000023 | 8.0 |

Two things can be noticed from this table: first, the Sun is about average as far as brightness is concerned; second, there is an enormous range of brightness among the stars. The brightest known stars give off a billion times as much light as the faintest. Some of the star names in this table are familiar, others are queer combinations of numbers with letters or names. These latter are usually the numbers of the stars in various catalogues together with the name or an abbreviation of the name of the catalogue, or sometimes a sort of numerical shorthand description of the position of the star in the sky.

The temperatures of the stars can be determined roughly with ease, and accurately by more complicated and difficult methods. It is easy to distinguish the hot stars from the cool ones with the unaided eye merely by noting their colors. A relatively cool star, like a piece of iron barely hot enough to glow, gives off red light. If the piece of iron or the star (the material involved does not matter) is hotter, it will give off orange light, if still hotter yellow light. When the temperature reaches that of our hottest furnaces the light will be nearly white, and at tremendously high temperatures the light will be a little blue. This fact is used in determining temperatures here on the Earth, in steel mills for example. The color of the light from the molten steel in a great furnace is measured carefully, and the temperature of the steel is thus determined within a few degrees. Careful measurement of the color of the light from a star will allow its temperature to be determined accurately. Here again we find that the Sun is about average. The coolest stars that can be observed have surface temperatures of about 3000° F. These are quite red, while the Sun, somewhat yellowish in color has a surface temperature of about 10,000° F. The hottest known stars have surface temperatures in the neighborhood of 200,000° F.

Once we know the real brightness (or luminosity) of a star and its temperature, its diameter can be computed. Let us return to our piece of glowing iron for a moment. Everyone knows that as the iron becomes hotter, not only does its color change from red to white, but it also becomes brighter. A piece of red hot

iron is dull, but white hot iron gives off so much more light that it is dazzling, and is difficult to look at because it is so bright. By actual experiment we can learn how much light is given off by one square inch of iron (or one square mile of the surface of a star) at various temperatures. Knowing the total amount of light and from its temperature the amount given off per square mile of its surface, we can compute the number of square miles in the surface of the star, and from this its diameter. Once more we find that the Sun is near the average. Some very faint stars have very high temperatures, that is, each square mile of their surfaces gives off a great deal of light. These stars are faint only because they are small, and the smallest of them are no larger than some of the planets. On the other hand, some very bright stars are relatively cool, that is, each square mile of their surfaces gives off but little light and these stars are bright only because they have enormous surfaces. The largest of them have diameters greater than that of the orbit of the Earth and even the orbit of Mars. Table II gives the temperatures and diameters of some typical stars.

Table II

| <u>Star</u> | <u>Diameter*</u> | <u>Volume</u> | <u>Mass</u> | <u>Density</u> |
|-------------------|------------------|---------------|-------------|----------------|
| V V Cephei | 1220 | 1,800,000,000 | 47 | 0.00000003 |
| Aldebaran | 390 | 59,000,000 | 10 | 0.0000002 |
| Zeta Aurigae | 300 | 27,000,000 | 20 | 0.000007 |
| V380 Cygni | 29 | 24,000 | 44 | 0.002 |
| Capella A | 16 | 4,100 | 4 | 0.001 |
| Beta Centauri | 6 | 216 | 4 | 0.02 |
| Vega | 2.6 | 17.6 | 3 | 0.2 |
| Sirius A | 1.9 | 6.9 | 2.4 | 0.3 |
| Alpha Centauri A | 1.25 | 1.95 | 1.1 | 0.6 |
| The Sun | 1.0 | 1.0 | 1.0 | 1.0 |
| 70 Ophiuchi A | 0.93 | 0.8 | 0.89 | 1.13 |
| W Ursa Majoris B | 0.72 | 0.37 | 0.54 | 3.33 |
| Eta Cassiopeiae B | 0.56 | 0.19 | 0.47 | 2.55 |
| O Eridani B | 0.018 | 0.000006 | 0.44 70,000 | |
| Sirius B | 0.022 | 0.00001 | 0.98 85,000 | |

*Diameter, Volume, Mass, and Density are all given in terms of the Sun.

Note: Your editor would appreciate hearing the reaction of News Letter readers to this type of article. If it is liked, more could no doubt be printed in the absence of material on strictly geological subjects.

H.H.

SYMPOSIUM ON POSSIBLE FUTURE OIL PROVINCES
OF THE PACIFIC COAST REGION

Part III - Oregon (Abstract)*

By

H. J. Buddenhagen
Shell Oil Company, Portland, Oregon

Oregon's prospective oil territory is considered to be limited to two areas where thick sections of unmetamorphosed marine sediments occur, namely, the Coast Range province of northwestern Oregon, and a part of the Ochoco Mountains region in central Oregon.

The former, with an area of 14,000 square miles, contains more than 15,000 feet of clastic sediments mostly of marine origin, together with several thousand feet in interbedded volcanics. These rocks range in age from middle Eocene to Pliocene.

In central Oregon more than 35,000 feet of Mesozoic and Paleozoic predominantly marine sediments, with no interbedded lavas, are exposed in windows in the regional cover of Tertiary and younger volcanics. Their extent below the volcanic cover is unknown.

The detailed structure and geologic history of neither region has been adequately deciphered. The Coast Range area seems to be essentially a broad, undulating northerly plunging geanticline, but it is modified and complicated by many lesser structural features. Dips are generally gentle and folds symmetrical. The central Oregon area is closely and complexly folded and numerous unconformities are present.

No oil seepages or oil sands are known in Oregon although oil and asphalt have been found in basalt vesicles, fossil cavities, and drusy cavities in quartz veins.

Ninety-five to 100 wildcat wells have been drilled in Oregon: 45-50 in the Coast Range Province; 3 in central Oregon; 25-30 in the Harney Basin and Vale areas of southeastern Oregon, with the remainder at scattered locations. Non-commercial amounts of gas were encountered in some of these wells, but no authenticated oil indications are known. Wildcatters have been attracted to the southeastern Oregon areas apparently by the occurrence of natural gas in the lacustrine and other continental sediments which occupy structural basins in this area.

*Reprinted by permission of the American Association of Petroleum Geologists, from the Bulletin, vol. 34, no. 12, p. 2382, December 1950.

FOSSILS DISCOVERED*

A total of twenty-two newly discovered animals, some dating from the earliest-known days of life on earth, have just been described, chiefly by Smithsonian Institution scientists, and named in honor of Austin H. Clark, the Institution's recently retired curator of echinoderms.

An entire issue of the Journal of the Washington Academy of Sciences is devoted to their papers, which are published as a token of esteem for Mr. Clark, for a generation one of the best-known of American biologists.

Of particular significance are two fossil brachiopods, found in rocks of the Appalachian Valley of Virginia, described by Dr. G. Arthur Cooper, Smithsonian curator of paleontology. The brachiopods were shelled animals which swarmed in earth's ancient seas. They were present about 500,000,000 years ago during the Cambrian geological era. Rocks from this period contain the earliest easily recognizable fossils of living things - mostly shelled creatures which became imbedded in sea-bottom mud, later compressed into rock.

Before the Cambrian there were only vague traces which can be ascribed to life. Yet the creatures of this dawn age showed a profound specialization which indicates a long period of evolution through the darkness of the preceding millenniums. The brachiopods are of special significance in that they were present early in the Cambrian, reached their greatest development a few scores of millions years later, and have persisted in considerable numbers and variety in the oceans of today. Thus they constitute an unbroken line of witnesses of life's history. They are an extremely diverse race, but some present forms differ little superficially from those of the warm seas of the early Cambrian, hundreds of millenniums before the first traces of life were present on dry land.

The two new genera named in honor of Mr. Clark are of particular interest in that they seem to represent a transition period from the nearly 2-billion-year darkness of the pre-Cambrian to the time when life is popularly supposed to have started. In some respects they are quite advanced types, in others very primitive. They lived very early in the Cambrian, yet their combination of characters indicates a very long time of development from the ancestral brachiopod forms to their specialized forms.

Other creatures named for Mr. Clark range from fossil mollusk forms, representing transitions from the Cambrian to later types, to a new genus of living moths and a new species of living worms.

*From the Smithsonian Institution, February 21, 1951.

NEWS OF MEMBERS

Change of address:

| | | <u>Zone</u> | <u>Phone</u> |
|--------------------------|----------------------------------|-------------|--------------|
| Mr. and Mrs. Sam Reichen | 8131 S.E. Crystal Springs Blvd., | 6 | |
| Miss Sallie E. McCoy | 704 S.E. 34th Avenue | 15 | |
| Mr. James A. McNab | 3434 N.W. Thurman | 10 | |
| Miss Carol Waack | 301 N. Alberta Street, Apt. C | 11 | |
| Miss Mella C. White | 7114 S.W. Brier Place | 1 | |

New Junior Member:

| | | | |
|--------------|------------------------|----|---------|
| Edith Church | 10105 N.E. Failing St. | 20 | KE 0425 |
|--------------|------------------------|----|---------|

GEOLOGICAL NEWS LETTER

OFFICIAL PUBLICATION OF THE



Vol. 17 No. 4

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APRIL 1951

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GEOLOGICAL SOCIETY OF THE OREGON COUNTRY

Officers of Executive Board, 1951 - 1952

| | | | <u>Zone</u> | <u>Phone</u> |
|------------|----------------------------------|----------------------------------|-------------|--------------|
| President: | Mr. Ford E Wilson | 11844 S.E. Pine Street | 16 | |
| Vice-Pres: | Mrs. May R. Dale | 1202 S.W. Cardinell Drive | 1 | CA 2123 |
| Secretary: | Miss Ruby M. Zimmer | 805 S.E. 60th Avenue | 15 | LA 8319 |
| Treasurer: | Mr. Norris B. Stone | Rt. 1, Box 179-A, Oswego, Oregon | | Oswego 6531 |
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| | Mr. Orrin E. Stanley, (1953) | Mr. Louis E. Oberson, (1953) | | |
| | Mr. E. Cleveland Johnson, (1954) | | | |

Staff of Geological News Letter

| | | | | |
|-----------------|--|----------------------------|----|---------|
| Editor: | Mr. Orrin E. Stanley | 2601 S.E. 49th Avenue | 6 | VE 1250 |
| Asst. Editor: | Miss Margaret L. Steere | 6203 S.E. Scott Drive | 16 | BR 2276 |
| Assoc. Editors: | Mrs. Leo W. Haven, Mr. F. W. Libbey, Mr. A. D. Vance, Mr. F. L. Davis | | | |
| Bus. Mgr.: | Mr. Raymond L. Baldwin | 4804 S.W. Laurelwood Drive | 1 | CH 1452 |

SOCIETY OBJECTIVES

To provide facilities for members of the Society to study Geology, particularly the geology of the Oregon Country. The establishment and maintenance of a library and museum of geological works, maps, and specimens. The encouragement of geological study among amateurs. The support and promotion of geologic investigation in the Oregon Country. The designation, preservation, and interpretation of important geological features of the Oregon Country. The development of the mental capacities of its members in the study of geology and the promotion of better acquaintance and closer association between those engaged in the above objectives.

SOCIETY ACTIVITIES, 1951 - 1952

EVENING MEETINGS: Formal lectures or informal round table discussions, on geological subjects, on the second and fourth Fridays of each month, at Public Library Hall, S.W. Tenth Avenue and Yamhill Street. 8:00 P.M.

FIELD TRIPS: Usually, one field trip is scheduled for each month.

LUNCHEONS: Informal luncheons, with geologic motif, each Thursday noon, at Chamber of Commerce, 824 S.W. Fifth Avenue. 85¢ per plate.

PUBLICATION: The GEOLOGICAL NEWS LETTER, issued once each month, is the official publication of the Society.

MEMBERSHIPS

A Member shall be a person at least twenty-one years of age who is interested in and supports the aims and objects of the Society and who has been recommended by the membership committee. A regular membership comprises: (a) a single person, or (b) a husband and wife, with children under 18 years of age. A Junior Member shall be a person under twenty-one years of age, with like qualifications and recommendation. Each membership receives one subscription to the Geological News Letter.

Annual dues are \$3.50 for residents of Multnomah and adjacent counties, \$2.50 for others, and \$1.50 for Junior Members. Remittances should be made payable to the Society. Applicants for membership should submit an application form, and remittance for dues, to the Secretary.

CALENDAR: APRIL 1951

- April 5 Weekly noon luncheon.
Thursday
- April 12 Weekly noon luncheon.
Thursday
- April 13 No meeting scheduled.
Friday
- April 20 Annual Banquet. 6:30 p.m.
Friday Mt. Scott Community Hall. See special announcement below.
- April 26 Weekly noon luncheon.
Thursday
- April 27 Regular evening meeting. Library Hall. 8:00 P.M.
Friday The first of a series of round table discussions.
The subject tonight is: Methods of Collecting and Preserving
Geologic Materials. How to get Specimens and What to Do
with them.
- April 28 A conducted tour through the U.S. Bureau of Mines Laboratory
Saturday at Albany, Oregon. The laboratory is located just south of
Albany. Proceed south from the Highway 99 overpass a short
distance and the laboratory buildings will be visible just
west of the highway. (The former Albany College campus) Assemble at the
laboratory before 9:30 a.m. so that the tour may start promptly. It is
necessary to know the approximate number of persons who will make this
tour. Therefore please get word as soon as possible to Ford E Wilson
giving your name and number of persons in your party. If time and weather
permit, a locality for mineral collecting may also be visited.

THE ANNUAL BANQUET AGAIN

Hope you didn't destroy your tickets if you did not hear of the cancellation due to snow.

NOTE THE NEW DATE. FRIDAY, APRIL 20

All other features remain as before.

If you could not attend on the original date, call Leo Simon, BE 0300 at once for reservations. The price is \$2.00 per plate. You may have fish if you desire. Just tell Leo when you order tickets. If you cannot attend on this new date, call Leo at once for a refund on your old tickets so that your tickets may be resold. If you have reservations, but did not pay for your tickets, please do so now.

The Mt. Community House is at S.E. 72nd Avenue and S.E. Harold Street.

TO GET THERE: Follow S.E. Foster Road to S. E. 72nd Avenue and turn south to Harold Street, or follow S. E. Woodstock Blvd. to S.E. 72nd Avenue and turn north to S. E. Harold Street, or take Foster coaches at S.W. 5th and Taylor and get off at S.E. 72nd and Harold.

Remember that meal time is 6:30 p.m. --- No foolin'.

Be seein' you.

H.B.S.

REPORT OF THE SECRETARY - 1950

February 23, 1951

The Society has a total of 156 memberships as of the present date. Twenty-one of these are new adult memberships, and four are new junior members.

There are two subscribers to the News Letter.

The Executive Committee held four meetings during the year.

Respectfully submitted,
/s/ Ruby M. Zimmer
Secretary

ANNUAL DUES FOR 1951

Publication of the Society Membership List is planned for the June issue of the News Letter. In order that the list may be accurate and complete and to afford time for compilation, each member whose dues are in arrears should see to it that a remittance is sent to the Secretary as soon as possible and in no case later than May 1.

MEMBERS BADGES

All members of the Society are requested, most earnestly, to wear their membership badges at all meetings and on field trips. This will be a courtesy to the incoming administration and will also assist the new and old members to get acquainted. One badge is provided for each member without cost.

G. S. O. C. NEW MEMBERS

| | | <u>Zone</u> | <u>Phone</u> |
|--|------------------------------------|-------------|--------------|
| Mr. and Mrs. Charles B. Carpenter | 2504 N.E. Dunckley Street | 12 | TR 7475 |
| Mr. R. H. Corey | 421 Corbett Building | 4 | BE 5322 |
| Mr. and Mrs. Marvin J. Lytle | 5344 S.E. 34th Avenue | 2 | TA 9601 |
| Mr. and Mrs. James A. Mullins and James A. Mullins, Jr. | Rt. 1, Box 356, Lake Grove, Oregon | | Oswego 20986 |
| Mr. R. A. Schneider | 1023 N. W. 18th Avenue | 9 | BR 4080 |
| Mr. and Mrs. Clarence D. Skibley | 2954 S.E. 115th Avenue | 66 | LI 4537 |

RESIGNATION

Mr. and Mrs. Ted R. Roberts (Miriam Shepard Roberts).

CHANGE OF ADDRESS

Miss Jeanne Pruett 3203 S.E. Gladstone Street 2 EM 2035

(It should be noted that the paper on "Fossil Sequoia" described on page 27 of this issue of the News Letter contains no illustrations of wood itself. The plates depict leaves, twigs, etc.)

A NEW PAPER FOR STUDENTS OF FOSSIL WOOD

Recently published is the following paper by Dr. Ralph W. Chaney, Professor of Paleontology, University of California:

"A Revision of Fossil Sequoia and Taxodium in Western North America
Based on the Recent Discovery of Metasequoia"

(Vol. 40, Part 3, Transactions of the American Philosophical Society,
January 1951; 93 pp., 12 plates. Paper cover. \$1.50.)

This represents the first comprehensive survey of the systematic status of a group of related plant genera from the Cretaceous and Tertiary of North America. Restudy of fossil material referred during the past century to Sequoia and Taxodium became necessary after Miki showed that Tertiary specimens from Japan are referable to a distinct genus, Metasequoia. Discovery of surviving trees of Metasequoia in central China has opened the way to a more complete understanding of the characters of these three taxodiaceous genera, and has made possible the revision of twenty-four fossil species of Sequoia and Taxodium from western North America. Eleven of those previously considered to represent Sequoia are now known to be referable, wholly or in part, to Metasequoia on the basis of foliage and cone characters; five of those previously considered to represent Taxodium are now known to be referable, wholly or in part, to Metasequoia. As now revised, one species each of Sequoia and Metasequoia are recognized from the Cretaceous of western North America; derivative species appear in rocks of Tertiary age, in which Taxodium is first recorded. All five fossil species are closely similar to their scattered survivors in the United States and China, as shown by many illustrations.

Copies may be obtained from The American Philosophical Society, 104 South Fifth Street, Philadelphia 6, Pennsylvania, at \$1.50, orders to be accompanied by remittance.

F. E. W.

LUNCHEON NOTES - March 1, 1951

Twelve members made up a congenial luncheon group today. Mrs. May Dale presided, thus performing her first duties as Vice President of the Society. She, with timidity, made a trip to the kitchen to ask that the first course be served no later than 12:08, but quickly regained her courage when management cooperated wholeheartedly and promised that in the future we would have no complaint of delayed service. Perhaps this will enable more members to drop in for this friendly hour....Orrin Stanley circulated several interesting pamphlets and maps. Ada Henley passed around a piece of obsidian mirror. Such mirrors were made during our last war and acted as "guides" on warships as they crossed the ocean. They were installed in what is called a "bearing circle" which is a gadget by which the ship's position is read at night by the stars. A black mirror will not throw a beam of light like a quicksilver-coated one which might betray the ship's position to an enemy....Ada also shared the Science News Letter of January 13, 1951, in which there was an informative article on a moving mass in the sea which may represent a new source of food for a hungry world....Leo Simon gave a resumé of the "three-basement" trip of last Sunday which he so ably led.

Mrs. May R. Dale
(I was drafted)

Leo F. Simon gave an illustrated talk on "The John Day Country" at the luncheon of the Silverton Rotary Club, Monday, March 26, 1951.

BACKYARD GEOLOGY*

A few years ago, when travel was very much restricted for most of us, I ran across this hint: "If you want to study geology in the field, start in your own back yard. You won't discover any Yosemite, but every speck of your soil has a history that goes back of the beyond!"

My natural reaction was that our mass of adobe soil held few secrets from me. I knew just about what it would grow - and wouldn't grow - and how hard it compacted in summer, how it loosened up after the rains. I knew that it lacked enough humus and so on. No secrets there, but still ---

When I looked at it more carefully, with an eye to geological interpretation, the garden did not look any different from its accustomed aspect. The drainage was from West to East. Hold on! The general slope of our valley is from the Mountains to the sea - from North to South! Why was my bit different?

Nearly a mile to the West lies a range of hills, themselves as much younger than our mountains as our particular mountains are younger than the mineralized ranges further West. My drainage slant should indicate either erosion from the hills, or a tilting of the area that culminated in those hills.

And, then, what is adobe? I know this soil compacts like clay and can be formed into bricks which, dried in the sun, can be used to build walls good for a century, when properly protected from the rains. I made an amateurish investigation, with the aid of a test tube, to learn something of the physical makeup of this, my soil.

Shaking up a chunk of the soil in water, I allowed the stuff to settle at its own sweet will. At once, a sand finer than beach sand settled to the bottom and this was followed by a well-compacted sand that graded into soil. This was covered by a little mud with slime slowly settling on it.

The top water was still fawn colored, with floating fiber which I took to be my heritage of humus. That's just the top soil. I haven't got around yet to digging down as far as the granular subsoil which I suspect must lie there.

The angularity of the sandy particles at the bottom of the tube suggests a river origin, and a study of the map and of the general terrain reveals seven canyons petering out in this valley. During the centuries, flood water has poured down these canyons, bringing rocky fragments along and grinding them in the mill of the gods to spread over the valley floor.

At some level on the 1,000-foot fill from the mountains, most of our valley, including my garden, was once a river bed, for we have seen these streams shift from place to place. And before that, the area was an ocean bed - and so on, back and back to that world sans men, sans beasts, sans trees and birds, sans the great reptiles, sans the primitive plants, sans life of any kind.

So perhaps I haven't quite exhausted the geological possibilities of my garden. There may be a fact or two yet to be unearthed.

*From Sparling Metro Grams, March 1951.

Rudolph Erickson has been released from the Good Samaritan Hospital following his bout with the flu. When seen he was still somewhat weak, but was taking treatment in the Heathman Hotel dining room.

DUVAL CREEK FOSSIL WOOD LOCALITY, LANE COUNTY, OREGON

Several years ago, the writer collected a number of pieces of fossil wood from a locality near Fall Creek, in Lane County. This material was submitted to Prof. George F. Beck, Central Washington College of Education, Ellensburg, Washington, for examination. Some specimens proved to be of considerable interest. One became the type specimen of Larix oregonensis Beck, mentioned previously in Geological News Letter, (vol. 14, page 79, September 1948).

Recently, another wood locality, in the same general area, was found by the writer and some 200 specimens collected. A cursory examination shows that many have good grain preservation and both hard and soft woods are represented. It is intended to submit this material to Prof. Beck for further study, and it may be that his findings will be reported in the News Letter.

The locality is near the mouth of Duval Creek, a small tributary of the Middle Fork of the Willamette River, about 12 miles upstream from Lowell, Oregon. The specimens occur about 100 to 125 feet above present river level, deeply embedded in a clay surface soil. They are associated with volcanic rock river pebbles and many rounded pieces of obsidian. This obsidian is, in itself, of some interest. Three types are represented, a black glass containing abundant, tiny, curved, hair-like inclusions (trichites), a dull, light gray sort and a small amount of streaked black and brick-red material similar to that found at Glass Buttes in Central Oregon. There is insufficient evidence at hand to indicate the original source of either the wood or the obsidian.

A small number of extra pieces of the obsidian containing trichites are available for members of GSOC who desire a "text-book" example of these inclusions. The trichites are not visible with a hand lens but are displayed very well in thin sections.

F. E. W.

BASEMENT TRIP - February 1951

A group of some 50 members and friends was complimentary to Leo Simon's capable leadership of the Society's basement trip on Sunday, February 25. Our hosts and hostesses for the day were Mr. and Mrs. Renton, Mr. and Mrs. Rockwell, and Mr. and Mrs. A. J. Schneider; we do thank them for their hospitality. All collections were beautiful; there was much information given out regarding minerals in general, and agates in particular; there were many good ideas to be tucked away in one's gray matter concerning what to exhibit, how to exhibit, shelf and lighting arrangements, and especially down-to-earth instruction on how to cut and to polish with discs and saws which can be handmade in one's own basement (or living room) at very little cost. Tony Schneider made all this latter instruction sound so simple that your Veep for 1951 feels that she can turn out a diamond set saw and a carborundum disc in one hour flat and have enough money left over to go out on a trip and bring home some thunder eggs and other specimens with which to wear out this equipment practically built already - at least mentally. Your reporter has a basement too. She'll vote for a basement-cleaning bee any day and make her basement the first location!

May R. Dale

Orrin E. Stanley showed kodachrome slides of autumn foliage in the Maritime Provinces of Canada to the Salem Geological Society Thursday evening, March 22. After the general meeting, Mr. and Mrs. Carl P. Richards entertained several members of the Society in their home. Cake, coffee, and candy easter eggs gave added impetus to the conversation which touched on such subjects as geology, photography, history, engineering and travel with a brief glimpse into the field of astronomy.

FLORIDA A RESORT DURING ICE AGE*

Florida may have been a late ice-age refuge for North American mammals. Here, in a relatively temperate climate, creatures found haven during the centuries when ice inundated their normal habitats. Into this "ark" man, newly established in the New World, occasionally ventured.

This is a conclusion which may be drawn from a systematic study of fossil bones recovered near Melbourne, Florida, which has just been reported by Dr. C. Lewis Gazin, Smithsonian Institution curator of vertebrate paleontology.

Two bone deposits near Melbourne came into prominence about 25 years ago when remains which were unquestionably human, but differing in no major respect from human remains of today, were found associated with fossil bones of creatures extinct for more than 10,000 years. The human remains were studied at the time, but a complete study of the animal bones was delayed.

Dr. Gazin has found representatives of 50 mammal types. More than half of these animals are extinct and have not existed since the close of the last ice age or the beginning of the present era. Some, the fossil record shows, had died out earlier in the north, and the Florida forms may be considered as refugees from the ice. Other forms were probably native to the area.

Still, Dr. Gazin believes, this fauna hardly can have survived the last ice-age period. Otherwise, instead of becoming extinct some of the species would have migrated north again into more suitable environments.

Among the extinct creatures are the great sloth and three species of armadillos. There were evidently considerable numbers of these, mingled with opossums, moles, and bats hardly distinguishable from forms living now. There were others, such as bears and otters, with only minor variations from extant species. Among the fossil bones were those of a jaguar, which is not now found in the United States except occasionally as a straggler along the Mexican border.

*From the Smithsonian Institution, February 8, 1951.

SMITHSONIAN INSTITUTION

Approximately 793,300 objects and specimens have been added to the Smithsonian collections during the past year, the Board of Regents were told. This is about 400,000 more than last year. These additions, chiefly to the collections of the U.S. National Museum, a Government-supported bureau of the Institution, cover a wide range. The great majority are natural-history specimens, ranging from mammal skins to insects. Notable among the others is a deposit by President Truman of the sacred Scrolls of the Law, hand-lettered in Hebrew on parchment, and a copper ark decorated with Biblical inscriptions in silver, a gift from Chaim Weizmann, first president of Israel.

Notable additions, Dr. Wetmore reported, were made to the collections of the National Air Museum, a branch of the Smithsonian whose buildings have not yet been erected. These consisted of 465 aeronautical objects, most of which are being kept in storage at Park Ridge, Illinois, until suitable facilities for their exhibition are provided in Washington.

Speaking of vicious circles - just cast your eye over the front cover of the banquet program when you get hold of it. You will notice that Dr. Edwin T. Hodge, after a short sixteen years, reappears minus his title and his middle initial. Possibly this is the effect of erosion or weathering. A geologist should know.

LUNCHEON NOTES - March 15

To quote from a well-known radio announcer: "Names make news, as do these."Vice President May R. Dale presided at the weekly luncheon roundtable session at the Chamber of Commerce Thursday, March 15th. It was noticed that none of the nine men present did her the honor to address her as "Madame President" or "Madame" anything else--Rather disappointing to a newly elected officer, it would seem..... The nine offending males were Messrs. Baldwin, Elder, Kelham, Libbey, Matthews, Schminky, Simon, Stanley, and Vance.....Mr. Simon had provided a "get-well" card which was signed by all and sent to Rudolph Erickson who is confined in an isolation ward of the Good Samaritan Hospital with the flu.....Thos. C. Matthews brought samples of lightweight concrete aggregates made by calcining siltstone and sandstone. Some of the material is used in "Lite-rock".....A. D. Vance had recently visited Tracy Wade who was one of the most active members of the Society ten or more years ago, before his sight became so impaired that he had to retire from his work with the telephone company. From relating the news of this visit, Mr. Vance talked on and on, ignoring attempts to get him to pass the sugar and cream, which he doesn't use anyhow.....Leo Simon, feeling the futility of trying to break into the conversation, drew attention to himself by constructing architectural designs with his paper napkin.....The presiding officer brought a copy of Ferdinand C. Lane's "The Story of Mountains" (Doubleday) and did not ask anyone to return it to the library for her. Wouldn't she be called an "independent woman"?It is only fair to the management to state that the soup was served promptly at 12:10, while it was still hot, that the other courses followed as required, and that the collector came well before adjournment time at one o'clock.....There was heard a plaintive wail that the apple pie was spirited away from in front of the vacant chairs before it could be appropriated by the owner of a boyish appetite.

O.E.S.

* * * * *

LUNCHEON NOTES - March 29

In days gone by, fourteen people at a geological luncheon was a remarkably small group, but now we are pretty well pleased with ourselves to have that many.

Although President Ford E Wilson was present, Vice President May R. Dale occupied the chair, and was addressed as Madame Chairman by Dr. Stevens who was not aware that cutting remarks about the lack of that courtesy were already in type in the News Letter office.

President Wilson outlined the beginning of his program for the coming year, one of the most interesting innovations being a series of "round-table discussions," starting off with a talk on "what new members should know to get the most out of their society." The first such meeting will doubtless deal with the matter of collecting, such as what to collect, how to collect it and what to do with it after collection. (For what not to do with it, the editor might suggest a trip to his garage and backyard where the accumulations from trips far and near are strewn carelessly about.) Mr. Wilson also expressed a hope that some of the associate editors might break down their reserve and contribute occasional items for the News Letter. Why not?

H. B. Schminky called attention to a copy of Arizona Highways containing an article about the "Lost Dutchman Mine" and a map showing the territory in which it is supposed to be. He also had a steel company publication containing an article about African savages making iron from bog-iron ore.....F. W. Libbey exhibited some nice specimens of orpiment realgar in chalcedony. He also had some kunzite crystals of gem quality.....Thos. C. Matthews called attention to an article in

Popular Science on zirconium, and in that connection, a trip to the Bureau of Mines laboratory at Albany was mentioned, as they are producing zirconium there in appreciable quantities.....Dr. J. C. Stevens cast a chill over the meeting by mentioning experiments with liquid helium at temperatures close to zero Centigrade, which, by the way, is colder than any reported temperatures from Medicine Hat..... Chairman May R. Dale, after prolonged tapping on a tumbler for silence, finally made herself heard and started a specimen containing stilbite crystals from the vicinity of Lowell. After adjournment it was suggested that the chairman should be provided with a big gavel, and A. D. Vance promptly voiced the sentiment that she be instructed to refrain from using it "when we're talking"Florence Woodard was present for the first time in many months. Others who have not been mentioned above, but who helped to make the total of fourteen were: Messrs. Baldwin, Elder, Erickson, Kelham, Simon, and Stanley.

O.E.S.

NORTHWEST INDUSTRIAL MINERALS CONFERENCE

The Oregon Section of American Institute of Mining and Metallurgical Engineers is again playing host for the Northwest Industrial Minerals Conference which will be held April 27 and 28. An all-day session at the Congress Hotel and a luncheon, cocktail party, and evening banquet will round out the first day's activities. On Saturday, April 28, there will be a plant tour to the Smithwick Concrete Products Haydite plant, the Wagnermobile materials-handling equipment company, and the Oswego plant of the Oregon Portland Cement Company. Papers on the following subjects will be presented: minerals used in the manufacture of paint, the black sands of the southern Oregon coast, a report on shrinkage studies of pumice blocks, the processing of aggregates for Detroit Dam, and a symposium on the economy of industrial minerals in the Pacific Northwest. Some industrial minerals in the raw and processed state, and some pottery glazed with a perlite glaze will be on display.

Registration starts at 8:30 a.m. with the morning session commencing promptly at 9:00. Registration is \$1.50 and will include a set of papers. Speakers from New Jersey, Illinois, Ohio, Utah, and British Columbia will be present to report on recent developments in the industrial mineral field. Further information concerning the Conference may be obtained from Ralph S. Mason, State Department of Geology and Mineral Industries, 702 Woodlark Building, Portland 5, Oregon.

MEMBERSHIP APPLICATION BLANKS

Included with this issue of the News Letter are two copies of the new application form. Additional copies may be obtained from the Secretary or the Chairman of the Membership Committee. Copies of the previous application form should be destroyed.

APPLICATION FOR MEMBERSHIP.

GEOLOGICAL SOCIETY OF THE OREGON COUNTRY

I (), we() hereby apply for membership in the Society. Date _____ 195_
Individual Adult (), Family Group (), Junior Member, under 21 years, ().

Name: Individual _____
Husband _____ Wife _____
Children (under 18) _____

Address, residence _____ Phone _____

Address, business _____ Phone _____

Occupation _____

Geological Interests: General (), or specify _____

Signature of Applicant _____

Signature of sponsoring Member _____

Remittance \$ _____ for dues is attached.

Action by Membership Committee _____

(see over)

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Signature of Applicant _____

Signature of sponsoring Member _____

Remittance \$ _____ for dues is attached.

Action by Membership Committee _____

(see over)

MEMBERSHIPS

A Member shall be a person at least twenty-one years of age who is interested in and supports the aims and objects of the Society and who has been recommended by the membership committee. A regular membership comprises: (a) a single person, or (b) a husband and wife, with children under 18 years of age. A Junior Member shall be a person under twenty-one years of age, with like qualifications and recommendation. Each membership receives one subscription to the Geological News Letter.

Annual dues are \$3.50 for residents of Multnomah and adjacent counties, \$2.50 for others, and \$1.50 for Junior Members. Remittances should be made payable to the Society. Applicants for membership should submit an application form, and remittance for dues, to the Secretary.

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GEOLOGICAL NEWS LETTER

OFFICIAL PUBLICATION OF THE



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PORTLAND, OREGON

May 1951

GEOLOGICAL NEWS-LETTER

Official Publication of the

Geological Society of the Oregon Country

703 Times Building, Portland 4, Oregon

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GEOLOGICAL SOCIETY OF THE OREGON COUNTRY

Officers of Executive Board, 1951 - 1952

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| | | | | |
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| Assoc. Editors: | Mrs. Leo W. Haven, Mr. F. W. Libbey, Mr. A. D. Vance, Mr. F. L. Davis | | | |
| Bus. Mgr.: | Mr. Raymond L. Baldwin | 4804 S.W. Laurelwood Drive | 1 | CH 1452 |

SOCIETY OBJECTIVES

To provide facilities for members of the Society to study Geology, particularly the geology of the Oregon Country. The establishment and maintenance of a library and museum of geological works, maps, and specimens. The encouragement of geological study among amateurs. The support and promotion of geologic investigation in the Oregon Country. The designation, preservation, and interpretation of important geological features of the Oregon Country. The development of the mental capacities of its members in the study of geology and the promotion of better acquaintance and closer association between those engaged in the above objectives.

SOCIETY ACTIVITIES, 1951 - 1952

EVENING MEETINGS: Formal lectures or informal round table discussions, on geological subjects, on the second and fourth Fridays of each month, at Public Library Hall, S.W. Tenth Avenue and Yamhill Street. 8:00 P.M.

FIELD TRIPS: Usually, one field trip is scheduled for each month.

LUNCHEONS: Informal luncheons, with geologic motif, each Thursday noon, at Chamber of Commerce, 824 S.W. Fifth Avenue. 85¢ per plate.

PUBLICATION: The GEOLOGICAL NEWS LETTER, issued once each month, is the official publication of the Society.

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CALENDAR: MAY 1951

- May 3 Weekly noon luncheon.
Thursday
- May 10 Weekly noon luncheon.
Thursday
- May 11 Regular evening meeting. 8:00 p.m.
Friday Our guest speaker will be Mr. Tom Matthews, Spectroscopist
with the State Department of Geology and Mineral Industries.
Subject: The Magic of Spectroscopic Analysis.
- May 17 Weekly noon luncheon.
Thursday
- May 24 Weekly noon luncheon.
Thursday
- May 25 Regular evening meeting. 8:00 p.m.
Friday Round-table discussions and short subjects.
- May 27 Field trip, for members and their guests, to Tillamook,
Sunday Oregon, to visit the Hobby House of our member,
Miss Ruth E. Coats. Assemble at the Hobby House,
702 E. 1st Street, at 10:00 a.m. Bring your lunches so
we may eat in the patio, weather permitting. After lunch, Mr. Leo F. Simon
will lead the group to an interesting locality at the beach. Following this,
the caravan will disband. Remember that this is the last opportunity for
G.S.O.C. to visit the Hobby House.
- May 31 Weekly noon luncheon.
Thursday

* * * * *

CHANGES OF ADDRESS

Phone

- Mrs. Estella I. Conner, 1832 S.W.Salmon Street, Portland 5
- Miss Ruth C. Arthur, 2210 N.W.Everett Street, " 10,Apt. 401. CA 6231
- Mr. and Mrs. Paul W. Howell, Box 1213, Lowell, Oregon

* * * * *

CORRECTION

Inadvertently, the name of Dr. Edwin T. Hodge was omitted from the list of Directors appearing on the inside front cover. Mr. Stanley was elected Director to fill the unexpired 1950 term of Mr. Wheeler. Therefore the name of Mr. Stanley should not be included. A corrected cover page will appear with the July issue.

G.S.O.C. TRIP - March 25, 1951
COLUMBIA GORGE
Troutdale to Bonneville on new Express Route
Leader: Dr. Edwin T. Hodge

This Easter morning one was free to attend Church services or just relax. Guess your reporter just kept on relaxing for she was ten minutes late arriving at her meeting place with the Simons whose guest she was to be for the trip. Lady Springtime was pouting and hid the sun, and even shed intermittent tears all afternoon, especially showing her displeasure when we left our cozy cars to study some particular point of geological interest, with instruction by our leader, Dr. Edwin T. Hodge.

STOP I - 2.2 mi. East of Troutdale. Contact of Cascan and Troutdale can be seen here. A small flow of lava cooled at right angles to the walls of a tunnel and formed a sunburst pattern, of which a good example may be seen here in the Cascan.

STOP II - 5.2 mi. Looking south we see more Troutdale. The presence of quartzite pebbles was pointed out. Where did they come from? Idaho or British Columbia where there is a great quantity of quartzite. Did they come through the Columbia River Gorge? But the Gorge is later than the Cascan. We find quartzite pebbles 30 miles north and also farther south of this point. Some are wind polished or glacier polished. Ashes and grit are to be found in the Troutdale. This proves that they were laid down by swift streams. The gravels show chemical decay. At this point on the river banks, the andesite is on the very top of the cliffs and lies on the Troutdale formation. Just before reaching this stop, we had passed an exhibit of the torrential beddings characteristic of the Troutdale formation.

STOP III - 5.2 mi. Dr. Hodge directed our gaze up the gorge. We admitted the gorge was a narrow one. This is a factor in his argument that the Columbia River is a superimposed stream rather than an antecedent one. The lavas are fresh and young. One can see where the andesite and basalt contact. The basalt dips from the north to the south. Farther ahead one can see a talus slope. On the north side of the river is Warrenton formation.

STOP IV - 6.1 mi. Here the Troutdale and basalts are found much higher. Here, also, is a Coriba bench cut by the river as it cut down into the gorge. The Coriba bench is parallel with the Coriba structure; a condition that is universally true.

STOP V - 8.8 mi. Looking south, we note that the basalt is moss covered. Some of us were jolted into learning that rivers are really poor cutting agencies. Big rocks are made into little rocks most rapidly by weathering. (Did someone think this was done at penitentiaries?) A big column may eventually tumble down into an unprotected position where it is immediately pounced upon by wind, water, etc., and erodes away.

Coriba is very difficult to dislodge. Try to loosen a brickbat. You can't. Water does not seep through it to weaken it. Above the Coriba are ash, tuff, and pebbles. On the very top is a small flow of andesite. Examine some of the Troutdale. You will find it is usually rusty, for the reason that water has filled it with limonite. It is likely that artesian wells could be found in Troutdale.

1951

STOP VI - 9.2 mi. Between Stop V and Stop VI, our botanist, Leo Simon, drew our attention to the flowering Indian plum. Flanking the highway were needle-like hills; some even looked like elephants - really, with trunks and everthing. These are a phase of scabland erosion due to downcutting by a swift stream into the basalt.

Arriving at Stop VI, we had a slough and a hanging fall to the south. The Cascan can be easily undersapped because of the ashes that lie below it and in it. Hence streams cut down rapidly through it. But when the stream reaches the Coriba such undersapping is not possible and the stream is held up as a hanging fall. The slough is due to a tributary damming itself by its own debris when it enters a larger but slower stream.

Lovely reflections of the trees and hanging fall in the water called for a snapshot though it was not a day that would fit the specifications of a camera fan. Dr. Hodge pointed out that the flatness of each hill was due to erosion by a downcutting stream. At this moment an engine puffed by all alone and left a trail of smoke admiring itself, Narcissus fashion, in the clear surface of the slough.

STOP VII - 11.9 mi. The basalt is at its lowest elevation here. On the north side of the river there has been a grand landslide. The former hills have slid southward and now jut out into the water. The Cascan occurs on the south side and in places fills north-south V-shaped valleys.

STOP VIII - 16.1 mi. - Multnomah Slide. Here a large mass of the talus slid into the river a few years ago blocking both the railroad and highway.

STOP IX - 17.9 mi. - Oneonta Gorge. This new highway does not bring one as closely to the gateway of this gorge as does the old scenic highway. This break in the rocks is a unique one. It is apparently a large joint-plane which has been widened by erosion. At water level one may see petrified logs. Here a forest once grew which was pushed over and buried by the flow just above the river bed.

STOP X - 21 mi. This was not an official stop, but our party took a look at St. Peter's Dome.

STOP XI - 22 mi. Here, looking south, a landslide is obvious. Our leader explained it occurred in March 1950 and Union Pacific's tracks were covered, which caused railroad service to be out for three days.

At this point, about 5:00 p.m., the official trip was ended. All thanked Dr. Hodge for an outing capably led and punctuated every few miles with easy to understand geological instruction and humorous comments of human interest such as those regarding the railroad's landslide experiences, with our leader as their consultant always coming out on the winning end, it seems. The caravan's keeping intact throughout the chilly rains should be compliment enough to Dr. Hodge.

Our party continued beyond Cascade Locks where we finally found a place to turn around and start homeward. At a spot overlooking the town of Bonneville, we couldn't resist picking at the petrified rocks in the road bank. We met the Wilburs who also just couldn't resist gathering a few specimens. We were rewarded by an abundance of black petrified wood, some plain agate, banded agate, some common opal, and some marcasite.

See you next trip, folks.

Mrs. May R. Dale
(Edited by Dr. Edwin T. Hodge)

THE COLLECTING OF SANDS

A sideline or even a specialty for geologically minded persons is the assembling and study of sands. Collectible specimens are everywhere and are easily obtained. Exchange with other collectors provides material from different parts of this country or even from foreign lands.

Oregon has many sands of considerable interest. Along the coast are beach sands and dune sands. Among them are pink garnet sand, zircon sand, olivine sand, black sands containing magnetite and chromite, black basalt sand, and just plain beach sand of several sorts. Some sand from Hills Creek, in Lane County, contains numerous tiny, brilliant beta-quartz crystals. That from Silvies River, near Burns, contains similar crystals, but larger in size. River sands from the Willamette, and its tributaries in the Cascade Mountain Range, are made up chiefly of fragments of volcanic rocks. In addition, that from the Sandy contains tiny pyroxene crystals which, in turn, contain still smaller magnetite crystals. In Central Oregon are sands composed in part of obsidian grains. Columbia River sand as well as dune sand occurring along the river is composed of a mixture of granitic, basaltic, and metamorphic rock grains, together with minerals derived from them. Many other kinds of natural sand occur in the state. Concrete used in the construction of Detroit Dam on the North Fork of the Santiam is made with manufactured sand prepared by crushing a quartz diorite rock at the site. Sand prepared in like manner from Eagle Rock diabase is used in concrete of the Lookout Point Dam on the Middle Fork of the Willamette at Lowell, Oregon.

Among out-of-state sands are, to mention just a very few, olivine sand from Green Sand Beach, Island of Hawaii; "shell" sand containing abundant tiny snail shells, (*Paludestrina*), from Colorado Desert, California; coral sand from Florida; gypsum sand from New Mexico; "singing" sand from Fallon, Nevada, and other localities; volcanic (basaltic) "sand" from Paricutin Volcano, Mexico; white (nearly pure) zircon sand from Placer County, California; desert sands of many colors from Utah and Arizona; monazite sand (radioactive) from Bahia, Brazil; thorianite "sand" from Ceylon; gold-bearing sand from the Snake River; and St. Peter sand (composed of tiny quartz spheres) from Illinois and adjacent states.

For more information on sands, read, as a start, Chapter 17 in Manual of Sedimentary Petrography by Krumbein and Pettyjohn. Read also, Bulletin No. 30 of Oregon Department of Geology and Mineral Industries, by W. H. Twenhofel, which describes Oregon coast sands. This bulletin is now (unfortunately) out of print. Rocks and Minerals Magazine, Peekskill, N.Y., is currently publishing a section containing special information for sand collectors.

To get started in sand collecting, the following steps are suggested. Decide how you wish to house and display your specimens. One-ounce glass bottles with screw caps may be purchased for about 7 cents each. They are ideal for the purpose. Collect a surplus quantity of each sand you encounter on your field trips, and exchange specimens with sand collectors in other parts of the world. Names and addresses of sand collectors are available on request. Empty coffee tins work well as collecting containers. Be sure to put a label in each can as you fill it. One fluid ounce (two cubic inches) is becoming the proper amount of sample to send in swapping. This allows sufficient for a display specimen and a little for testing and examination. Remember to send, for each specimen, its exact locality, type of sand, and something of its geologic story. You should then receive similar data covering sands you receive in return.

Sand for collections should be clean and sound, not dusty or dirty. Gravel larger than one-fourth inch should be removed. Transportation charges should be paid by the shipper. If specimens are placed in small envelopes, each wrapped in newspaper, and packed tightly in a small carton, the shipping charge is not high.

The full measure of pleasure and satisfaction comes to the sand collector only when each specimen is studied and the secrets of its source, life history, and composition are revealed. It is planned to tell, in a subsequent article, something of the methods used in studying and interpreting sands.

Ford E Wilson

NEW GEOLOGIC MAP OF EUGENE AREA

A new map in color titled "Geology of the southern and southwestern border areas of the Willamette Valley, Oregon," by H. E. Vokes, Parke D. Snavely, Jr., and Donald A. Myers, has been published as U.S. Geological Survey Map 110 of the Oil and Gas Investigations series. This map covers four quadrangles in the Eugene area: Elmira, Crow, Eugene, and Cottage Grove. The map and a report are published on a 41- by 54-inch sheet. The report describes the geologic formations and structures, lists the fossil plants and animals, discusses the possibility of oil and gas sources, and includes a bibliography.

Copies may be obtained for 60 cents each from the Distribution Section, Geological Survey, Denver Federal Center, Denver, Colorado.

APPOINTMENTS FOR 1951

The following appointments have been made by the president and approved by the executive board:

Editorial Staff:

- Editor Mr. Orrin E. Stanley
- Asst. Editor Miss Margaret Steere
- Assoc. Editors Mrs. Leo W. Haven
Mr. F. W. Libbey
Mr. A. D. Vance
Mr. F. L. Davis
- Business Manager Mr. Raymond L. Baldwin

Committee Chairmen:

- Membership . . Mr. Leonard M. Buoy
- Publicity . . Mr. H. Bruce Schminky
- Historian . . Miss Ada Henley
- Librarian . . Miss Mary Margaret Hughes
- Public Relations Mr. Clarence D. Phillips
- Museum Dr. J. C. Stevens
- Auditor Mr. Leslie W Bartow
- Luncheon Mr. Leo F. Simon
- Communications . Mrs. Leo F. Simon

Other appointments will be announced later.

ANNUAL REPORT OF THE TREASURER FOR YEAR 1950 - 1951

FISCAL YEAR 3/1/50 to 2/28/51.

February 28, 1951

| | | |
|---------------|-------------------------|-----------|
| March 1, 1950 | Balance on hand in bank | \$ 892.00 |
|---------------|-------------------------|-----------|

| | | |
|---------------|-------------------------|-------------------------|
| <u>INCOME</u> | Memberships 1950 - 1951 | \$356.00 |
| | " 1951 - 1952 | <u>204.00</u> \$ 560.00 |

Detail as follows:1950 - 1951

| | | |
|-------------|-----------|-----------------|
| 81 renewals | at \$3.50 | \$283.50 |
| 10 new | at 3.50 | 35.00 |
| 5 renewals | at 2.50 | 12.50 |
| 1 new | at 2.50 | 2.50 |
| 6 new | at 2.00 | 12.00 |
| 2 renewals | at 1.50 | 3.00 |
| 5 new | at 1.50 | 7.50 |
| <u>110</u> | | <u>\$356.00</u> |

1951 - 1952 prepaid

| | | |
|-------------|-----------|-----------------|
| 49 renewals | at \$3.50 | \$171.50 |
| 3 new | at 3.50 | 10.50 |
| 7 renewals | at 2.50 | 17.50 |
| 1 new | at 1.50 | 1.50 |
| 2 renewals | at 1.50 | 3.00 |
| <u>62</u> | | <u>\$204.00</u> |

| | |
|---|------------------|
| News Letter subscriptions | \$ 2.00 |
| 1950 Banquet tickets 152 at \$1.75 each | \$266.00 |
| 1951 " " 51 at 2.00 " | 102.00 |
| Stickers and name badges sold | 6.00 |
| Membership credit A/C refund error | 1.00 |
| | <u>\$ 377.00</u> |
| | <u>\$1829.00</u> |

| | | |
|-----------------|---------------------------------|------------------|
| <u>EXPENSES</u> | Refund A/C dues overpayment | \$ 1.00 |
| | News Letter | 196.45 |
| | 1950 Banquet expense | 290.56 |
| | Lecture Expense | 57.00 |
| | Stationery - Printing - Postage | 91.33 |
| | Miscellaneous | 47.47 |
| | | <u>\$ 683.81</u> |
| | Balance on hand in bank 2/28/51 | <u>\$1145.19</u> |

RECONCILIATION WITH CHECKBOOK

| | |
|-------------------------------------|------------------|
| March 1st, 1950, checkbook balance | \$ 892.00 |
| Deposits 3/1/50 to 2/28/51 | 937.00 |
| | <u>\$1929.00</u> |
| Less checks drawn 3/1/50 to 2/28/51 | 683.81 |
| | <u>\$1145.19</u> |

Respectfully submitted
GEOLOGICAL SOCIETY OF THE OREGON COUNTRY

/s/ By N. B. Stone
Treasurer

SALUTATIONS*

By
Edwin T. Hodge

As I stand to address this very distinguished audience I feel embarrassed; even more embarrassed than at the time I told a very nice girl her stockings were wrinkled, only to learn - shortly thereafter - that she had no stockings on.

Evenings are the times when people do the strangest things to keep from going to bed! Such as listening to an out-going president give alibis for his past short-comings.

"What is so sad as parting?"; except as between you and me. You must enjoy our parting for this is the second time you have made it necessary.

I have been president of this Society so often that I think I ought to write a book on the subject. For me time has become that stuff that exists between my presidencies.

First the sense of responsibility seizes the new president. The meetings, the field trips, the picnic, the noon luncheons, the bulletin, the banquet; all keep him so nervous that when he is calm he feels unhappy and fidgety.

My presidency has been like the National Presidency - I have run the affairs of the Society like nobody's business.

The Society has had a psychic sense in choosing me for its president - each time it has done so I have brought about a national emergency and a threat of war.

The Society expects its president to be a master of thaumaturgy - a worker of miracles. Lecturers must be obtained who are the equal of those that are paid fat fees; and all field trips must be planned to come only on sunny days. The last, thank goodness, will soon be possible. Certain experts now can control the weather so well that we will soon read in our bulletin, "Rain has been postponed for a Geological Society field trip."

It has been said, "Whosoever looketh upon a woman - gets a bent fender," so too, whosoever looks upon the presidency of this Society will be able to say, "Now that my term is over I feel a great deal more like I do now than when I first became president."

No president of any organization has been more fortunate than I. Happy, perfect helpers carried me easily over all dangers and problems. They were in part the following: Mr. Leo Simon, chairman of luncheons and general factotum; Mr. Raymond L. Baldwin, business manager; Mr. Ford E. Wilson, programs; Mrs. Leslie W. Bartow, the arrangement and management of this marvelous banquet; Mrs. Leo F. Simon, communications; Mrs. Leo W. Haven, News Letter Editor; Miss Margaret L. Steere, assistant editor; Mr. Leo W. Haven, badges and acquaintanceships; Mr. Rudolph Erickson, field trips; Mrs. Bruce Schminky, memberships; Mrs. May R. Dale, social; Miss Ada Henley, historian; Miss Mary Margaret Hughes, librarian; Mr. Bruce Schminky, publicity; Mr. Leslie W. Bartow, auditor; Mr. Louis E. Oberson, liaison with high schools; Mr. A. W. Hancock, exhibits; Mr. A. D. Vance, quarters; Mr. Orrin Stanley, slides for meetings; Miss Glenna M. Teeters, picnic; Dr. Claude Adams, nominating committee. And there were many others.

*Speech of retiring president, 16th Annual Banquet, April 20, 1951.

Special mention must be made of the long and valuable service of Mr. Fay Libbey, outgoing director. I wish he would now rise so that we may honor him.

All of these splendid workers are the ones who have made us love Oregon as though it were our native land; to be blithe, gay voyagers over the pleasant lands of Oregon; to love its snow-veined mountains; to love its waters whose ripples always seem to float to us on the shore; the stars; a western ocean where the moon spreads silver and the sun sets gold for all of us to gather; where the days are days of fair dawns, and thrilling days; and where even the storm-clouds thunder and call across our skies like a pack of eager hunting dogs.

What greater satisfaction can one have than to be president of a society where the helpers make life so rich and full of joy.

Now I have another pleasant duty to perform. Mr. Ford Wilson, you lucky man to be honored so richly by the presidency of this splendid Society, will you please arise-----(Mr. Wilson arose amid applause and was presented with the gavel and the Society's copy of Dr. Condon's book, "The Two Islands," which is in the custody of the president during his term of office.)

In closing may I quote -

"My beloved spake, and said unto me, 'Rise up, my love, my fair one, and come away. For lo, the winter is past, the rain is over and gone; The flowers appear on the earth; the time of the singing of birds is come, and the voice of the turtle is heard in out land; the fig tree putteth forth her green figs, and the vines with the tender grape give a good smell. Arise my love, my fair one, and come away.'"

* * * * *

CONTEMPLATIONS*

By

Ford E Wilson

Mr. Toastmaster, Honored Guests, Members of the Geological Society of the Oregon Country:

A little more than a year ago, on our way home from the Annual Banquet, my wife and I commented that we had experienced our one brief moment of glory, because of my election as Vice-President. Tonight finds us again in the spotlight because you have given me the great honor and privilege of leading this Society for the year 1951.

Your new administration expects to follow a middle-of-the-road policy, based on a businesslike conduct of the Society affairs. A special emphasis will be placed on member participation in our programs.

The administration has five fields of activity - namely: evening meetings, field trips, noon luncheons, publication of the News Letter, and purely administrative matters. In accordance with wishes expressed by many members, a flexible policy for evening meetings has been adopted. This will bring to us noteworthy outside speakers, as well as afford all members an opportunity to take an active part in the meetings. The field trips and noon luncheons will continue pretty much as in past years.

*Speech of new president, 16th Annual Banquet, April 20, 1951.

In our publication, there will be an equitable distribution of space for each of the various activities, as well as inclusion of articles by members and other writers.

In the field of administration, we are preparing a manual for officers and chairmen so that their duties will be clearly defined. The mechanism of enrolling new members is being clarified. We wish to compile the amendments to the By-laws for use by those concerned. An attempt may be made to lure back into the fold, those former members who have permitted their membership to lapse.

On the occasion of the next Annual Banquet, when I will again stand before you, it is hoped that I can report that the new administration has been successful in carrying out in full measure the objectives of the Society.

THE SEARCH FOR ORE

Dr. H. E. Culver of Washington State College, banquet speaker, chose as the subject of his address "The Search for Ore." He discussed first the role of mineral resources in the world's political and economic affairs. Contrary to the opinion of many persons, greatly increased production during war years has not actually depleted, to a serious extent, our potential resources. Seeming shortages are more often caused by economic factors than by actual lack of ores. The key to future production lies in discoveries of new mineral bodies and their economical utilization. The old prospectors, usually operating slowly and alone, have for generations searched the earth's surface for minerals. It seems quite unlikely that there are many undiscovered important ore deposits cropping out. This is the key to the present methods of search. We have had to learn to look beneath the surface. Methods vary with the material sought and the knowledge of the searcher. Ore hunting is being directed along three fairly distinct lines; these are first, extension of known deposits, second, attempts to find new deposits in known districts, and third, discovery of new mineral districts.

It would seem that, knowing the details of a known deposit, little difficulty would be had in finding extensions of the ore body. Difficulties arise from faulty interpretations, lack of vital data, and the fact that mineralizing solutions reach limits in their spread through rock formations. In the search for new deposits in known districts, difficulties are of a different sort; conditions which produce ore bodies may not have occurred in precisely the same way in nearby areas.

A new approach to the search methods is in studying the origin and activities of ore-bearing solutions; their effect on rocks, masses, which may be alteration and not mineralization, give valuable clues to underground deposits; analyses of soils which overlie and conceal subsurface ore bodies may yield information about the ore.

It has been found that the behavior of plants, in their acquisition of metallic substances, may furnish information about ore bodies. This new technique is termed geo-bio-chemical analysis.

Geophysical exploration methods are also being used; one is the air-borne magnetometer, carried by an airplane. Some surveys are favorable, some give negative results, some fail to correlate with known facts.

In the third category, the search for new districts, most of the foregoing methods of investigation are available. But new techniques are required to cope successfully with the many problems involved. It is necessary that the geologist, the engineer, the physicist, the chemist, the biologist, and the mathematician get together as a team to solve them.

Ford E Wilson

GEOLOGY OF THE JOHN DAY COUNTRY

For the evening lecture on March 23, an unusually large group of members and guests assembled to hear Dr. W. D. Wilkinson, of Oregon State College, tell about the geology of the John Day Country. He aptly described the conditions there as a jig-saw puzzle from which Mother Nature had thrown away many of the parts. The region chiefly covered was Picture Gorge and adjacent localities. Starting at the lowermost, or oldest, rocks he described the strata, one by one, as they occur. He mentioned type localities and their distinguishing characteristics. His series of Kodachrome slides delighted the audience, not alone for their geologic portrayals, but also their pictorial beauty. The discussion of welded tuffs, lying immediately below the basalt cap rock, gives further proof of the widespread occurrence of this material in Oregon.

F. E. W.

AUDITOR'S REPORT

On March 27, 1951, I audited the books of the Geological Society of the Oregon Country for the fiscal year, March 1, 1950, to April 28, 1951, and found them correct and in good order, and agreed with the annual report of our Treasurer, N. B. Stone.

Yours very truly,
/s/ Leslie W Bartow
Auditing Committee

REPORT OF PUBLICITY COMMITTEE

I hereby report that during the past year The Oregonian gave us 34½ inches of published notices and The Oregon Journal gave us 26½ inches.

Respectfully,
/s/ H. B. Schminky
Publicity Chairman

LUNCHEON NOTES, April 26, 1951

May R. Dale presided at the luncheon of April 26th, ably assisted by Pres. Ford E Wilson on her right, and Director Leo F. Simon on her left....Pres. Wilson outlined his program for the coming year. He said it will include lectures on collecting and arranging specimens so our backyards will bear less resemblance to rock piles, and we will know more about the geology of Oregon....F. W. Libbey exhibited a beautiful specimen of building stone, resembling granite, from Sweden....O. E. Stanley had a small specimen which the Oregon State Department of Geology and Mineral Industries had identified as "orbicular chalcedony pisolites (round parts) found in cherts." This was found in the Ellensburg area by Mr. Stanley's brother....T. C. Matthews called attention to an article about an oil pipeline in Arabia; more than 1000 miles long. The difficulty of laying this pipeline in the desert country was described.... Also present were Ada Henley, R. L. Baldwin, Rudolph Erickson, J. C. Stevens, H. B. Schminky, and A. D. Vance.

O.E.S.

PROGRAM
SIXTEENTH ANNUAL BANQUET
GEOLOGICAL SOCIETY OF THE OREGON COUNTRY

MENU

DR. J. C. STEVENS
Master of Ceremonies

HOWD'Y SONG EVERYBODY

SALUTATIONS PRESIDENT EDWIN T. HODGE

CONTEMPLATIONS PRESIDENT ELECT FORD E WILSON

SLAB OF RED JASPER

CRUSHED QUARTZITE ($\frac{1}{4}$ "-)

COELITIC JADE IN MATRIX VERDE WITH ORPIMENT DISKS

TRAVERTINE WITH CINNABAR DISKS

SIGILLARIA LEAVES WITH OLIVINE CRYSTALS

MARBLE SLAB STUDDED WITH GARNET CRYSTALS

MOLTEN LAVA

"THE SEARCH FOR ORE"

By

DR. HAROLD E. CULVER
Pullman, Washington

Intermission

SONGS PLAIN MUD EVERYBODY

DE RE GEOLOGICA

THE AUTHORITATIVE SPECIALIST

LAVA IF-AND-BUT-OLGY

GOOD NIGHT SONG EVERYBODY

BANQUET COMMITTEE CHAIRMEN

| | |
|----------------------|--------------------------|
| Accompanist | Mrs. A. W. Hancock |
| Decorations | Mrs. L. E. Kurtichanof |
| Entertainment | Mrs. May R. Dale |
| Flowers | Mrs. Ben Smith |
| Gifts | Mr. F. W. Libbey |
| Hospitality | Mr. and Mrs. F. L. Davis |
| Interpreter (menu) | Mr. Albert D. Vance |
| Photography | Mr. Orrin E. Stanley |
| Program Cover Design | Mr. H. F. Travis |
| Publicity | Mr. H. Bruce Schminky |
| Speaker | Dr. Edwin T. Hodge |
| Tickets | Mr. and Mrs. Leo Simon |
| General Chairman | Mrs. Leslie W Bartow |

OFFICERS

| <u>1950</u> | <u>1951</u> |
|---------------------|---------------------|
| | President |
| Dr. Edwin T. Hodge | Mr. Ford E Wilson |
| | Vice president |
| Mr. Ford E Wilson | Mrs. May R. Dale |
| | Secretary |
| Miss Ruby M. Zimmer | Miss Ruby M. Zimmer |
| | Treasurer |
| Mr. Norris B. Stone | Mr. Norris B. Stone |

DIRECTORS

| | |
|----------------------|--------------------------|
| Mr. F. W. Libbey | Mr. E. Cleveland Johnson |
| Mr. Orrin E. Stanley | Mr. Louis E. Oberson |
| Mr. Louis E. Oberson | Mrs. Leslie W Bartow |
| Mrs. Leslie W Bartow | Mr. Leo Simon |
| Mr. Leo Simon | Dr. Edwin T. Hodge |

LET'S SING

HOW'DY
(School Days)

We're sweet sixteen, this G soc team
By Hodge we have been led
In chalk talks and lunches and lectures rare
In picnics and field trips and banquet fare.
Let's greet all our pals around us here
Toast Dr. Culver, guests, all dear
Shake neighbor's hand, left and right of your seat
Then smile all the while then - - - - -
let's eat!

25th

~~SIXTEENTH~~ ANNIVERSARY SONG
(I've Been Working on the Railroad)

To night we do some reminiscing
Around our banquet fare
~~With sixteen~~ years of happy fellowship
We can not find elsewhere
We've hiked up to the highest mountains
And fallen in the creek
But lessons learned by peppy G socs
We always can repeat.

I've been "picking" with the G socs
Near and far away
I've been "picking" with the G socs
And tote the rocks all day
Plan to be so scientific
And label all the loot
But finally build a pretty rockery
And have some rock to boot.

Twenty

tcb

PLAIN MUD
(The Man on the Flying Trapeze)

I

Come join us good fellows, a trip has been planned
We'll follow the leader and his zany band
The object or purpose we want you to know
Is a journey thru time to the long long ago.
Bring baskets of foodstuffs and liquids for thirst
The study's important, the stomach comes first
Bring chisels and hammers, a shovel won't hurt
We're looking for anything loose in the dirt.

Cho: We'll load the huge boulders with tenderest care
'Til passengers with us ride high in the air
We'll clutter the basements, we'll store them
in trays
And leave them forgotten the rest of our days.

II

If answers to problems you're anxious to know
Just ask the dear teacher, with daschund in tow
Strange stories he'll tell you, not cracking a smile
The faithful gas buggy chugs mile after mile
He tells about faceted pebbles galore
And over the mountain he says there are more
There're oysters in nodules and pectens we're told
And petrified horses a million years old.

Chorus

A. W. Hancock

GOOD NIGHT
(Pop Goes the Weasel)

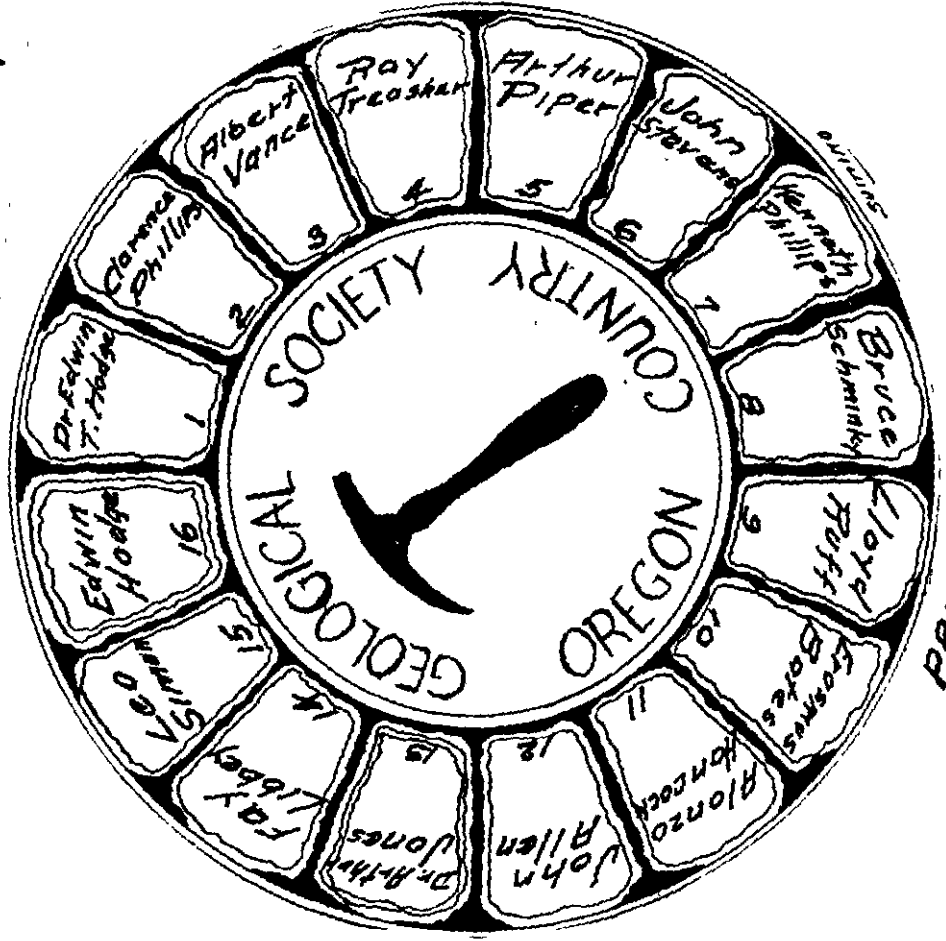
To night we've had a jolly good time
And learned a lot together
Resolved geologists are fine
Regardless of the weather
So now we bid good night to all
And plan some future meetings
That's the way we profit most
Along with pleasant greetings.

In unison say "Good Night"

tcb

16th ANNUAL

BANQUET



PRESIDENTS

MARCH 9th 1951

GEOLOGICAL NEWS LETTER

OFFICIAL PUBLICATION OF THE



VOL. 17 NO. 6

PORTLAND, OREGON

JUNE 1951

GEOLOGICAL NEWS-LETTER

Official Publication of the

Geological Society of the Oregon Country

703 Times Building, Portland 4, Oregon

POSTMASTER: Return Postage Guaranteed

GEOLOGICAL SOCIETY OF THE OREGON COUNTRY

Officers of Executive Board, 1951 - 1952

| | | | <u>Zone</u> | <u>Phone</u> |
|------------|----------------------------------|----------------------------------|-------------|--------------|
| President: | Mr. Ford E Wilson | 11844 S.E. Pine Street | 16 | |
| Vice-Pres: | Mrs. May R. Dale | 1202 S.W. Cardinell Drive | 1 | CA 2123 |
| Secretary: | Miss Ruby M. Zimmer | 805 S.E. 60th Avenue | 15 | LA 8319 |
| Treasurer: | Mr. Norris B. Stone | Rt. 1, Box 179-A, Oswego, Oregon | | Oswego 6531 |
| Directors: | Mrs. Leslie W Bartow, (1952) | Mr. Leo F. Simon, (1952) | | |
| | Mr. Orrin E. Stanley, (1953) | Mr. Louis E. Oberson, (1953) | | |
| | Mr. E. Cleveland Johnson, (1954) | | | |

Staff of Geological News Letter

| | | | | |
|-----------------|--|----------------------------|----|---------|
| Editor: | Mr. Orrin E. Stanley | 2601 S.E. 49th Avenue | 6 | VE 1250 |
| Asst. Editor: | Miss Margaret L. Steere | 6203 S.E. Scott Drive | 16 | BR 2276 |
| Assoc. Editors: | Mrs. Leo W. Haven, Mr. F. W. Libbey, Mr. A. D. Vance, Mr. F. L. Davis | | | |
| Bus. Mgr.: | Mr. Raymond L. Baldwin | 4804 S.W. Laurelwood Drive | 1 | CH 1452 |

SOCIETY OBJECTIVES

To provide facilities for members of the Society to study Geology, particularly the geology of the Oregon Country. The establishment and maintenance of a library and museum of geological works, maps, and specimens. The encouragement of geological study among amateurs. The support and promotion of geologic investigation in the Oregon Country. The designation, preservation, and interpretation of important geological features of the Oregon Country. The development of the mental capacities of its members in the study of geology and the promotion of better acquaintance and closer association between those engaged in the above objectives.

SOCIETY ACTIVITIES, 1951 - 1952

EVENING MEETINGS: Formal lectures or informal round table discussions, on geological subjects, on the second and fourth Fridays of each month, at Public Library Hall, S.W. Tenth Avenue and Yamhill Street. 8:00 P.M.

FIELD TRIPS: Usually, one field trip is scheduled for each month.

LUNCHEONS: Informal luncheons, with geologic motif, each Thursday noon, at Chamber of Commerce, 824 S.W. Fifth Avenue. 85¢ per plate.

PUBLICATION: The GEOLOGICAL NEWS LETTER, issued once each month, is the official publication of the Society.

MEMBERSHIPS

A Member shall be a person at least twenty-one years of age who is interested in and supports the aims and objects of the Society and who has been recommended by the membership committee. A regular membership comprises: (a) a single person, or (b) a husband and wife, with children under 18 years of age. A Junior Member shall be a person under twenty-one years of age, with like qualifications and recommendation. Each membership receives one subscription to the Geological News Letter.

Annual dues are \$3.50 for residents of Multnomah and adjacent counties, \$2.50 for others, and \$1.50 for Junior Members. Remittances should be made payable to the Society. Applicants for membership should submit an application form, and remittance for dues, to the Secretary.

CALENDAR, JUNE 1951

June 7 June 14 June 21 June 28 Weekly noon luncheons.
Thursday Thursday Thursday Thursday

June 8 Regular evening meeting. Library Hall, 8:00 p.m.
Friday Our guest speaker will be Mr. Stanley Sporseen of the Corps of Engineers, U.S. Army, and a former member of G.S.O.C. He will tell of his experiences during a year, just completed, doing engineering work in Venezuela, South America. Meeting open to the public.

June 22 Regular evening meeting. Library Hall, 8:00 p.m.
Friday Under the joint sponsorship of the Portland Astronomical Society and G.S.O.C. The guest speaker will be Mr. Harry G. Johnson, Director of the Brown Foundation, Walla Walla, Washington.
Lecture subject: "Meteorites." A fine exhibit of meteorites is scheduled to be on display. Meeting open to the public.

June 23 & 24 Annual field trip, for G.S.O.C. members and their guests, to Bend, Oregon. Trip leader will be our member, Mr. Phil F. Brogan. Briefly, the schedule is:

Saturday A.M. Drive to Bend and secure quarters. It is hoped that the "gang" will make reservations (with Mr. Brogan or G.S.O.C. President), immediately so that we can assure staying at the South City Limits Motel (same as last year).

Saturday P.M. Short trip from Bend (likely to Lava Cast Forest) and return to Bend for evening get-to-gether.

Sunday The trip scheduled is over the new Ochoco Highway, via Prineville, to Mitchell. The caravan will disband in mid-afternoon.

* * * * *

BUMPER CARDS

Automobile bumper cards are available. All cars on field trips are expected to display these cards fore and aft.

* * * * *

NEWS OF MEMBERS

The Oregon Journal of April 2nd carried the name of Martha Piper on the honor roll for the University of Oregon as having "A" grades. Martha Piper is the daughter of one of our past-presidents, Arthur M. Piper. The G.S.O.C. extends congratulations.

* * * * *

Mrs. Mildred James is on an extended trip by Greyhound bus to eastern points.

* * * * *

Mr. Schminsky calls attention to the opportunity to buy a 10-power hand lens for \$3.95 at Gerson's Stamp Shop, 373 S.W. Morrison Street.

FIELD TRIP TO BUREAU OF MINES LABORATORY AT ALBANY

An enthusiastic group made up of about 16 GSOC members and an equal number of guests from the Oregon Agate and Mineral Society and the Salem Geological Society, assembled at the Bureau of Mines Laboratory in Albany, Oregon, at 9:45 a.m. on April 28, 1951. A single shower during the day failed to dampen the enthusiasm of the party.

Mr. A. J. Kaufman, Jr., in charge of the Petrographic Section was guide for the party. First came an introductory talk by Mr. Kaufman who explained the general function of the laboratory and some of the processes that would be seen. One important activity of the laboratory is production of zirconium metal. Copies of the process flow sheet were provided. These sheets depicted the production stages, from raw material to finished ingot, by means of sketches of the various pieces of equipment manned by tiny gremlins. The group then visited the various buildings where the processes were being carried out. Here Mr. Kaufman was assisted by Mr. Don. Dilling in explaining the operations and in answering questions. Methods of beneficiation (concentration) of low-grade ores were then explained.

The last building visited contains the general offices, library, and scientific laboratories. An exhibit showing small pieces of many very scarce, or unusual metallic elements was particularly enjoyed. Next, the group viewed and received explanations of several very intricate laboratory instruments which are used in the study and analysis of the many kinds of minerals and metals coming to, or being developed within, the laboratory.

The tour was planned to last until noon, but 1:00 o'clock found Mr. Kaufman and the group still going strong. The group finally left to seek lunch. Genial Mr. Reynolds W. Ormart, GSOC member from Salem, then led the group to Finzer, near the Willamette River, south of Salem, for a bit of fossil hunting. A few more miles and all hands arrived at the home of Mr. and Mrs. Ted Gordon, who also are GSOC members. Those who had not previously visited there were amazed at the wealth of minerals displayed while those more fortunate ones who had been there before enjoyed it all over again. Mrs. Gordon then served a buffet lunch which made a much enjoyed and fitting end for the day.

Some 200 GSOC members who were unable to make the trip certainly missed a very worth-while and enjoyable day.

To Mr. Stephen M. Shelton, Director of the Laboratory, who kindly gave permission for the tour; to Mr. Kaufman and Mr. Dilling who guided the group; to Mr. Reynolds; and to Mrs. Gordon go the sincere thanks of this Society.

Ford E Wilson

EDITORIAL POLICY

Statements made, or opinions expressed, by authors of contributed papers are not necessarily those of the Geological Society of the Oregon Country.

In general, no modification or extensive editing will be done on such papers. It is intended that the original mode of expression be preserved. However, minor editing or modification in subject title may be made to maintain conformity with editorial standards of the Society.

FOLLOWING THE QUARTZITE SPOOR NEAR PORTLAND

Most scientific work requires a good bit of sleuthing, and geology is no exception. Recall also that amateur sleuths often do as well as professionals. To illustrate, in our own back yard, this geologic sleuthing, let's take a few jaunts to the countryside east of Portland. There, in an area extending from Estacada and Oregon City on the south, eastward to Cape Horn on the Columbia River, and thence northwest to Battleground and Woodland, Washington, is scattered the spoor of a formation.

Anyone with a keen eye and the ability to pick out the unusual from the commonplace will surely pick up the trail when walking atop Boring Butte, (Elev. 968). There, in the open field or meadow, he (or she) will see an occasional well-rounded cobble of quartzite, usually of red color. Four miles to the southeast, on Hill 900, are numerous quartzite cobbles up to 4 inches in diameter. Similar quartzite cobbles are scattered over the uplands southwest of the town of Sandy, toward Estacada, and occasional small quartzite cobbles can be found on the highlands back of Oregon City. Take a big jump north now to Camas Washington, and a hill called Brunner Hill (Elev. 700) four miles to the north. Here, along the road and in the fields, are numerous quartzite cobbles of large size. Other hills to the east and perhaps even Bear Prairie (Elev. 1100) will yield the same cobbles. But we're not through yet. Let's take the country road north from Brunner Hill to Livingston Mountain. There, in old abandoned roads and close-cropped meadows, you will find occasional small red quartzite cobbles up to 1300 and possibly 1400 feet in elevation. You may be at the upper limit now for points this far west. No one knows for sure.

Down to the northwest on Hockinson terrace, you will find a capping, more than a foot thick, of almost pure, red quartzite cobbles, and farther north are other examples.

You now have a few clues, but like the good sleuth that you are do not jump to conclusions. Begin to analyze. Rounded cobbles are river or beach deposits. These particular cobbles are almost all quartzites of red and yellow colors. Such quartzite cobbles are carried by the Columbia River and come from the mountains of Idaho, Montana, Utah, and Nevada. Why couldn't these cobbles be evidence of the presence of Spokane Flood deposits? So far as you know the Spokane Flood never reached most of these heights, but there is more clinching evidence. Here are only quartzite cobbles. Where are the basalts, the andesites, the granites, the gneisses and the schists that the Columbia normally carries? They are gone, mouldered to clay and carried away by persistent and incessant erosion, with only their soft ghosts occasionally visible below the soil at favored localities in deep road cuts. Only quartzite remains. It is extremely durable, an excellent spoor.

Only one formation, the Troutdale, laid down by the Columbia River and carrying quartzite cobbles has existed long enough to have been so weathered and eroded. Once you've come to that conclusion, others naturally follow: (1) that the Troutdale was once much thicker and a bit more widespread than at present, (2) that much of it has been carried away, (3) that quartzite is very resistant to decomposition, (4) that most volcanic rocks and even plutonic rocks and some metamorphic rocks are, relative to quartzite, not very resistant to decomposition, and (5) that geology is very interesting, especially if there is a bit of the sleuth about you.

Paul W. Howell

THE 16TH ANNUAL BANQUET

The postponement of the banquet from March 9th to April 20th on account of the heavy snow in March, provided fair weather for the one hundred and twenty-five members and friends of G.S.O.C. to get to the Mt. Scott Community House at S.E. Harold Street and S.E. 72nd Avenue. Some delay in starting the program was occasioned by a short-tempered bus driver who objected to having cars parked close to the street intersection, and a dozen men, already seated at the table, dashed out to move their cars but found that it was necessary to move only the one nearest the corner.

Dr. J. C. Stevens, master of ceremonies, after driving past the meeting place and returning a little late, kept the program moving smoothly through the evening.

The elaborate disguising by Interpreter A. D. Vance of items on the menu (geological names being used for the microscopic specimens of various foods) was clever work, and gave some dignity to the meager meal.

To the general chairman, Mrs. Leslie W Bartow, should go a unanimous vote of thanks for inspiring her committees in their several duties, and in checking up on the volunteer ticket collectors at the separate tables. One of them, a man of unimpeachable honesty, solemnly declared that he had collected from every diner at his table; the chairman's count showed him to be short two tickets. He sheepishly dug them out of a pocket when the matter was brought to his attention.

Dr. Harold E. Culver presented the matter of "searching for ore" in a manner that was scholarly without being "high-brow." President Ford E Wilson boiled down the lecture for publication in the May issue of the News Letter.

We were grieved to note that somewhere in the years between Dr. Hodge's time as the Society's first president and the sixteenth, he had lost his doctor's degree, but felt a degree of relief on being told that Mr. H. F. Travis, who designed the program cover, felt that in fifteen years we should be well enough acquainted with the doctor to simply call him "Edwin."

The committees on decorations and flowers headed by Mrs. L.E. Kurtichanof and Mrs. Ben F. Smith, Jr., are to be commended on the results of their work. Each of the place cards was decorated with a cube of sugar bearing the figures "16" signifying that the Society had attained the age of "Sweet Sixteen."

The work of the publicity chairman, H. B. Schminky, was more than doubled by the interference of the weather-man causing postponement. By combining publicity with the salesmanship of Mr. and Mrs. Leo F. Simon in charge of ticket sales, excellent results were secured.

We have been informed by the recipients of presents that the committee on gifts, headed by F. W. Libbey, chose exactly the things that were most desired.

Mr. and Mrs. F. L. Davis, heading the hospitality committee, saw that comparative strangers at the beginning of the meeting felt quite at ease in the group before returning to their homes.

Photographer Orrin E. Stanley was a general nuisance during the evening.

Mrs. May R. Dale, as chairman, and her entertainment committee "whipped up" a clever playlet and Mrs. Dale coached the amateur actors and scene shifters through trying rehearsals to an amusing performance.

The cast was as follows:

- "Rupert Plushbottom" Correspondence School Geologist - John O'Connor
- "Calamity Sue" Rancher's daughter - Mary Davenport
- "Sheriff" - - - - - - A. D. Vance
- "Mr. Gotrocks" Wealthy Tourist - A. W. Hancock
- "Mrs. Anticline" - - - - - Mrs. Leo F. Simon
- "Thunderegg" Active small boy - Leo F. Simon
- Sound effect and stage management - R. F. Wilbur and E. Bushby
- "Scenery" - Orrin E. Stanley

Songs written by Mrs. Leslie W Bartow and sung by the (should we say roistering revelers?) interspersed in the program.

After singing the "Good Night" song (tune of "Pop Goes the Weasel") the group dispersed and the members hurried to their homes or various restaurants "for something to eat."

O. E. Stanley

LUNCHEON NOTES - May 3, 1951

With Leo Simon in the chair and an even dozen members seated around the tables the weekly luncheon on May 3d was an enjoyable affair This was the first Geological Society luncheon meeting for Mr. and Mrs. T. Gail DeWitt of Bates, Oregon, house guests of Mr. and Mrs. Rudolph Erickson, who brought them to the meeting. Mrs. DeWitt had a brooch set with about a dozen agates which had been cut and polished by her husband. They had been picked up on their own land and nearby property. Mr. Dewitt told of having seen the ground near Bates white with agates before the commercial collectors hauled them away by the truck load. He also said that since he has lived in Eastern Oregon he has seen the barren gravel dumps left in the wake of gold dredges become pastureland through natural seeding; and he believes that in a hundred years no one can tell from appearances that the land has ever been dredged. . . . F. W. Libbey brought a piece of "mountain leather" to the meeting. It is a form of asbestos which occurs in flakes instead of the usual parallel fibers H. B. Schminky allowed other members to look at his new book on lost gold mines for which he had just spent fifteen cents. No one was seen copying any of the maps or other data, thus demonstrating that there is "honor among geologists" Rudolph Erickson had hung his map of "Geology of the Southern and Southeastern Border Areas of the Willamette Valley of Oregon" on the wall. It looks very interesting, with plenty of type-printed information besides the tinted map of geological areas. . . . Leo Simon gave an interesting account of the Sunday trip to the U.S. Bureau of Mines experimental laboratory at Albany, Oregon. . . . Other members present were: Messrs. Baldwin, Elder, Keen, Matthews, Stanley, and Wilbur.

O.E.S.

LUNCHEON NOTES - MAY 10, 1951

There were present Mrs. May R. Dale, Chairman, and Messrs. Baldwin, Elder, Kelham, Keen, Libbey, Matthews, Schminky, Stanley, and Vance, and a guest, Mr. Sylvester. The Chairman announced the future meetings and field trip. . . . O. E. Stanley showed the results of his snap-shooting at the banquet, and an article on stripping a heavy overburden rock from a heavy coal seam. . . . Mr. Kelham had a pipestone pipe which had been found in the Ozark Mountains of Southern Missouri, quite a long walk from the pipestone quarries in Minnesota. . . .The Chairman thought it would be nice if more ladies were present at the luncheon meetings. The men agreed with her. . . .The meeting ended with volleys of cross-table chatter; interesting at the time, but not of historical importance.

* * * * *

May 17, 1951

Rudolph Erickson brought a jar of coarse sand and a few irregular fragments of rock which had come from a sand pit at Cipole station on the Southern Pacific railway west of Tualatin. The sand was not rounded, indicating, Mr. Erickson said, that it was deposited by very swift water. The large, angular fragments of petrified wood, limonite, and granite would lend weight to this conclusion. . . .H. B. Schminky had been spending his money again - this time for a copy of May 1951 Arizona Highways. The magazine has a colored map and pictures depicting the life of the early inhabitants of the southwestern desert states, and interesting articles by authorities in the history of the Indians of that region. . . .President Ford E Wilson announced that the evening meeting on June 8th will be addressed by Mr. Stanley Sporseen, a former member of the Society, who has returned from a year in Venezuela. The account of his experiences in that country should be an outstanding attraction. . . .The trip to Bend and vicinity is scheduled for June 23 and 24. This will be led by Mr. Phil Brogan whose writings on the geology of Central Oregon are read weekly in the Sunday Oregonian. . . .A trip to Vantage, Washington, is announced for the first week of July. This will be of special interest to collectors of petrified wood. It is understood that arrangements have been made for ample room for overnight camping. . . . There was some discussion of bumper signs to be used in our caravans but no definite design was adopted. . . .Those present were President Wilson, Luncheon Chairman Simon, and Messrs. Baldwin, Elder, Erickson, Keen, Schminky, and Stanley.

O.E.S.

G.S.O.C. MEMBER IN "SATEVEPOST"

(From the "First Church Spire" and the "Saturday Evening Post.")

"When you are reading the 'Post Scripts' in the Satevepost don't you wonder how people think up those clever bits. Well, we're not going to tell you how, but one of our new members could. She is Mrs. H. F. Travis, who had one of her ideas published in the March 24 edition."

"The Changing Years

1941

We were broke, so lived on hamburg for a week!

1951

We lived on hamburg for a week! -- so we're broke."

1950 INDEX

With this issue of the News Letter is included the index for the year 1950. This will now permit binding of volume 16.

MEMBERSHIP LIST
As of May 25, 1951
Compiled by Ruby M. Zimmer, Secretary

| <u>Name</u> | <u>Address</u> | <u>Zone</u> | <u>Telephone</u> |
|----------------------------------|---|-------------|------------------|
| #Adams, Dr. & Mrs. W. Claude | 2614 N.E. Bryce | 12 | GA 8747 |
| Allen, Dr. & Mrs. John Eliot | New Mexico School of Mines, Socorro, N.M. | | |
| Allison, Dr. & Mrs. Ira S. | 2310 Harrison, Corvallis, Oregon | | |
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| Bach, Miss Alwina | 7607 N. Fowler Avenue. | 17 | TW 1796 |
| Baldwin, Dr. & Mrs. Ewart M. | 2058 Harris St., Eugene, Oregon | | |
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| Buck, Mr. & Mrs. Shirley | 2730 McLoughlin Blvd., Milwaukie 22, Ore. | 22 | 2-6471 |
| Buoy, Mr. & Mrs. Leonard M. | 11609 S.E. Linwood Ave., " 22, " | " | SU 8643 |
| Bushby, Edward D. | 908 S.E. Hawthorne Blvd., | 14 | |
| Butler, Mr. & Mrs. J. Dean | 4404 S.E. Hill Road, Milwaukie, Ore. | | Oak Grove 3-7967 |
| Calef, Mr. & Mrs. M. H. | 2405 N.E. 41st Avenue | 13 | GA 3642 |
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| Campbell, Robert M. | 1700 S.E. 6th Avenue | 2 | EA 4633 |
| Carpenter, Mr. & Mrs. Charles B. | 2504 N.E. Dunckley Street | 12 | TR 7475 |
| Clark, Mr. & Mrs. William F. | 5237 N.E. Wisteria | 13 | GA 3242 |
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| Coats, Miss Ruth Emily | 702 East First Street, Tillamook, Oregon | | |
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| DuBay, Mrs. R. A. | 7925 S.E. 29th Avenue | 2 | SU 3648 |
| Elder, George V. | 6922 S.E. Brooklyn Street | 6 | |
| Erickson, Mr. & Mrs. Rudolph | Glenmorrie Drive, Oswego, Ore., | | Oswego 2-6422 |
| Fenton, Dr. & Mrs. Ralph A. | Rt. 2, Box 551, Oswego, Ore. | | CI 7638 |
| Fischer, Mr. & Mrs. Virilis L. | 420 N.W. Skyline Blvd. | 1 | BR 3591 |
| Foley, Mrs. M. J. | 7 - 10th St., Hood River, Oregon | | |
| Fowler, Miss Myrtice E. | 6116 N.E. Cleveland Avenue | 11 | MU 6385 |
| Galt, Mr. James | 1135 S.W. Montgomery Street | 1 | BE 4601 |
| Gordon, Mr. & Mrs. Ted, Sr. | Route 9, Box 170, Salem, Oregon | | |
| Gruber, Mr. & Mrs. William B. | 4700 S.W. Humphrey Blvd. | 1 | BE 6505 |

Charter Member.

| <u>Names</u> | <u>Address</u> | <u>Zone</u> | <u>Telephone</u> |
|------------------------------------|---|-------------|------------------|
| °#Hancock, Mr. & Mrs. A. W. | 2720 S.E. 84th Avenue | 16 | SU 5285 |
| Haselton, Mr. G. | 1107 S.W. 20th Avenue | 5 | BE 8453 |
| Haven, Mr. & Mrs. Leo W. | 2932 N.E. 47th Avenue | 13 | GA 2426 |
| Hazelhurst, Glenn Crawford | 818 N.E. Floral Place | 13 | MU 1042 |
| Henderson, Mr. & Mrs. Dwight J. | 838 S.E. Peacock Lane | 15 | EA 0814 |
| Henley, Miss Ada | 2015 S.E. Pine Street | 15 | EA 1475 |
| °#Hodge, Dr. & Mrs. Edwin T. | 2915 N.W. Luray Terrace | 10 | BE 4821 |
| Hopson, Dr. Ruth E. | Rt. 2, Box 111, Eugene, Oregon | | |
| Howell, Mr. & Mrs. Paul W. | Box 1213, Lowell, Oregon | | |
| Hughes, Miss Mary Margaret | 1524 S.W. 10th Avenue | 1 | BR 8849 |
| James, Mrs. Mildred P. | 135 S.E. 52nd Avenue | 15 | EA 5456 |
| #Jennison, Mr. & Mrs. H. L. | 1561 S.E. Linn Street | 2 | FI 2701 |
| #Johnson, Mr. & Mrs. E. Cleveland | 12311 S.E. Stark Street | 16 | KE 1024 |
| Jones, Dr. & Mrs. Arthur C. | 3300 S.W. Heather Lane | 1 | BE 3944 |
| Jones, Mr. Ben H. | 1105 Fulton Street, Newberg, Oregon | | |
| Keen, Mr. & Mrs. Albert | 2715 N.E. 41st Avenue | 13 | GA 1229 |
| Kelham, Mr. & Mrs. Edward A. | 14018 S.E. Linden Lane | 22 | |
| | | | Oak Grove 3-5461 |
| Kellmer, Mr. & Mrs. Earl B. | 6105 N.E. Rodney | 11 | MU 1093 |
| #Kimbrell, Mr. & Mrs. Geary | 2522 N.E. 57th Avenue | 13 | GA 9995 |
| Klatt, Joseph F. | 7315 S.E. 52nd Avenue | 6 | |
| #Kurtichanof, Mr. & Mrs. L. E. | 8014 S.E. 35th Avenue | 2 | SU 5416 |
| Lange, Mrs. Nellie V. | 1534 S.E. 56th Avenue | 15 | EM 7202 |
| Latourette, Kenneth Scott | 409 Prospect St., New Haven 11, Conn. | | |
| Lawrence, Dr. & Mrs. Donald B. | 2420 - 34th Avenue, So., Minneapolis, Minn. | | |
| Leavens, Mr. & Mrs. Aldice A. | Rt. 1, Box 591, Lake Grove, Ore., | | Oswego 2-2071 |
| Libbey, Mr. & Mrs. F. W. | 2259 N.W. Everett St. | 10 | BR 2145 |
| Lindeman, Mr. & Mrs. B. J. | 1110 Washington St., Oregon City, Oregon | | 6396 |
| Lytle, Mr. & Mrs. Marvin J. | 5344 S.E. 34th Avenue | 2 | TA 9601 |
| McCoy, Miss Sallie E. | 704 S.E. 34th Avenue | 15 | EM 9014 |
| #MacKenzie, Mr. & Mrs. Ray E. | 1504 S.E. Oxford Lane | 22 | EM 7892 |
| Macnab, James A. | 3440 N.W. Thurman Street | 10 | |
| Matthews, Mr. & Mrs. Thomas C. | 4014 N.E. Flanders Street | 15 | EM 6759 |
| Miller, Mr. & Mrs. Hugh | Rt. 1, Summit Drive, Lake Grove, Ore. | | |
| Mullins, Mr. & Mrs. James A. | Rt. 1, Box 356, Lake Grove, Ore. | | Oswego 2-0986 |
| Neikirk, Miss Jessie | 5231 S.E. Lincoln Street | 15 | EM 8961 |
| Nelson, Miss Clara A. | 9529 N. Edison Street | 3 | UN 0869 |
| Oakes, Mr. Alva | 218 N.W. Flanders Street | 9 | BR 5123 |
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| Oberteuffer, Mr. & Mrs. William H. | Rt. 2, Box 98, Oswego, Ore. | | CH 2268 |
| Ohmart, Reynolds W. | 534 N. Church Street, Salem, Oregon | | |
| Palmer, Mr. & Mrs. Thos. E. | 1670 S.W. Sunset Blvd. | 1 | BR 3077 |
| #Phillips, Mr. & Mrs. Clarence D. | 7630 S.E. 30th Avenue | 2 | SU 5655 |
| #Phillips, Mr. & Mrs. Kenneth N. | 4124 S.E. Woodward | 2 | VE 1052 |
| #Poppleton, Miss Grace M. | Rt. 2, Oswego, Oregon | | CI 7222 |
| #Poppleton, Mrs. R. R. | Rt. 2, Osergo, Oregon | | CI 7222 |
| Pruett, Miss Jeanne | 3203 S.E. Gladstone Street | 2 | EM 2035 |

° Honorary Life Member

| <u>Name</u> | <u>Address</u> | <u>Zone</u> | <u>Telephone</u> |
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| #Reichen, Mr. & Mrs. Sam | 8131 S.E. Crystal Springs | 6 | SU 8775 |
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| #Richards, Mr. & Mrs. Carl P. | 530 N. 19th Street, Salem, Oregon | | |
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| Rosa, Miss L. Kate | 807 S.W. 14th Avenue | 5 | BE 0297 |
| Ruff, Mr. & Mrs. Lloyd L. | 3105 N.E. 45th Avenue | 13 | TR 6980 |
| #Rydell, Mr. L. E. | Box 1020, Walla Walla, Washington | | |
| #Schminky, Mr. & Mrs. H. Bruce | 1030 S. E. 54th Avenue | 15 | EM 3903 |
| Schneider, Mr. R. A. | 1023 N.W. 18th Avenue | 9 | BR 4080 |
| #Simon, Mr. & Mrs. Leo F. | 7006 S.E. 21st Avenue | 2 | EM 0549 |
| Simon, Miss Lotus | Zoology Dept., Birge Hall, University of Wisconsin, Madison, Wis. | | |
| Skibley, Mr. & Mrs. Clarence D. | 2954 S.E. 115th Avenue | 66 | LI 4537 |
| Smith, Miss Almeda | 8205 S.W. Canyon Lane | 1 | |
| #Smith, Mr. & Mrs. Ben F. | 1350 S.E. Flavel Street | 2 | EA 1565 |
| Stanley, Mr. Orrin E. | 2601 S.E. 49th Avenue | 6 | VE 1250 |
| Steere, Miss Margaret L. | 6205 S.E. Scott Drive | 16 | VE 0917 |
| Sterrett, Chester K. | 3328 S.E. Knapp | 2 | SU 2114 |
| Stevens, Miss Eliza | 3934 S.E. Boise Street | 2 | |
| #Stevens, Dr. & Mrs. J. C. | 434 N.E. Royal Court | 15 | EA 9333 |
| Stiff, Mrs. Pearlita C. | 6506 N.E. Pacific Street | 13 | EM 0509 |
| Stone, Mr. & Mrs. Norris B. | Rt. 1, Box 179-A, Oswego, Ore. | | Oswego 6531 |
| Strong, Mrs. F. H. | 2755 N.E. 51st Avenue | 13 | AT 0191 |
| Swisher, Dr. K. M. | 5020 S.E. 92nd Avenue | 6 | TA 7410 |
| #Teeters, Miss Glenna M. | 3107 N.E. 32nd Avenue | 12 | GA 6205 |
| Thompson, Miss Ethel L. | Apt. 41, 1505 S.W. 14th Avenue | 1 | |
| Travis, Mr. & Mrs. H. F. | 7225 S.W. Corbett Avenue | 1 | CI 7026 |
| #Underwood, Dr. Herbert L. | 5226 S.W. Menefee Drive | 1 | BR 4692 |
| #Vance, Mr. & Mrs. A. D. | 5516 N.E. Rodney Avenue | 11 | MU 5204 |
| #Wade, Mr. & Mrs. Tracy | 3326 N.E. 25th Avenue | 12 | TR 6060 |
| Walters, Miss Kathleen | P.O. Box 344, San Francisco, Calif. | | |
| Weber, Dr. & Mrs. D. E. | 8005 S.E. Morrison Street | 16 | KE 7340 |
| White, Miss Mella C. | 7114 S.W. Brier Place | 1 | CI 7125 |
| Wilbur, Robert F. | 2020 S.E. Salmon Street | 15 | VE 7284 |
| Wilson, Mr. & Mrs. Ford E | 11844 S.E. Pine Street | 16 | |
| Zimmer, Miss Hazel F. | 805 S.E. 60th Avenue | 15 | EM 8319 |
| Zimmer, Miss Ruby M. | 805 S. E. 60th Avenue | 15 | EM 8319 |

JUNIOR MEMBERS

| | | | |
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| Davis, Greg | 130 N.E. 71st Avenue | 16 | KE 7277 |
| O'conner, John F., c/o Mrs. Robert L. Forrest, | 2644 N.E. Bryce Street | 12 | GA 4679 |
| Waack, Miss Carol | 301 N. Alberta, Apt. C | 11 | MU 6607 |

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SUMMARY

| | |
|-----------------------|-----------------------------------|
| Honorary Life Members | 2 |
| Charter Memberships | 29 (including 2 honorary members) |
| Junior Members | 4 |
| Other Memberships | <u>97</u> |
| <u>Total</u> | 130 |

LECTURE ON THE MAGIC OF SPECTROGRAPHIC ANALYSIS

"How much of what" is in that sample or specimen you've been guarding so carefully? Are you interested in analysis of soils, rocks, water, minerals, fabrics, metals and alloys, construction materials, or what-have-you? Or to the criminologist perhaps even the cigarette ashes on the carpet might be linked with the culprit! (How many coughs in a carload, etc?)

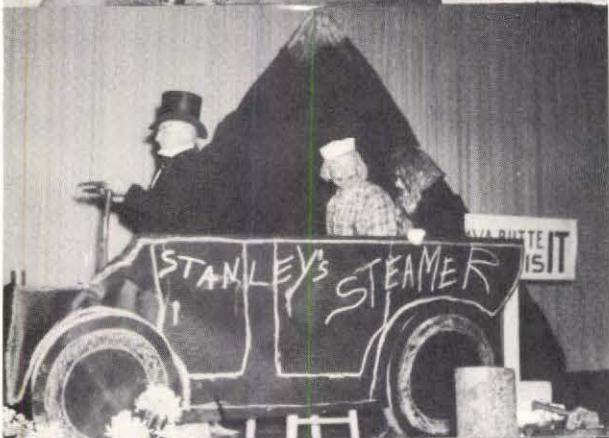
The role of spectrographic analyses afforded the public by the Oregon Department of Geology and Mineral Industries was presented at the meeting in Library Hall, May 11, by spectroscopist T. C. Matthews in a most interesting manner.

Importance of this method of analysis was shown by discussion of its great variety of applications in many fields of science and engineering. Its limitations were also enumerated, certain types of materials being more adapted to chemical or petrographic methods.

Procedures used in preparation of the "unknown" for analysis were then explained. The spectrum of ordinary light through a prism was projected on the screen. This was followed by slides - some in color - showing spectra emitted by "unknowns" being burned in a direct-current electric arc. Additional slides showed the method of determination of the "unknown" - both qualitatively and quantitatively - by comparison of its photographed spectrum with spectral photos of known elements prepared in the same manner. The latter known as "standard plates" are available for large numbers of spectral lines.

Assurance of accuracy in this method requires the use of a spectrograph, a micro-densitometer, and a "projection-comparator," an expensive outlay in equipment. A price schedule for services has been established by the Governing Board in accordance with provisions of the State law under which Mr. Matthews' laboratory has been established. Discount is granted to Oregon citizens on analyses of mineral or ore samples originating in Oregon. Copies of the price schedule and of a treatise on the adaptation and method of operation of the Department's spectrograph were distributed by Mr. Matthews to those present at the meeting. We are indeed indebted to him for such an interesting presentation of a quite technical subject.

R. F. Wilbur



16TH ANNUAL BANQUET

GEOLOGICAL NEWS LETTER

OFFICIAL PUBLICATION OF THE



VOL. 17 No. 7

PORTLAND, OREGON

JULY 1951

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Geological Society of the Oregon Country

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GEOLOGICAL SOCIETY OF THE OREGON COUNTRY

Officers of Executive Board, 1951 - 1952

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SOCIETY OBJECTIVES

To provide facilities for members of the Society to study Geology, particularly the geology of the Oregon Country. The establishment and maintenance of a library and museum of geological works, maps, and specimens. The encouragement of geological study among amateurs. The support and promotion of geologic investigation in the Oregon Country. The designation, preservation, and interpretation of important geological features of the Oregon Country. The development of the mental capacities of its members in the study of geology and the promotion of better acquaintance and closer association between those engaged in the above objectives.

SOCIETY ACTIVITIES, 1951 - 1952

EVENING MEETINGS: Formal lectures or informal round table discussions, on geological subjects, on the second and fourth Fridays of each month, at Public Library Hall, S.W. Tenth Avenue and Yamhill Street. 8:00 P.M.

FIELD TRIPS: Usually, one field trip is scheduled for each month.

LUNCHEONS: Informal luncheons, with geologic motif, each Thursday noon, at Chamber of Commerce, 824 S.W. Fifth Avenue. 85¢ per plate.

PUBLICATION: The GEOLOGICAL NEWS LETTER, issued once each month, is the official publication of the Society.

MEMBERSHIPS

A Member shall be a person at least twenty-one years of age who is interested in and supports the aims and objects of the Society and who has been recommended by the membership committee. A regular membership comprises: (a) a single person, or (b) a husband and wife, with children under 18 years of age. A Junior Member shall be a person under twenty-one years of age, with like qualifications and recommendation. Each membership receives one subscription to the Geological News Letter.

Annual dues are \$3.50 for residents of Multnomah and adjacent counties, \$2.50 for others, and \$1.50 for Junior Members. Remittances should be made payable to the Society. Applicants for membership should submit an application form, and remittance for dues, to the Secretary.

CALENDAR, JULY 1951

- July 12
Thursday Weekly noon luncheon. Please note that there will be only one weekly luncheon in July, due to the 4th-of-July holidays and closing of lunch room from July 15 to end of month.
- July 4 - 8 No regular field trip is scheduled for July. In lieu thereof, members may go to the Vantage PowWow at Vantage, Washington, to be held on the dates shown. Details of this rockhound's jamboree have been announced at luncheons and meetings.
- July 13
Friday No meeting on this date.
- July 27
Friday Regular evening meeting, 8:00 P.M.
Our Vice-President, Mrs. Bushby, will arrange for the speaker. Details will be announced later.

CHANGE OF ADDRESS

Miss Ella Triol
2547 S.E. 27 Avenue
Portland 2, Oregon

Mr. and Mrs. J. E. Potter
(Formerly Miss Agnes Fassbender)
164 S.E. Kelly Street
Gresham, Oregon

* * * * *

NEWS OF MEMBERS

Dr. Kenneth S. Latourette, member of the Geological Society of the Oregon Country, professor of missions and Oriental history at Yale University, New Haven, Connecticut, was elected president of the American Baptist Convention at the group's 44th annual meeting in Buffalo, New York, recently.

* * * * *

Dr. Arthur C. Jones was chairman of the meeting in the Lincoln High School auditorium Wednesday, June 20, at which Dr. Leon A Greenberg of Yale University and originator of the "Alcometer," spoke on the subject: "The Physiology and Metabolism of Alcohol." This was one of a series of seven meetings on the alcohol problem sponsored by the Oregon Alcohol Education Committee and the Portland summer session of the Oregon State System of Higher Education.

Two members of the Society, vice-president May R. Dale and Edward D. Bushby, are to be congratulated on their perspicacity: they discovered that, by combining forces, two could be members as cheaply as one, and were married Friday, June 22, 1951.

RUTH COATS' HOBBY HOUSE ATTRACTS G.S.O.C.

May 27, 1951

Ruth Coats' "shell game" held the interest of all who could crowd around her table as she exhibited and told about the many interesting and beautiful specimens in her extensive conchological collections. The hour and a half devoted to the inspection of the collection was punctuated with many "ohs" and "ahs" as unusually attractive shells were placed on the table for inspection. Some specimens were remarkable for their delicate and beautiful coloring while others were admired for their equally delicate and beautiful forms.

Miss Coats had rare shells from India---the kind that natives wear on their necks to insure fertility---which she said the Japanese copied in rice paste and sold to the people of India. No data as to the efficiency of either the imitations or the genuine shells are at hand. There were also "harp" shells; not colorful, but oddly shaped. Miss Coats told of a blinded ex-soldier who specialized in collecting this variety.

The wall cases for housing this large collection were admired by other collectors; the nonshadow lighting used in the "shell room" was the envy of some; and the worktable with its glass top, half white and half black, for use in working with dark-colored and white shells respectively, demonstrated that Miss Coats knows how to arrange her workroom to the best advantage.

Two ancient books about shells were almost as interesting as the shells themselves. One of these was printed on handmade paper from wood engravings almost as delicate and fully as accurate as steel engravings, and much clearer than photo-engravings or actual photographs. The other was illustrated by hand paintings of the shells, two on a page. As the paintings in different books of the edition were made by different artists, Miss Coats said that there was some variation in form and coloring, and the edition was necessarily small.

Other parts of the "Hobby House" were attractive to various members of the group. The library is extensive and nicely arranged, the kitchen is what most kitchens should be, but few are, and the photographic laboratory is a photographer's dream come true.

Luncheon on the patio was interrupted by a shower and continued in the house, after which the caravan, properly labeled with the new bumper cards, followed Leo Simon to Oceanside where Stanley G. Jewett told of a night spent on the large rocks of the coast, so that he could photograph some of the thousands of "early birds" which live there. He said that the eggs and young murrets were so closely spaced on the more nearly level shelves that he and his companions had to move them to get room for their beds.

Landing on these rocks is now forbidden by law, and shooting the birds and sealions is also prohibited.

The group left Mr. Jewett on the bluff and walked north along the beach and through the tunnel to the north.

The vesicular lava with many of the vesicles filled with zeolites, chalcedony, etc., was the most notable feature of the bluff north of the tunnel.

Showers detracted, somewhat, from the perfect enjoyment of the day.

The caravan disbanded at Oceanside and its members went home at their own speeds.

The G.S.O.C. owes much to Miss Coats for her hospitality and for her infectious enthusiasm which impels her visitors to the better classification of such collections as they may have. We regret that she is soon moving to California, but congratulate our neighboring state upon her decision.

The following names of members of the caravan were gleaned from Miss Coats' guest book:

Shirley Buck, Mrs. Shirley Buck, Anne Burnis, Jerry Farrar, Effie Godman, Eleanor Gordon, Dale Harnisch, Ada Henley, Rose Jennings, Stanley G. Jewett, Albert Keen, Stella Keen, Reynolds Ohmart, Roy V. Ohmart, Edith B. Sefton, Johanna Simon, Leo Simon, Orrin E. Stanley, Alice Wilson, and Ford E Wilson.

O.E.S.

LUNCHEON NOTES - April 19, 1951

Dr. Underwood brought two very unusual and valuable specimens of native silver from Mexico's most famous silver mine at Chihuahua; one was in wire form and the other was flat, or leaf silver. They were collected by the doctor's brother and were on their way to an Eastern museum. . . . Mr. Libbey had specimens of grossularite, a white garnet, found only in Josephine County (this specimen was from Josephine Creek near Eight Dollar Mountain), barite, and a gypsum crystal. . . . Dr. Arthur C. Jones had some chalcedony with stalactites. . . . Miss Ada Henley told a fish story which started an avalanche of other fish stories by Rudolph Erickson; Vance, with his sixty trout per day; Dr. Underwood's muskellunge; and Dr. J. C. Stevens' Mexican adventure with a sailfish which arrived in Portland in condition unsuitable for mounting. . . . Leo Simon described a trip to Carson with Dr. and Mrs. A. C. Jones and Mr. and Mrs. A. W. Hancock. . . . Dr. and Mrs. Jones had made a recent trip around the Olympic Peninsula and had observed bog iron and laterites. . . . Mr. Libbey explained the formation of bog iron and the process of laterization. . . . Other members present were R. L. Baldwin, George V. Elder, T. C. Matthews, H. B. Schminky, and O. E. Stanley.

May 24, 1951

The nine members who slowly sifted into Room "B" on May 24 included Vice-Pres. May R. Dale who opened the meeting with a request for an SOS for more women to bolster her morale, and Messrs. Elder, Libbey, Matthews, Schminky, Simon, Stanley, Stevens, and Vance. . . . Conversation was continuous and from so many sources at the same time that the reporter may have missed some valuable items. What a state he would have been in had a considerable number of women also been present. . . . Mrs. Dale was accorded a momentary semicessation of talk while she announced the Sunday trip and the Friday evening meeting. . . . Dr. J. C. Stevens said that Stanley Shirk of the Oregon Museum of Science and Industry had recently returned from St. Louis with interesting items for the Museum. Also that a summer camp in the John Day Country is being arranged for several boys to study nature "on the hoof." Donations up to \$1200 to help defray the expenses of some of the boys who are not able to pay the entire cost of the trip will be appreciated by the Museum (and by the boys). Experienced scientists from among the membership of the Museum Foundation and the Geological Society of the Oregon Country will give their time as instructors in their various specialties. . . . When asked about the drive for the Museum Building Fund, Dr. Stevens said that it is dormant. Can it be that Old Lady Portland is tight-fisted?

O.E.S.

VENEZUELA AS SEEN BY STANLEY SPORSEEN

In spite of the Rose Festival competition a fairly large audience assembled at Library Hall Friday, June 8th, to hear Stanley Sporseen, Senior Engineer in the planning branch, U.S. Army Engineers, tell about Venezuela. He had spent a year in that country as sort of "lend-lease" expert on dam construction for the Venezuelan government, which paid him his regular salary plus living expenses.

"The prices of food and clothing are about twice the United States' prices," Mr. Sporseen said.

The habit of burning off the tall grass and weeds each year on the grazing lands had depleted the fertility of the soil there to such an extent that an area which furnished feed for six head of cattle some years ago, will feed only one now.

Mr. Sporseen brought north with him the knack of speaking with his hands, so useful in a foreign country; and illustrated the first part of his talk by pointing out on his left hand the geography as well as the geology of the country he was describing, saving the hours that a less versatile man would have wasted in preparing maps.

Venezuela is planning about a dozen large dams for irrigation; half of them will be also used for power. (Do they come "cheaper by the dozen" in South America too?) One of the earth-filled dams will be 220 feet high and about half a mile long. Satisfactory foundation material was found by geologists at all of the dam-sites selected.

South of the Orinoco River is a large mass of hematite overlying hard, blue granite. The hematite is about 68 percent iron. The U.S. Steel Corporation ships about five million tons of this ore to Maryland by boat annually.

East of the iron country, gold is found and farther east, low-grade diamonds are mined. "Oil is found all over Venezuela," Mr. Sporseen said. The oil industry is very stable and the country derives its wealth from the oil royalties, thus eliminating the need for the taxation of real estate.

Wages of common labor are about \$2.75 a day where the men live close enough to the work so they can go home every night. Many of the workmen do not have enough to eat though most of the homes have refrigerators.

Mr. Sporseen said that a large part of the population is a mixture of three races: white, Indian, and Negro, and there is no "color line" recognized except by a few of the pure-blood Spanish people who hold aloof from the rest of the population.

Mr. Sporseen had kodachrome slides to illustrate the last part of his talk (even though he continued to use his hands in the dark to show that there was only about "so much" freeboard when five men got into a small canoe to explore the river). We learned a little later that "so much" in this case was about half an inch so the audience was enlightened after having been left in the dark for a while.

A 42-inch gauge rack-railroad was illustrated and a 24-inch gauge line that had about 58 miles of track with some delightfully dilapidated rolling stock was shown.

One slide showed the effects of a 5-minute rain storm which flooded the streets and mired trucks. A papaya tree with its enormous fruit, furnishing a year-round supply to the owner, and a pig, reputed to be "half grayhound" (and it looked it) were thrown upon the screen by Mr. Sporseen's operator, Leo Simon.

A 2-acre coffee-drying floor of tiles, illustrating the extent of the former coffee industry, and a giant sloth making his ponderous way through the treetops, were the subjects of other pictures.

There are no mosquitoes in the part of Venezuela where Mr. Sporseen worked, he said, on account of the excellent work of the active health bureau.

After some announcements by President Wilson, the meeting adjourned just enough before ten o'clock to keep from being left in the dark by the waiting janitor.

O.E.S.

REPORT FROM E. N. BATES

E. N. Bates, in a letter to the Baldwins, says that he and Mrs. Bates are getting settled in their new home at 94 Cloud View Road, Sausalito, California. They didn't like the locks of a dense thicket of dead bushes on the back of their lot - "the lower, back forty acres." Mr. Bates tells of the measures they took to improve the landscape as follows:

". . .so last Sunday Alex A. and Miranda were over for dinner in the unsettled living room. Alex had his fishing clothes along and insisted in giving us a lift in clearing up the brush in the back yard. He and I spent an hour or two working on the thicket which was much more of a job than we had expected. I noticed some green growth near the ground which we decided could not be saved. Soon a sickening truth filtered through my thick head that we were working in a patch of "poison oak" which had been sprayed, and a new, fresh, juicy growth was coming out to greet the warm spring days. We left the job, bathed with naphtha soap and used soda on exposed parts of our bodies. Well, I don't know what would have happened if we hadn't taken the treatment, but I do know what happened in spite of the remedies. The San Francisco News was minus its Industrial Reporter for a couple of days and a retired U.S.D.A. nonspecialist in plant life was out of commission. Cora and Eleanor also got infected as they came out to see their gallant he-men battle with the primitive jungle. We are all recovering slowly."

G.S.O.C. MEETING AT LIBRARY HALL, May 25, 1951

President Ford E Wilson announced the next two evening meetings and the field trips to Bend on June 23 and 24, and to Vantage, Washington, in July.

The new G.S.O.C. cardboard signs to be used on car bumpers when traveling in caravan were shown, and after adjournment many were purchased by members. They are being sold at cost, 10 cents each.

Some geological specimens were shown by Mrs. Dale and Mr. Davenport. Leo Simon showed a selection of colored slides gleaned from his records of many trips of the G.S.O.C. and some special trips of the Simon family. His running commentary on the pictures, the subjects shown, and photography and nature subjects in general, was of considerable interest to his audience.

Out of town members and guests were: (Actress) Mary Davenport and her father from Vancouver, Mrs. Ted Gordon, Sr., Mrs. Wm. Reeves, and R. V. Chmart of Salem.

O.E.S.

FIELD TRIP TO BEND AND VICINITY

June 23-24, 1951

The 1951 annual "Bender" of G.S.O.C. was an outstanding success. The president was pleased with the size of the crowd and with its high IQ, and the vice-president, when she and her husband joined the group at the Lava Cast Forest Saturday afternoon, was wearing - among other things - her most charming smile and a beautiful wedding ring. She reported that she and Edward D. Bushby had been married on Friday and were "on their way" - route undetermined - and duration of trip determined by Bonneville Administration.

Thirty-seven members and former members of G.S.O.C. with nearly the same number of geologically inclined people from Bend, Eugene, Roseburg, and other points, left the South City Limits Motel at Bend at one o'clock Saturday on highway 97 and at 15 miles turned east for an 8-mile drive through the woods over a road so dusty that some drivers did not know that they were driving upgrade.

Cars were parked and members of the group started on foot over what was declared to be "the longest mile in the world."

Some of the more sensible ones turned back at a quarter of that distance, but those who persevered to the bitter end were well repaid for their efforts by what they saw (and photographed).

There were casts of trees from two to three feet in diameter, some vertical and others horizontal. The tallest vertical casts were about five or six feet above the surrounding lava on the "upstream" side and about ten or twelve feet deep. One of the horizontal casts, or tunnels, was about 40 feet long. The top had been broken down at about half this distance. It was nearly three feet in diameter. Its interior walls had been fused and the melted lava had hardened in the bottom with its top surface flat and level.

The pine trees which had succeeded in getting a "toe hold" in the lava were wierdly formed and twisted. Small plants growing and blooming on what appeared to be bare rock gave evidence of Nature's ability to reclaim a desert after destroying all former life.

The evening entertainment at the motel, arranged by Mr. Brogan, consisted of banjo music by Paul Hosmer, Ken Hicks, Hugh Amsberry, and Larry Alseo. Several lively numbers were enjoyed by the audience.

C. G. Springer, president of the Deschutes Geological Club, welcomed the visitors to the Bend country and told about what could be seen by those with eyes to see.

H. H. Cassidy, Chief of Police, Bend, and former sheriff of Lake County, had a remarkable display of arrowheads and other stone implements from the surrounding country and from England. He told how to find likely arrowhead locations and how to distinguish those points intended for small game and the ones made to stun game for capture alive.

President Ford E Wilson and Phil Brogan, who studied geology together at the University of Oregon "way back when," told about the plans for Sunday.

The little cafe near the motels where most of the G.S.O.C. members spent the night was over-run Sunday morning, a dozen or more customers surging in on the heels of the cooks and waiters. Service was necessarily slow but most of the

1951

caravan left the motel as scheduled at seven o'clock, and others caught up with them at the View Point above Prineville. The sight of the neat little city in the valley of the Crooked River was a delight to the eyes. Here, Mr. Brogan crowded millions of years of geological history into a 5-minute talk before leading the caravan, now consisting of 27 cars, to Bridge Creek and the Painted Hills, heedless of the groans of the kodachrome fiends who were hustled past scenes of beauty at "miles per hour."

At the "turn-around" in the Painted Hills the group from Bend and Portland met Doctors W. D. Wilkinson and Lehi Hintze, who are working in that location with students from Oregon State College, and Dr. Ewart M. Baldwin. The augmented caravan backtracked to a picnic park where lunch was enjoyed in the shade of a narrow-leaved cottonwood beside a pretty stream. A sign at the well said that the water was unsafe to drink, but since the top parts of the pump including handle, spout, and rod, were missing, there was no possibility of getting water from the well.

On the narrow and crooked road from the turn-around to the picnic ground, the caravan had forced a pick-up truck, carrying two men, against the bank. As the reporter's car passed them, one of the men shouted: "Is this Phil Brogan's funeral?"

The caravan had stopped several times on the new Ochoco highway northeast of Prineville to look for fossil leaves. No startling finds were reported. However, the metasequoia location in the Painted Hills is due for a return engagement.

Dr. Wilkinson, the third notable member of the geological class of "way back when," talked briefly after the luncheon about the section of the state he is exploring geologically. He said that in that area of about 900 square miles one finds the finest geological section of Oregon. His group is working on the dual program of research and mapping, and training young geologists by assigning to them areas for examination, mapping, and describing in a thesis.

The group dispersed at the picnic ground and some went home by various routes while Leo Simon pushed farther into the hills and reported finding nice specimens of ammonites.

Rhododendron and squaw grass were lovely along the Mt. Hood road but we were not well enough defended by the swarms of mosquitoes to prevent out-of-state tourists from gathering large hand-fuls.

So far as the reporter was able to determine, the following members and former members of the Geological Society of the Oregon Country participated in a part, or all, of the annual "Bender." Dr. and Mrs. Ewart Baldwin and two boys, of Eugene; Miss Isa Botten, Mr. and Mrs. Phil Brogan of Bend; Mr. and Mrs. Shirley Buck, Mrs. Leonard M. Buoy, Mr. and Mrs. Edward D. Bushby, Mr. and Mrs. Wm. F. Clark, Mrs. Estella I. Conner, Mr. and Mrs. Rudolph Erickson and Mrs. Alta Yount (Mrs. Erickson's sister), Mr. and Mrs. Leo Haven, Miss Ada Henley, Miss Rose Jennings, Mr. and Mrs. Albert Keen, Mrs. Nellie V. Lange, Reynolds W. Ohmart of Salem; Mrs. Grace Poppleton, Mrs. R. R. Poppleton, Mr. and Mrs. H. Bruce Schminky, Alice Schminky and Miss Brown, Mr. and Mrs. Leo F. Simon, Orrin E. Stanley, Mr. and Mrs. Norris B. Stone, Miss Ethel L. Thompson of Eugene, Robert W. Wilbur, and President and Mrs. Ford E. Wilson.

O.E.S.

SUCCESS FOR OREGON RESEARCH

For thirty years Dr. Edwin E. Osgood, professor of medicine and head of experimental medicine at the University of Oregon medical school, has conducted research on leukemia. For fifteen years he and his associates have studied the effects of irradiation on human leukemic blood and marrow cells grown outside the body in glass containers. For nine years the observations made over this long period have been used as the basis for treatment of chronic leukemia that has made it possible for a number of persons to live normally and usefully far beyond the time such disease ordinarily would permit.

The facts of the research conducted by Dr. Osgood and other members of his staff have been set forth in the news columns of this paper, following the publication of an article by the doctor himself in the Archives of Internal Medicine. They are restated here briefly to point out that it is by such slow, careful research that men of science, usually retiring, selfless men such as Dr. Osgood, have won and will win the unending battles against human ills.

All over the world men are seeking treatments for cancer and in all likelihood it will be through such painstaking work as has been done here that the solution will come. Many men are devoting their lives to the cause.

Leukemia is a cancerlike disease of the blood-forming organs and, therefore, the research here has a direct bearing on the general study of cancer under way throughout the world. Part of the cost of the Oregon work is borne by cancer research funds.

The treatment discovered by the Oregon men is not a cure. But by regularly spaced total body irradiation it has been found that years of normal living, relatively free from discomfort or incapacity, can be assured many persons having chronic forms of the disease. Acute and subacute forms of leukemia have not been shown to respond.

The effect of the treatment on chronic sufferers can be likened to the effect of insulin on diabetics. Insulin is not a cure, either, but it makes it possible for sufferers from diabetes to live long, normal lives. There are many who live thus with a minimum of discomfort. A bus driver, in Eugene, is one who is able to continue his work and live happily with his family as a result of the leukemia treatments developed here.

Oregon should be proud of the work of its medical school research staff. It should provide to the fullest the means for continuing this and other work. Medical men contend that the establishment of a new teaching hospital at the medical school is essential to the furtherance of this part of the school's endeavors besides providing additional needed hospital facilities for adults and children and making it possible to train additional medical men. The legislature should make every attempt to provide the \$4,000,000 needed.

(From Sunday Oregonian, March 25, 1951)

* * * * *

Dr. Osgood was for several years a very enthusiastic member of the Geological Society of the Oregon Country.

LUNCHEON MEETINGS

May 31, 1951

Vice-President May R. Dale presided over the twelve lay members who drifted into the room at their convenience. . . . Stanley Shirk, of the Oregon Museum of Science and Industry called attention to courses in natural sciences which are scheduled for elementary and secondary young folks during the summer. The courses are to begin June 19th. Helen Bowers, a new member of the museum staff, will be an instructor. The expedition of boys from 14 to 17 years of age to the John Day country from July 9 to 21 was mentioned. A loan fund to help boys who cannot pay the full fee of \$50.00 has been established. For information see Mr. Shirk at the museum. . . . O. E. Stanley brought some small photos taken on the trip to Ruth Coats' Hobby House on May 27th and some of the Detroit dam which will be seen by many who make the trip to Bend in July. . . . May Dale had a pretty paperweight made from a section of a very unusual thunder egg mounted on a polished wood base. She also had several rather large sections of rock - of which at least one appeared to be petrified wood. They came from about 20 miles northeast of Prineville. . . . Rudolph Erickson brought specimens of quartzite from Holcomb Creek - a branch of Abernathy Creek - which he believed to be the farthest south occurrence of quartzite gravels in the Willamette Valley. . . . R. L. Baldwin said that Miss Hughes is not yet able to leave the hospital. The luncheon group joined in wishing her a speedy recovery. . . . A. D. Vance also talked. . . . Ada Henley called attention to an article in Science News Letter on the sources of color in certain gem stones. . . . Others present were: Ed Bushby, Hollis Dole, G. V. Elder, F. W. Libbey, H. B. Schminky, and J. C. Stevens.

* * * * *

June 7, 1951

When doctors disagree in the diagnosis of a human illness the result may be fatal to the patient. Not so serious is a difference of opinion concerning the classification of a piece of rock, so when Erickson hands a globular specimen to Vance and says "quartzite" and Vance looks at and says "chert", neither man's opinion nor the specimen in question undergoes the least change. This piece of "quartzite-chert" came from a gravel bed at Gateway, Oregon, where fossil salmon vertebrae have been found. The rock showed "chattermarks" indicating that it had been rolled along the rocky bed of a very swift stream. . . . E. A. Kelham brought two small specimens to the meeting. One was a green fragment with bits of harder black material embedded in the green. It was thought to be of volcanic origin. The other specimen was reddish brown in color, and at the close of the meeting no decision had been reached as to whether it was petrified wood or rhyolite. These specimens came from a stream bed east of Ashland at an altitude of about 4,000 feet. . . . Mr. Erickson read a letter from Dr. Chaney about some fossil leaves he had found in the Bilyeu Creek locality. An extract of the letter follows.

"I am sorry I have delayed so long writing you regarding the specimens from Bilyeu Creek. Your stepson came in to see me early this month, soon after I returned from the East. One of the reasons I have delayed is that the broad leaves represented on the slabs you sent me looked surprisingly like species occurring in such older floras as the Goshen. However, they are too fragmentary to be determinable in most cases, and I shall have to wait until you or I, or preferably the two of us together, can make a more representative collection before I have any clear idea as to the age of the deposits. The abundant conifer is *Metasequoia occidentalis*; this species ranges from Eocene to Miocene in western North America, so it does not give accurate age evidence. It is abundant at

Scio, in deposits considered to be of upper Oligocene age. I have an idea your locality represents somewhat older rocks. This is an extremely interesting find and I am anxious to develop it further.

"My plans for the year, however, will probably call for a trip to Japan this summer. In that case I shall not get to Oregon at all this year. If there is any change in plans, I shall communicate with you next month in the hope that we can visit the Bilyeu Creek locality together."

F. W. Libbey reported having found a strangely marked boulder which had apparently been unearthed in making a 12-foot road cut on the Rocky Point road about 2 miles south of its junction with Skyline Boulevard. H. B. Schminky thought, from Mr. Libbey's sketch, that it may be a bench-mark set by early surveyors, and that the cut may have been widened by recent work, thus uncovering additional areas of the rock. . . . A lack of courtesy, surprising in so cultured a group, has been exhibited by some members who persist in talking to their neighbors while a speaker "has the floor" and is trying to make himself heard as he tells about the specimens he has brought to the meeting, or relates some experience which he thinks (perhaps mistakenly) to be of interest to others. As a palliative for this habit we humbly suggest a long-handled gavel with which the chairman can tap the heads of the offenders with such force as may be indicated by the enormity of the transgression.

* * * * *

June 14, 1951

T. C. Matthews "threw a scare" into certain members at the Flag Day luncheon by producing a map and reminding the group of recent tests in geography which floored some college students. But he was merciful, and instead of quizzing the group he told about the Iranian oil fields and their effect upon the rest of the world. He said that the oil industry furnished employment for one-quarter of the labor in the nation - about 100,000 people - and furnished nearly 10 percent of the world's supply of oil....The owners of land nearly all live in cities. They furnish each tenant an ox, seed, water for irrigation, and the use of the land for which they demand four-fifths of the crop, while the tenant who "only" furnishes the labor, gets the other fifth. . . . F. W. Libbey brought some pieces of fossilized wood belonging to Hollis Dole, and some fossilized fishbones from near Jamieson, about 14 miles north of Vale, Oregon. The wood was classified as "Araucarioxylon" which Webster defines as "A genus of widely distributed fossil conifers of late Paleozoic to late Mesozoic time, having a wood structure resembling that of modern araucarias of which the monkey-puzzle tree is an example" Mr. Kelham had some very pretty groups of crystals that he found near Ashland, Oregon, at an elevation of about 4,000 feet. . . . Leo Simon presided at the meeting. . . . Other members present who are not mentioned above were R. L. Baldwin, G. V. Elder, Mr. & Mrs. Rudolph Erickson, H. B. Schminky, O. E. Stanley, and A. D. Vance.

* * * * *

June 21, 1951

The luncheon group was notified by the manager that the Chamber of Commerce dining room will be closed all the last half of July. . . . This meeting was strictly a stag affair, which was really too bad, for Dr. Stevens was resplendent in his famous lavender shirt and tie. . . . Specimens were few: a piece of rock from the wall of Smith River canyon in Northern California, brought in by Rudolph Erickson (Bruce Schminky thought it might be from a very old stratum which had been altered by the elements as manipulated by Father Time until it is nearly a serpentine), and there were small rocks from Massachusetts brought in by Albert Keen for identification. No definite decision was heard as to their correct names. . . . Others present at the meeting were Messrs. Baldwin, Elder, Stanley, and Simon, who was chairman.

O.E.S.

GEOLOGICAL NEWS LETTER

OFFICIAL PUBLICATION OF THE



PORTLAND, OREGON

August 1951

GEOLOGICAL NEWS-LETTER

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Geological Society of the Oregon Country

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POSTMASTER: Return Postage Guaranteed

GEOLOGICAL SOCIETY OF THE OREGON COUNTRY

Officers of Executive Board, 1951 - 1952

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CALENDAR, AUGUST 1951

August 2 Weekly noon luncheon.
Thursday

August 9 Weekly noon luncheon.
Thursday

August 10 ANNUAL PICNIC. This is planned to follow the traditions
Friday observed for so many years by G.S.O.C. The place is the
 crater in Mt. Tabor Park, and the time is the 6:15 P.M.
 Please be on time as there will be singing and skits after
 the food is disposed of. For your assignment and other
 details, see page 70 following.

August 16 Weekly noon luncheon.
Thursday

August 23 Weekly noon luncheon.
Thursday

August 24 No scheduled evening meeting.
Friday

August 26 Field trip under leadership of Mr. H. Bruce Schminky, to
Sunday area northwest of Portland, including Leif Erickson Drive.
 Assemble at Journal Building at 1:30 P.M. to form trip
 caravan. The gates to Leif Erickson Drive will be unlocked
 only long enough for the caravan to pass. It is suggested
 that Portland and Hillsboro quadrangle maps, also Treasurer's
 "Geologic Map of Portland Area", be taken along. Remember
 G.S.O.C. cards for car bumpers.

August 30 Weekly noon luncheon.
Thursday

NEWS OF MEMBERS

We have just received word from Eva Catlin that she was married to Mr. Alex J. Linder and is now living at 1133 - 32nd Avenue, Seattle 22, Washington. She sends greeting to all her old friends in the Society.

CHANGE OF ADDRESS

Mrs. Edwin L. Minar, Editor The Geode, publication of the Salem Geological Society
1945 N. 17th Street
Salem, Oregon

WHEN DOES A THING BECOME A FOSSIL?*

By

W. Dwight Pierce

The writer has arrived at the threshold of paleontology by the back door, having been originally asked to determine the fragments of beetles found in the La Brea asphalt at Los Angeles. This study has led on and on into other fields of fossil insects, but still there hangs overhead the question - When does a thing become a fossil? No one can give an adequate answer.

It is not a question of mineralization or petrification, for many specimens are found that are unquestionably classed as fossils and yet have not been altered in their nature. On the other hand, by certain chemical processes we can mineralize a specimen completely and permanently in the laboratory.

It is not a question of extinction, for many specimens associated with validly designated fossils are still extant. And on the other hand some animals and insects have become extinct in the last century. Some insect genera extend back to the Eocene times, with little change.

It is not a question of decomposition because the Mastodons frozen in the Arctic ice are still in perfect flesh. Decomposition starts within a day or two after death, except when the animal is preserved by chemical or by ice.

When a wasp stings a spider it puts it into a perfect state of preservation which lasts for months; how long, has not been tested.

There is apparently some delicate little element of time involved. If it is 5,000 years old it is not a fossil in the eyes of some paleontologists, but if it is 10,000 years it may be. If it is 100,000 years old there is no question about its being a fossil; and yet it may look and be exactly like it was shortly after the creature died. But should antiquity alone be a criterion for the beginning of a science?

What is the exact minute, day, year, decade, century, or millennium at which our paleontologists will accept a specimen as in the realm of paleontology?

If a part of an animal or plant becomes surrounded by materials which will henceforth preserve it in the same condition for millennia of time, with pressure the only condition changing, why is it not a fossil from the minute of such embedment? As time rolls on, the superincumbent layers of materials will press and condense the materials below, and perhaps the specimen will gradually be pressed out of its original shape until it lies in one plane. But it was a fossil long before that, even in the eyes of the most strict paleontologist.

The writer has had occasion to study several types of fossil formation and is naturally in a quandary as to what that mysterious hour is that takes a thing out of the realm of ordinary biology into the realm of paleontology.

The most beautiful insect fossils known to us are those found in Baltic amber, which was formed from the exudates of ancient conifers and entrapped insects while it was in its sticky state. But many trees today exude gums (balsam, resin, copal, damar), that entrap ants and other insects, and when these pieces of gum fall to the ground they become a part of the forest carpet. As time goes on the gum hardens and very little change will take place between the first month of hardening and centuries later. When does gum embedment become a fossil?

*From a reprint from Bulletin of the Southern California Academy of Sciences, vol. 49, September-December, 1950, Part 3.

1951

Along volcanic faults hot springs often bring up water heavily impregnated with calcite and other salts, and sometimes these salts crystalize very quickly, especially upon insects, sticks and other objects in the water. The specimens become saturated with the salts, and are a part of the deposit. In time this deposit becomes onyx or marble. Onyx-marble has been continuously forming in some areas of Arizona, California, and Baja California since Miocene times and perhaps long before that. The preservation of insects in this onyx-marble is almost as perfect as that in amber. Is there a time before which the specimens in onyx are fossil, and after which they are not?

Peat is an accumulation of leaves, stems, and other plant materials in a boggy place. Insect remains are often included in the mass. As time goes on, this material becomes packed in tightly compacted layers. When the peat comes under additional pressure such as that of a glacier or the result of a landslide, it is even more tightly pressed to form lignite, and the same insects are present, perhaps more crushed.

When in this gradually developing compression does peat or lignite come into the realm of paleontology? If either is interglacial it is Pleistocene, and accepted. But is it not the same and in the same condition even if formed much later than during Pleistocene?

Asphalt embedment has been going on since middle Pleistocene, and continues today. The insect caught in the bitumen is often immediately submerged, although at other places may not become completely surrounded by the material for months. After final complete embedding, it becomes a part of the continual deposition of such material until there may be thousands of layers above it. The condition of the insect fragments after the disintegration of the soft tissues, remains constant throughout the centuries. Do not the materials of paleontology, as concerns bituminous embedment, start with the present day catches and extend back in unbroken series to the earliest evidences of petroleum seepage?

In these four fields the paleontologist can study the changes in insects from today back to the interglacial periods. In what actual time do his studies enter the field of paleontology? Does not the actual field of paleontology begin with the complete encasement of an object?

On November 25, 1940, Mr. G. P. Kanakoff collected a piece of soft, clayey soil on San Nicolas Island, which had the trails of fox, bird, tenebrionid beetles and other creatures at the margin of a sandy beach. By 1946 this specimen was hard rock. If this portion of beach had suddenly been covered by a different kind of dust or soil, those trails would have been preserved. The hardening process might have taken longer at this site, but the record was imprisoned. How many years must elapse before such a record of present day life comes into the realm of the paleontologist? Does it become a fossil series of prints as soon as the record is made permanent by imprisonment or sealing?

The introduction of ecological thinking into paleontology will necessitate our recognition of such materials as incipient fossils.

At any rate, in the studies we are making of recent Pleistocene life, we have continuous series of materials for all periods of time, and our studies must take into account the transitions in structure, the interventions of climatic change, and the changes of supporting life.

METEORITES

On Friday evening, June 22, the Geological Society of the Oregon Country met with the Portland Astronomical Society in joint session to hear Mr. Harry G. Johnson, Director of the Brown Foundation, Walla Walla, Washington, tell about meteorites, and to see his pictures and specimens.

Your reporter admits that the subject and most of the lecture was "way over his head," but he did glean from the talk that there are three kinds of meteorites: iron, stone, and siderolite. The latter is composed of both iron and stone.

Mr. Johnson also had some tektites, which Webster says are composed of a glassy substance of unknown origin and are found in Australia and in Europe. According to one theory, they are "chips from the moon" as a result of some explosion or collision.

On account of the thinness of the atmosphere above 75 miles from the Earth, meteorites do not become incandescent until they have reached that distance and they usually are consumed before they have approached nearer than 35 miles from the Earth's surface.

O.E.S.

THE ROCK HOUNDS POW-WOW AT VANTAGE, WASHINGTON

July 4 - 7, 1951

This get-together for hundreds of rock hounds from all parts of the country was selected for the July field trip in lieu of some local excursion. Seven members of GSOC: the Hancocks, the Keens, Mrs. Ted Gordon, and the Wilsons attended the meeting.

Highlights were the opportunities to meet old friends and make new ones, the daily trips to collect fossil wood and other geologic materials, the boat trips on the Columbia to view the Indian writings on basalt cliffs and the many excellent programs at the camp.

With activities scheduled all of the time, there were no dull moments. Even the wind livened up things during several nights by trying to blow the entire camp down the river.

Spark plug of the meeting was hard-working Pow-Wow Chief Charles H. Robinson, Jr., but many others played a major part in making the Pow-Wow a success.

F.E.W.

BINDING YOUR NEWS LETTERS

Have your back numbers of the Geological News Letter bound at only 25 cents a volume. Remove staples, arrange sheets in proper sequence, insert the index which was printed in the June 1951 issue, and take the package, marked with your name and address, to R. L. Baldwin, business manager. He will have the binding done for you. Act now.

A METHOD OF DETERMINING THE AGE OF HUMAN FOSSILS

A long-overlooked test for the antiquity of man in the New World - or, for that matter, the antiquity of human fossil bones anywhere - is being advocated by the Smithsonian Institution anthropologists.

A part of the fossilization process is the slow accumulation by the bones of the element fluorine from ground water. The amount accumulated depends on how much of the element is present in the soil where the bones are buried. Tests have shown, however, that the accumulation increases with time and is essentially the same for all bones buried together at the same period.

A major problem in anthropology is to determine whether a human skull, for example, found mixed with bones of extinct animals is of the same age as the animal remains. It always has been very difficult to reach a conclusion because of the human practice of burying the dead. There is no reason why a man should not be buried accidentally by his fellow men in the middle of a deposit of fossil bones of animals. This sometimes has led to the untenable conclusion that man lived and died at about the same time as certain animals that are now extinct. Now, according to a communication by Dr. T. D. Stewart, curator of physical anthropology of the Smithsonian Institution, if animal and human bones found together show relatively the same accumulation of fluorine, there can be a fair assumption that both have been buried for about the same period.

Actually the test is not new. It was first used in France in the 19th century but apparently was forgotten until a few years ago when it was revived by Dr. Kenneth Oakley, of the British Museum of Natural History. By means of it Dr. Oakley was able to establish relative age of some of the most controversial British fossil man bones.

Between the time of the French and British workers, Dr. Thomas Wilson, a former Smithsonian curator of archeology, became interested in the method and applied it to fossil man in North America. His contributions, which appear to have gone unnoticed, showed that man has lived in America since the end of the ice age. For more than half a century, Dr. Stewart says, physical anthropology in America has been deprived of this evidence of man's antiquity.

(From the Smithsonian Institution, May 2, 1951.)

LUNCHEON NOTES - June 28, 1951

One geological specimen, a rock which F. W. Libbey, who brought it to the meeting, classified as "barite with chalcantite." . . . O. E. Stanley had a few prints from the negatives he had exposed on the field trip to Bend and vicinity. . . . Mr. Vance mentioned that Dr. Hodge had gone to Africa as petroleum geologist. Also, that Arthur Piper had met Ellen James, at present employed by the U.S. Geological Survey in Washington, D.C., when he visited the U.S.G.S. headquarters recently. . . . Leo Simon said that Mildred James had returned from her extended cross-country tour by Greyhound Bus, and had immediately left for British Columbia on a professional engagement. . . . Others present at the luncheon were Messrs. Baldwin, Elder, Keen, Matthews, and Schminky. Total present: nine.

O.E.S.

FIRST ANNUAL OREGON MUSEUM FIELD TRIP FOR BOYS

July 9 - 21, 1951

Fourteen enthusiastic boys, under the leadership of Mr. Stanley H. Shirk, Director of the Oregon Museum of Science and Industry, camped in the juniper and sagebrush-covered hills near Clarno, Oregon, and for two weeks absorbed a diversified program of nature study. GSOC members at the camp were A. W. "Lon" Hancock, who supervised fossil hunting; Lloyd L. Ruff, who carried out the first week of geology instruction; Mrs. Howard E. Bowers, leader in biology activities and archeology; Mrs. A. W. Hancock, in charge of the kitchen; Mrs. Ford E Wilson, who assisted her; and this reporter, who took over geology during the second week. Behind the scenes, Dr. J. C. Stevens played a vital part in making the camp a reality. A number of other persons, not Society members, were included in the camp personnel.

The Society, by vote of the Executive Board, has made a contribution to the loan fund set up to assist boys who could not currently handle the trip fee.

There were too many highlights to list here. Among them, however, were the trip through the Horse Heaven cinnabar mine, the trip to the John Day vertebrate fossil beds, the success in collecting fossilized nuts, the abundant *Metasequoia* twigs and cones collected at Fossil, the artifacts found in Indian camps, the rattlesnakes collected alive, the quantity of ice cream which found its way into camp, the friendly rivalry between Tent 1 and Tent 2 boys, the astronomy talks each night, photography of camp activities by the press, and the daily swimming parties in the John Day.

Memories of this expedition into the John Day country will never leave the minds of those who participated. In spite of the dry camp, the dust, the 100-degree-plus heat, and the primitive living conditions, the entire group, both boys and adults, expressed a keen desire to go back again next year.

Ford E Wilson.

LUNCHEON NOTES - July 12, 1951

Five! Count 'em. Five! That was the surprising number of women at the July 12th luncheon. There were also nine men. . . .H. B. Schminky, who recently returned from a trip through southwestern British Columbia, brought a large sample from the mammoth mine at Silverton in the Slocan Lake district north of Trail. . . .T. C. Matthews had a sample of monazite which sometimes is found with uranium and thorium. . . .G.V.Elder brought a few pebbles for identification. F.W.Libbey said they contained feldspar. . . .Eleanor Gordon, beautifully tanned from her stay at the Vantage, Washington, camp, told about some of the activities of the camp. . . .Mella White and Clara A. Nelson were present after a long absence. Ada Henley and Estelle Conner, who had been seen more recently at the noon luncheons, completed the roster of women for the day. Men not previously mentioned were R.L. Baldwin, F.L. Davis, Albert Keen, Leo Simon, and O.E.Stanley.

O.E.S.

FUTURE MEMBER

Mr. and Mrs. Charles F. Booth of Greenwich, Connecticut, are parents of a son, Courtland L. Booth, born July 1, 1951. The baby is a grandson of the late Dr. and Mrs. Courtland L. Booth.

TRY AND STOP ME!

Man is not alone in his efforts to stop the Colorado River's rampaging. Man's tries have been successful - so far. But in terms of centuries, I would put my money on the Colorado to nullify his work.

What can you do with a river that, after eating its way through a mile of ordinary rock, proceeds to grind through solid granite?

Downstream from what we tourists see of the Grand Canyon, Nature had a shot at dam building. On the highlands above the Toroweap - a side canyon - volcanic action started in a big way. Lava flowed down the canyon, blocking up the Toroweap until the canyon was filled to the point where a steep slope fell away to the River's bed.

Down this slope the lava cascaded, hit the water, solidified, and lava began to pile up on the bed to reach the other wall of the canyon. Ultimately, a lava dam 600 feet high said "Check!" to the River.

Was the Colorado mortified? Not so you could notice! It proceeded to fill a lake behind the dam, then poured silt over the top to cut the dam!

Today, if you are sturdy of limb and looking for punishment, you can see what is left of the ancient dam, the remnants of lava clinging to both walls of the Grand Canyon - mute witnesses to yet another victory for the mighty Colorado!

When did all this happen? Dunt esk! But they do say the lava is as black and sharp as a recent deposit. It doesn't mean a thing. I've seen lava that might have cooled off yesterday except that there is no human record of a volcanic outburst thereabouts.

These ancient lava flows may have taken thousands of years to build up, layer by layer. Man's knowledge of the Canyon country may have been acquired during what is, in Nature's timetable, just a brief interlude between spasms of volcanic activity.

Jack Service
(In Sparling Metrograms, June 1951.)

CLIMATE BOON SEEN IN DAM
Geologist Hints Moister Winds

"Quite important climatic effects" would result from construction of Pelton Dam on the Deschutes River, Dr. Edwin T. Hodge said Thursday.

Dr. Hodge, Oregon State College, consulting geologist for Northwest Power Supply Company and Portland General Electric Company, testified in the fourth day of a federal power commission hearing on the question of licensing the dam.

Its construction is bitterly fought by sportsmen's groups, the State fish and game commissions, United States fish and wildlife service and the interior department.

Dr. Hodge said dry winds blowing in the Deschutes canyon would pick up moisture from the surface of the proposed seven-mile-long reservoir and would materially improve livestock grazing in the area surrounding the dam.

Lower temperature seen

He added that the reservoir would lower downstream water temperatures 4 to 5 degrees - an important point to fishermen, who fear the dam would increase temperatures.

His observation, he said, is that the Deschutes contains no gravel bars of the type on which salmon seek to spawn. He asserted it has only boulder bars covered with lava ash wash. (From the Oregonian, June 15, 1951)

NEW FIND OF VERTEBRATE FOSSILS

More than 3 tons of fossil bones of late ice-age mammals were collected for the U.S. National Museum last winter by Dr. C. Lewis Gazin, Smithsonian Institution curator of vertebrate paleontology, assisted by Franklin L. Pearce, also of the Smithsonian Institution, on the Azuero Peninsula in western Panama.

The collection includes several limb bones and other parts of the skeleton of a mastodon, gigantic elephantlike animal of the period. However, the larger part of the collection consisted of remains of the fabulous ground sloth, Megatherium, of which three fairly complete skulls were obtained.

Dr. Gazin also found fragmentary remains of ice-age horses, deer, peccaries, and turtles not greatly different from animals of the same families today, although the horse would be recognized as a distinct species by paleontologists. Also excavated were remains of a large armored sloth known as a glyptodont, and of a giant capybara and armadillo. The collection contains remains of one bird.

The majority of the material came from the vicinity of a spring near the little town of Pesé. There is a possibility that a spring existed here even in ice-age times and that the abundance of fossils is due to the fact that it was a waterhole for the animals of the region.

The work was carried out with the helpful cooperation of Panamanian officials and the specimens are to be divided between the U.S. National Museum and the National Museum of Panama. (From Smithsonian Institution, May 24, 1951)

GSOC 1951 ANNUAL PICNIC PLANS
Friday, August 10

The cafeteria style has proved so popular that the committee will repeat this feature. So, bring one dish (of food, of course) sufficient to serve four for each person in your group. For example, if there are three in your group bring enough to serve 12. Bring the same kind of food as you brought last year. For those bringing casserole or other hot foods, bring, if possible, a second dish to place underneath for hot water. For new members, and those not present last year, please telephone Mrs. May R. Bushby, Food Chairman, (Capital 2123 evenings or Fillmore 3361, Ext. 618, business phone) for suggestions.

Note: Coffee, sugar, and cream, also hot buttered rolls, will be furnished. Bring your own plates, cups, and eating tools. Also proper device for serving the food you bring. Bachelors and those without cooking facilities are advised that tomatoes, cottage cheese, pickles, and olives will be welcome.

Don't do like the Scotchman who was invited to come to dinner and bring something. He was undecided, so he brought his brother. On second thought, that will be alright too. Bring your brother and the whole family. (Picnic Committee, General Chairman. Mrs. Rudolph Erickson)

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CALENDAR, SEPTEMBER 1951

September 6 Weekly noon luncheon. Note that the luncheons are again
Thursday at the Chamber of Commerce, instead of at the Y.M.C.A.

September 13 Weekly noon luncheon.
Thursday

September 14 Regular evening meeting, 8:00 P. M.
Friday Round-table discussions, and some kodachrome slides
 of interest to members.

September 20 Weekly noon luncheon.
Thursday

September 27 Weekly noon luncheon.
Thursday

September 28 Regular evening meeting, 8:00 P. M.
Friday A travelog of a recent trip through Africa from Cairo
 south by Mr. H. W. Roberts. Outstanding pictures will
 be shown. The public is cordially invited.

September field trip plans are not yet completed. Details will be
announced later.

NEW MEMBER

Stanley H. Shirk, 908 N.E. Hassalo Street, EA 3807. Mr. Shirk is Director
of the Oregon Museum of Science and Industry.

NEWS OF MEMBERS

Mrs. Anna H. Mattern died in Portland, July 27, 1951, at the
age of nearly 85, having been born in Portland August 30, 1866. She was the
mother of Dr. Alfred E. Mattern, a member of the Geological Society of the
Oregon Country.

"A. W. Hancock, famous geologist of Portland," lectured on
"The Mighty Columbia - Scientific Truth and Indian Legend" at Hood River,
Sunday, August 12; the last day of a 3-day festival sponsored by the
Hood River Music Association.

The Oregon Agate and Mineral Society gave a 3-day exhibition
of cut and polished gem stones and hand-made jewelry at the Oregonian Hostess
House the last weekend in July. Lloyd L. Ruff was chairman of the show
which attracted large crowds of interested "rock-hounds" and geologists.

ROADSIDE GEOLOGY MAY BE EASIER THAN YOU THINK

Have you ever said to yourself, - "If I just had the time I'd take a trip back into those hills and have a look at the rocks. They surely look interesting from here,"-then shook your head, thinking how inaccessible geology is to the average person? Well, don't shake your head any more, because you can have a look which, though not as interesting as seeing the rocks and formations in place, has the advantage of scarcely taking you a stone's throw from the highway you are driving. The next time you cross a large stream coming out of those hills stop and examine the gravel of the stream bed. There before your eyes lay beautiful samples of all the hard rocks and some of the soft rocks in the entire watershed drained by the stream.

Pick up some of the cobbles. Heft them, break them open, examine their texture and mineral composition with your hand lens. "By Jove!!" you exclaim, "These are certainly large black crystals in this gray lava! Must be hypersthene. Here's a banded lava with quartz phenocrysts. Probably it is a rhyolite or a welded tuff. There are no black basalt cobbles here, so the rhyolite must be what makes the layers in that big flat-topped mountain back there. No sediments are supposed to extend this far north. Hah! There's a nice-looking agate. It has a little moss in it, too. Hm-m. Here's an odd one. Looks like a lapilli tuff, but it surely is hard and smooth. Has a few large feldspar crystals in it and some epidote. Seems that I've heard some high-powered geologist talk about low-grade metamorphism in tuffs, creating such crystals. Porphyroblasts, they call them. Well, if there's metamorphism in this area, it must be from one of those diorite intrusives. Might even be some mineralization. There ought to be a few pieces of diorite in the gravel here. Well, sure enough, here is one."

Does such a trip sound to you as if it had interesting possibilities? If it does, then let me say that this is just the beginning. From a sample of the sand under your feet much can be determined about the nature and the history of the rocks this stream has eroded. Certain types of mineralization can be determined from any metallic minerals present, and the presence of monazite would indicate rare and radioactive minerals.

Stream captures and the paths of ancient glaciation are often determined by the presence of specific rocks in the gravels left behind. In economic geology much use is made of sedimentary mineralogy, especially in petroleum investigations. Your little field trip may not lead to any great geologic discovery, but it will be worth an hour or so of armchair discussion with friends.

Paul W. Howell

GEOLOGY AND AGRICULTURE

On July 27, 1951, the Geological Society of the Oregon Country had as speaker for the evening Mr. William Fox of the Soil Conservation Service. Mr. Fox heads the Land and Water Inventory which is part of the Project Plans Division of Region 7, headquarters of which are here in Portland. The theme of his talk was water, considered particularly as one of our country's vital resources, and the methods used by the Soil Conservation Service in evaluating the quantity of water available from year to year. A natural-color sound motion picture depicted, in a very vivid manner, methods used in measuring snow depths on some of our Pacific Northwest mountains, and the uses to which the results of such surveys are put.

M.R.B.

THE 1951 PICNIC

The "cafeteria style" for serving the food, adopted by the picnic committee, was voted by the diners to be a great success. Food chairman, May R. Bushby, had so distributed her assignments that the variety was great, the quantity more than adequate, and the quality unexcelled. So far as is known to the editor, no one was hungry when the tables were cleared and the crowd went over the hill to the auditorium for the playlets and program of community singing.

The Bureau of Parks has greatly improved the crater of Mt. Tabor during the past year. The "back drop" of the stage shows the stratification of volcanic debris very clearly, stairways and railings have been provided for the convenience and safety of the actors and the audience, and seats have been arranged on the properly graded "floor" of the auditorium.

Dr. Arthur C. Jones supported by a picked choir consisting of Mildred James, Clarence Phillips, Norris Stone, Johanna and Leo Simon, and May Bushby led the group singing and rendered a special number for which the group had no copies.

President Ford Wilson welcomed the audience and made official announcements. Norris Stone's reading of a scientific paper on fluorescence may have deserved careful attention with a following period for answering questions about points not quite clear to his hearers; but no one could hear him on account of the din created by the four vociferous vendors whose loud-mouthed calling of their wares in the aisles during his reading. The four vociferous vendors who originated and wrote their own parts were Leo and Johanna Simon, Mildred James, and Robert Wilbur.

The first stage presentation showed a row of army cots in front of a banner reading: "Oregon Museum of Science and Industry Expedition." The actors filed in and went to bed. Then an argument started between Mr. and Mrs. Hancock about the stains on Lon's legs. He explained that he had fallen into a fluorescent creek. Upon inspecting his back, Mrs. Hancock was horrified to discover that her husband was "all lit up." Mosquitoes disturbed the slumbers of the explorers, and a final stampede occurred when Lon discovered that Kieth Patchett's rattlesnakes had escaped through a hole in the box.

"Mrs. Condon goes on a Picnic" played by Mr. and Mrs. Leonard Buoy as "Aunt Minnie" and "Mrs. Condon" was excellently done. Mr. Buoy's portrayal of Aunt Minnie could not have been excelled.

A. W. Hancock in a short talk about the museum's expedition told of the work and the play enjoyed by the fourteen boys and their instructors (totalling 22 at times) during the two weeks in the desert country. The talk should be preserved for use in publicizing future expeditions.

Two new members attending their first G.S.O.C. picnic were: R. H. Corey, consulting engineer, and Stanley Shirk, director of the Oregon Museum of Science and Industry. Miss Hughes who had not been able to attend the society meetings for some time was present also, having been brought by Miss Marjorie Smith in her Anglia car.

Jane Erickson was general chairman of the picnic committee, and with only two weeks to make the preparations, including writing the plays, did a most excellent job.

O.E.S.

* * * * *

Jane Erickson says that she has, and is holding for their owners, one pot lid and one white wooden-handled butcher knife.

GEESOCKER MADNESS

When summer madness settled down on four Geesockers bold,
 They went upon a fossil hunt, as if such truck were gold.
 From Prineville up to Mitchell, and from Condon to John Day,
 They sashayed o'er the highways, in spirit blithe and gay.

They sought the wily oreodon, the camel, and the horse,
 The ancient bear and other beasts, - in fossil form, of course;
 They slept upon the mesa, in the sand and 'neath the stars,
 While coyotes in the distance sang wild, unmelodic bars!

They dug from his cretaceous bed the wrinkled ammonite,
 And cracked his hard concretions with blows of sheer delight.
 They clambered up the crumbling cliffs, risking their silly necks,
 Breaking the desert's silence with the clatter of their pecks.

Bouquets of leaves they garnered in the laminated rock,
 Entranced with each discovery, revealed by pry and knock.
 And thus they learned a lot of dope when Nature opened up
 Her book of history written there, when Adam was a pup!
 then
 And/through heat and dust and glare, and sizzling rays of sun
 They trundled themselves homeward, saying "Didn't we have fun?"
 Perhaps you're right if you now think that these poor goofs are hexed,
 For they keep questioning themselves: "Where are we going next?"

Leonard M. Buoy.

A LETTER FROM DR. EDWIN T. HODGE

The following letter, written in New York and dated August 9, 1951, has been received by the President of the Society.

"Tomorrow I sail for Cape Town, S.A. - I will be on the sea for 20 days.

"I will spend about 6 weeks in Union of South Africa and then slowly move up the West African Coast.

"Since I will be gone for about a year I think some one else should have the honor of being director of the G.S.O.C. - also who can serve better than I. So - Please accept my resignation from the Board of Directors of the Geological Society of the Oregon Country.

With kind regards
 Edwin T. Hodge."

The members of the Society envy Dr. Hodge his remarkable opportunity to geologize in Africa, and wish him the very greatest pleasure and good luck in his adventure. It has been proposed that his resignation be not accepted until the end of the Society year next February, at which time another member may be elected to fill out the unexpired term. Certainly, however, the Society is sorry to lose the services of Dr. Hodge, who has played such an important role in its affairs.

AUSTRALOPITHECUS

Casts of reconstructed skulls and other bones of Australopithecus -- the curious extinct apelike creatures with primitive human characters that lived in South Africa at least a million years ago -- have just been added to the anthropological collections of the Smithsonian Institution. The originals of the Australopithecus remains, which appear to have opened a new chapter in man's prehistory, are retained at the Pretoria Museum in South Africa, but the copies now at the Smithsonian are so exact that they are of essentially equal value to the originals for study by American anthropologists.

The greater part of this material was obtained since 1947 by Dr. Raymond A. Dart, of the University of the Witwatersrand at Johannesburg, from ancient caverns at Makapans in the Central Transvaal. Geologists find it difficult to date these caverns, but they may be at least 1,000,000 years old.

Australopithecus differs from other fossil apes -- and from living apes -- in several important directions, most notably perhaps in the upright posture. Judging from the pelvis, which is essentially similar to that of modern man, these creatures walked upright. Further evidence of this appears in the balancing of the skull. The so-called foramen magnum, where the skull joins the spine, had shifted forward, and it may therefore be assumed that the head was held erect. Size of the brain, however, was not particularly notable. In addition, the canine teeth and snout were considerably reduced.

Because of the uncertainties about their age, it is doubtful, according to specialists in physical anthropology, whether these creatures could be considered the actual ancestors of modern man. They may represent an evolutionary movement in the human direction that went no further. Whatever their status, they show an unusual combination of manlike and apelike physical characters that have not heretofore been discovered. (From the Smithsonian Institution, August 16, 1951.)

* * * * *

FRESNO COUNTY FOSSILS

More than a ton of shale and marl containing 100-million-year-old fossils, collected in Fresno County, California, this summer by Dr. Alfred R. Loeblich, Jr., Smithsonian Institution paleontologist, is now being processed at the United States National Museum.

The Fresno County locality has one of the thickest known deposits -- in some places as much as 25,000 feet -- of sediments laid down in the ancient sea bottoms during the Cretaceous geological period, the heyday of the great dinosaurs on land and of the weird swimming reptiles, the plesiosaurs in the sea. The material collected by Dr. Loeblich, however, contains fossils far less conspicuous than these monsters, but in some ways they represent even stranger forms of life. They are minute Foraminifera, or shelled protozoans. Although constituting a very large branch of the Animal Kingdom, the Protozoa are one-celled animals and nearly all are microscopic; the best-known of the living forms are internal parasites which cause some of the most deadly diseases.

Foraminifera are a specialized group of Protozoa that build an external shell, and these shells may be preserved as fossils. During the Cretaceous period, represented by the material collected this summer, many of the more modern shell forms were first developed. These fossil shells are often used by the oil industry to determine the age of geologic strata and thus are of economic importance, as well as being of value to the scientist in showing evolutionary trends.

Although single-celled, such sea creatures may have many chambered shells. As they grow they form new chambers all connected by openings through which the protoplasm of the cell flows. But, however many chambers of this sort are produced, the protoplasm is continuous through all and the animal still remains a single cell.

Among the "giant" Protozoa now in the Smithsonian collection are extant forms, such as one about 4 inches long, which was found in the Indian Ocean and looks like a very slender branch of bamboo, and a Philippine form, which is a disk an inch in diameter. (From the Smithsonian Institution, August 22, 1951.)

LUNCHEON MEETINGS

August 9, 1951: The thirteen members present at this luncheon in the Y.M.C.A. dining room were Elizabeth Barr, Ada Henley, Clara Nelson, and Messrs. Baldwin, Elder, Erickson, Kern, Schminky, Simon, Stanley, Stevens, Vance, and Wilbur. . . . Mr. Schminky told about the next field trip along Lief Erickson Drive, Miss Henley had read an interesting article which she passed around for inspection, Mrs. Barr had specimens of olivine sand and lava sand from Hawaii. Mr. Stanley had small samples of granite and schist which he had brought from the "high lake basin" of the Wallawas where he had spent nearly two weeks "communing with nature" and the Mazamas who were on their third decennial trip to this region.

There were present: * * * * *

August 16, 1951: /Vice-President May Bushby, Ada Henley, Estella Conner, and Messrs. Simon, Baldwin, Vance, Stone, Matthews, Libbey, Elder, Schminky, and Stanley. . . . Mr. Elder brought a wooden chain which had occupied his time for two afternoons in the making. It was complete with a lock on one end, a swivel and a four-sided cage containing a ball. A very clever piece of craftsmanship. . . . Mr. Matthews brought two "Alinco" magnets and specimens of linnacite from LaMotte, Missouri; smallite and erythrite from Cobalt, Canada; and cobaltite from Sweden. He told about the use of cobalt in television sets, and the use of magnets as cupboard-door fasteners. . . . Mr. Libbey had a specimen of manganese oxide which is found in nodular form in the volcanic tuff north of Mt. Vernon, Oregon. . . . Mr. Simon gave a graphic account of an auto accident from which he escaped without personal injuries and with but little damage to his car.

* * * * *

August 23, 1951: The August 23rd luncheon was held in the Y.M.C.A. dining room with Leo Simon presiding. Those present were Mrs. Conner and Miss Henley and Messrs. Baldwin, Erickson, Schminky, Stanley, Stevens, Vance, and Mr. Erickson's guest and partner Dick Childers. . . . Mr. Schminky showed maps of the location of a proposed aluminum plant and a diversion of water from the Frazer River in Canada. . . . Leo Simon had a large ammonite from Hot Springs, South Dakota, and explained the growth of the creature. He and Mrs. Simon are making a visit to the Tacoma Agate and Mineral Society and then an extended trip through southwestern British Columbia.

* * * * *

August 30, 1951: Mr. Kelham brought some specimens of fire clay and fire brick from Troy, Idaho, to the meeting. He said that the clay was also used in ceramics but Mr. Matthews thought the texture was too coarse for high class work. . . . May Bushby presided at the luncheon. Also present were Ada Henley and Messrs. Baldwin, Bushby, Elder, Erickson, Keen, Kelham, Matthews, Schminky, Simon, and Stanley. . . . The meeting was held at the old location in the Chamber of Commerce building.

O.E.S.



Photographs by
 May R. Bushby & Orrin E. Stanley

G. S. O. C.
 PICNIC
 1951

GEOLOGICAL NEWS LETTER

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Oct. 1951

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GEOLOGICAL SOCIETY OF THE OREGON COUNTRY

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SOCIETY OBJECTIVES

To provide facilities for members of the Society to study Geology, particularly the geology of the Oregon Country. The establishment and maintenance of a library and museum of geological works, maps, and specimens. The encouragement of geological study among amateurs. The support and promotion of geologic investigation in the Oregon Country. The designation, preservation, and interpretation of important geological features of the Oregon Country. The development of the mental capacities of its members in the study of geology and the promotion of better acquaintance and closer association between those engaged in the above objectives.

SOCIETY ACTIVITIES, 1951 - 1952

EVENING MEETINGS: Formal lectures or informal round table discussions, on geological subjects, on the second and fourth Fridays of each month, at Public Library Hall, S.W. Tenth Avenue and Yamhill Street. 8:00 P.M.

FIELD TRIPS: Usually, one field trip is scheduled for each month.

LUNCHEONS: Informal luncheons, with geologic motif, each Thursday noon, at Chamber of Commerce, 824 S.W. Fifth Avenue. 85¢ per plate.

PUBLICATION: The GEOLOGICAL NEWS LETTER, issued once each month, is the official publication of the Society.

MEMBERSHIPS

A Member shall be a person at least twenty-one years of age who is interested in and supports the aims and objects of the Society and who has been recommended by the membership committee. A regular membership comprises: (a) a single person, or (b) a husband and wife, with children under 18 years of age. A Junior Member shall be a person under twenty-one years of age, with like qualifications and recommendation. Each membership receives one subscription to the Geological News Letter.

Annual dues are \$3.50 for residents of Multnomah and adjacent counties, \$2.50 for others, and \$1.50 for Junior Members. Remittances should be made payable to the Society. Applicants for membership should submit an application form, and remittance for dues, to the Secretary.

CALENDAR, OCTOBER 1951

- October 4
Thursday Weekly noon luncheon.

- October 11
Thursday Weekly noon luncheon

- October 12
Friday Regular evening meeting, 8:00 P.M. Round-table dis-
cussions. Second lesson in rock study, with special
emphasis on obsidians and welded tuffs. Hand specimens
will be shown; also thin sections under the microscope.

- October 18
Thursday Weekly noon luncheon.

- October 20,21
Sat. & Sunday Field trip to Eugene and vicinity.
Details are given in a separate discussion on page 78.
Remember this is an unusual opportunity to visit the
multi-million-dollar Lookout Point dam, now under
construction, and to learn about its geology.

- October 25
Thursday Weekly noon luncheon.

- October 26
Friday Regular evening meeting, 8:00 P.M.
This is a joint meeting with the Portland Astronomical
Society and the Telescope Makers and Observers.
A moving picture depicting solar prominences will be
shown. Mr. James H. Carl, instructor in astronomy at Lewis and Clark
College, will discuss this subject. Other topics will be considered
also.

Members of the Geological Society wish to extend their deepest sympathy to president Ford E Wilson whose mother, Mrs. Minnie Wilson of Salem, died Sunday, September 30, 1951.

* * * * *

Helen Haven, former editor of the News Letter, reports the marriage of her daughter, Betsy Ann Rydberg, to Ronald Lei Harvey at St. Rose Church, N.E. 54th Avenue and Alameda, on August 25th. After a short trip to Lake Tahoe the newlyweds are nicely settled in their new home.

PLANS FOR OCTOBER FIELD TRIP
TO EUGENE, OREGON, AND VICINITY

Saturday A.M. - Drive to Eugene and secure quarters. Hotels and motels are available so that each group can choose its own accommodations.

Saturday P.M. - Assemble at Jasper, Oregon, at 1:00 P.M. for caravan to quartz-crystal area. Jasper may be reached by driving east through Springfield on McKenzie River Highway, turning south on one of two roads which turn south a short distance beyond the city limits, and then turning east for a few miles to Jasper. Read a description of the locality, written by Mr. Howell on page 79 of this issue of the News Letter.

Sunday A.M. - Assemble at 9:00 at State Highway stockpiles on U.S. Highway 58 east of Rattlesnake Road which goes up Rattlesnake Creek from Trent. From Eugene, drive southbound on Highway 99 to Goshen, turn onto Highway 58 and follow it to meeting place. Mr. Paul Howell, Resident Geologist at Lookout Point dam, and a member of GSOC, will lead the group for the balance of the trip. The following itinerary is planned - conditions permitting.

1. Rattlesnake Siding to note obsidian in gravels. (The realgar-orpiment sagenite locality is nearby.)
2. Old Gaultier Construction Camp to examine waterlain tuffs and tuffaceous shales.
3. Parking area at dam for 30-minute stop. (Zeolites in rocks in fills are nearby.)
4. Visit such rock cuts along the railroad and highway relocations as may be reached. Theme of discussions will be chiefly on pyroclastic rock, so nicely revealed now, their nomenclature, distinction, and engineering importance.

In order to save as much time as possible for field observations, plan to take along a picnic lunch, to be eaten when and where it will best fit in with the itinerary and weather conditions. The caravan will disband in time for Portland people to return with mostly daylight driving. Remember that the area to be visited is one of intense construction activities, so be sure that your car is decorated with GSOC bumper cards fore and aft.

OCURRENCE OF QUARTZ CRYSTALS NEAR JASPER, OREGON

A recently discovered deposit of quartz crystals is located 14 miles south-east from Eugene, Oregon, as the crow flies, but about 17 or 18 miles by road. The deposit is becoming well known to local mineral collectors and rock hounds and quite a few of them have visited the locality. This writer, accompanied by Mr. Francis McCabe, who led the trip, and Mr. Frank Bacon, recently made a brief reconnaissance of the area and collected samples. It is best reached from the town of Jasper by following a graveled road up a small tributary of the Middle Fork of the Willamette River named Hills Creek which passes through the town. Approximately 6 miles from Jasper a road branches off to the left (north). This left road is followed to a rock quarry located about half a mile from the Hills Creek road. At the quarry, a logging road branches off to the left (west). Unless you have a four-wheel-drive vehicle, it is best to leave your car here and walk the remainder of the way. About three quarters of a mile up the logging road is the summit of the Middle Fork-McKenzie River divide, and the quartz deposit.

The crystals are concentrated in a residual clay deposit several feet in thickness which blankets a considerable portion of the upland surface in secs. 9 and 10, T. 18 S., R. 1 W., W.M. The clay, when dry, is generally a light gray color, but shades of tan and rusty yellow also are present. The parent material, as far as could be determined from the rather infrequent exposures in the road cuts, is yellowish tan tuff and lapilli tuff. The fragments in the tuffs are chiefly whitish pumice, but small hard fragments of maroon and greenish-gray rock are also present. Quartz and feldspar crystals are present in the ground-mass. The quartz crystals range in size from very minute to 2 or 3 millimeters. Larger crystals have been reported from the area but none were seen. In the parent rock the crystals are coated with a white material that makes them difficult to distinguish from feldspar crystals or other small fragments but, when weathered out, they lose the coating and the bright, sparkling, clear crystals are revealed. Many of the crystals have been washed out of the clay and carried down the road half way to the quarry. Those who wish to collect would do well to examine these local concentrates. Some of the material, when washed free of silt and clay, contains more than 60 percent of quartz crystals.

The quartz crystals have the typical habit of beta-quartz (the high-temperature form, that is) appearing as two six-sided pyramids joined base to base. Sometimes the bases are slightly separated by a narrow prism zone. Commonly, the crystals contain ovate or rounded light greenish-gray inclusions. The name or nature of this included material has not been determined.

Geologically, the writer believes that the tuffs should be correlated with the early Miocene welded-tuff of the Coburg Hills as described by Lewis (Dick Lewis, Geology of the Coburg Hills, Master's Thesis, University of Oregon). The deposit probably dips a few degrees to the east and strikes almost north-south. Immediately underlying the tuffs is a varicolored mixture of lapilli tuff and mudflow material, nonquartz bearing. Higher points of the upland are either intrusives or flow remnants of basalt.

The gentle topography of this upland surface as well as the extent and thickness of the residual clay suggest that the surrounding countryside had reached an erosional stage of late maturity prior to the incision of the present streams. Looking northwest across this region from the top of Lowell Butte, the writer gets the impression that in early times the drainage ran from south to north, which is at a sharp angle to the present drainage.

Pieces of fossil wood, in the form of float, are scattered over the quartz area. Much of it has a well-preserved grain structure, and both hardwoods and softwoods are represented.

GSOC MEETING - September 14, 1951

The meeting was opened by President Ford E Wilson introducing new members and guests among whom were members of the Utah Mineral Society of Salt Lake City. It was announced that one meeting of October would be a joint meeting with the Portland Astronomical Society.

The October field trip is scheduled to go to a Eugene area. It is to be a 2-day trip; with travel to Eugene on a Saturday morning, a small side trip Saturday afternoon, and the main trip Sunday.

Mr. Wilson held a "potlatch" in which both members and guests, numbering about 50, eagerly scrambled for the rock specimens done up like Christmas packages. The specimens consisted of cinnabar, so-called coprolites, diatomaceous earth, straight-grained pumice, and metasequoia imprints.

After the potlatch, very interesting kodachrome slides belonging to Mrs. Erickson and Mr. Wilson depicting the Bend field trip, the Clarno Museum trip, and several other equally interesting excursions were shown and described.

The group was introduced to a microscope although it may be all too familiar a sight to many and it was explained "How to Approach and Caress the Brute" (meaning the microscope). Mr. Wilson expressed a long-time desire to pull away the mystery from the petrographers - those geologists who name the rocks. A very informal last half hour was spent filing up/^{and}taking a peek at a slice of rock and in swapping rock stories.

The "slice of rock," incidently, was about one-one thousandth inch in thickness and this, Mr. Wilson said, is not obtained by cutting with a razor blade. A flat face is first ground on the rock, it is cemented to a glass slide with a special cement, then the final grinding down is made. A cover glass is cemented on with balsam, then it is labeled. It takes an experienced person half an hour to make one of these slides.

Mary Davenport

CAIRO TO CAPETOWN IN ONE HOUR

Mr. W. H. Roberts who, with his wife made a trip the length of East Africa from north to south, showed at the September 28 meeting colored motion pictures of the trip and told the members and guests of the G.S.O.C. about the interesting things they had seen in that far-away land. They traveled by airplane, boat, train, and automobile.

Close-up pictures of animals in their native jungle were particularly interesting. Especially good were the views of a large lion. "Camel riding," said Mr. Roberts, "is very easy, once the beast gets on his feet." The trick is to stay in the saddle while he is rising from the kneeling position. The pictures clearly illustrated this difficulty.

Included in the pictures were those which showed the weathering of the face of the Sphinx, and of the immense waste dumps from the diamond mines. While not strictly geological, the pictures of the native dances were interesting to geologists.

The pictures and the interesting descriptive talk with which Mr. Roberts accompanied them will be long remembered by all who were at this meeting.

OES

CRATER CALLED FIRST IN SIZE

The National Geographic society announced Saturday that conclusive proof had been found establishing Canada's Chubb crater as the largest known meteoritic crater on earth.

The announcement followed a month-long study by scientists of the National Geographic-Royal Ontario museum expedition. The group, headed by Dr. Victor Ben Meen, a Toronto geologist, went to the crater site, between Hudson and Ungava bays in northwestern Quebec.

The crater was discovered last year, but scientists had been doubtful as to whether the huge depression was caused by volcanic, glacial, or meteoritic action.

Later examinations revealed that the crater measured 1350 feet deep with a two-mile rim diameter, doubling the dimensions of Canyon Diablo crater in Arizona, long believed to be the world's largest meteoritic crater.

Working with mine detectors in the final two days before their departure on August 22, the group discovered a "magnetic anomaly," or a metal-bearing mass, under the eastern rim of the crater.

Though there was no actual recovery of fragments from the meteor, Dr. Meen reported that findings with the detectors supplied proof of meteoritic material.

He said tons of iron meteorite fragments, weighing up to 1000 pounds each, were found scattered around the lake-filled crater. (From The Oregonian, August 25, 1951.)

LUNCHEON NOTES - September 6, 1951

This meeting was marked by the lack of acrimonious (this word has been checked by use of Macmillan's Modern Dictionary) debate. In fact, nothing was said which would upset the digestion of the most sensitive soul.

There was some discussion of earthquakes, but no decision to have one was reached. . . .G. O. Elder brought his "blacklight" with which to view specimens of tungsten ore from the vicinity of his property in Montana. The tungsten in the rock fluoresces green. He also provided a black cloth to cover the lamp and ore while under inspection. . . .Ada Henley had news that Mr. Kraft, who has visited our society and is interested in jade, had given a jade window to a Baptist Church in one of the north-shore suburbs of Chicago. . . .There were present R. L. Baldwin, Estella Conners, G. V. Elder, Rudolph Erickson, Ada Henley, Albert Keen, Edward Kelham, Orrin Stanley, and A. D. Vance.

JAMES PATTERSON REMEMBERED

From remote areas of the Colombian Jungles the Smithsonian Institution is receiving from travelers Indian "medicine staffs," canes with carved human effigy heads. Among them is a staff with a figurine head of a man wearing a vizored Scotch cap and a Scotch vest of the late seventeenth century. His features can be recognized from portraits still extant. It is this man's strange fate to have become the "latest of the gods" with a cult which, during two and a half centuries, has spread far among the Indian tribes of tropical South America.

The man was James Patterson, founder of the Bank of England. Before that he was a Scotch tin peddler who walked through the English northern counties with a pack of tinware on his back. During the last years of the seventeenth century he promoted a scheme to establish Scotch colonies on both the Atlantic and Pacific coasts of Panama. These would act as clearing houses for all trade with the Orient and Europe through the Isthmus. One colony was established in 1698 at Caledonia Bay on the Caribbean coast of Darien, but it failed at the end of two years. Only a few of Patterson's followers escaped alive after disease struck the settlement. But apparently he had made a tremendous impression on the Panama Indians, for they believed that he possessed supernatural powers; and after he left he was elevated to the status of spirit adviser, and his likeness appeared on the staffs of medicine men far beyond Darien where he first made his appearance.

For many generations the cult seems to have been confined to the Isthmus. Quite recently, however, explorers have found that it has spread far into other territory. Though its popularity continues among the San Blas Indians of the Caribbean coast of Panama, in the region where it started, it seems to be advancing up the courses of the Magdalena and Atrato Rivers and into the Colombian jungles. (From the Smithsonian Institution, September 12, 1951)

LUNCHEON NOTES - September 13, 1951

At the September 13th luncheon in the Chamber of Commerce there were present: President Wilson, Vice-President Bushby, Mrs. Baldwin, Mrs. Barr, Messrs. Baldwin, Bushby, Elder, Erickson, Keen, Kelham, Schminky, Shirk, Stanley, Stevens, and Vance, and a guest, Mrs. Erickson who is a member of the Minnesota Geological Society.

Mrs. Erickson told the group that her society has weekly lectures through the winter; weekly trips in the spring and fall; and usually a long trip, two and one-half weeks, with a chartered bus to some such place as Glacier National Park. Some of the trips include as many as one hundred members. A total membership of the M.G.S. is about 250 members.

President Wilson called attention to the accumulation of zinc and aluminum multilith plates belonging to G.S.O.C. and raised the question of what should be done with them.

Kelham had a slab, broken across the layers, of a sedimentary rock found in the terminal moraine of Lake Couer d'Alene. . . . Rudolph Erickson had some specimens from near Seneca in Bear Valley. . . . A. D. Vance had returned from the famous Spencer Creek fossil location with several nice specimens of *Anadara devincta* Conrad and one very fine specimen which he claimed as another link in support of his new species *Anadara devincta* Packard. . . . Mrs. Barr had been to Victoria where she had purchased an old book (1869). "The Old Red Sandstone"

by Hugh Miller. The location described is in England. . . .H. B. Schminky reported several Bureau of Mines reports which some of our members had received as gifts now on sale at \$2.50 to \$5.00 each. . . .Stanley Shirk announced the series of Audubon Scenic Tours to open on September 20. . . .Dr. Stevens said that the museum is running short of space and would like to have owners of loan exhibits call for them.

* * * * *

September 20, 1951

President Ford Wilson was present briefly and announced the coming field trip to Beverly Beach on Sunday, September 30. . . .A. D. Vance had a piece of petrified wood from the beach. . . .Rudolph Erickson reported finding a kind of fossil in a new location near Scotts Mills which has been reported from only three other locations in the United States. . . .Estella Conner had a piece of lazulite from South America that had been given to her by Mr. O'Neill, a railroad construction engineer. . . .Fay W. Libbey exhibited a specimen of nickel silicate. . . .A magazine containing an article about the "Rhino Cave" on the shore of Blue Lake, Washington, was passed around. . . .There were present: Mrs. Conner, Miss Henley, and Messrs. Baldwin, Elder, Erickson, Libbey, Keen, Schminky, Shirk, Stanley, Vance, and Wilson.

OES

MY DAY

By
Elmore Rosenfelt

Saturday is considered to be a fine time to catch up on all the odds and ends that have accumulated through a busy week. I like to plan my days carefully to be sure that no minute may be wasted on nonessentials.

As is usual on Friday evenings, I made mental and written notes of the work to be done and the relative importance of the various items before turning out the light and composing myself in dreamless (almost) slumber. The list ran as follows:

Rake up all the rotten prunes and dump them on the compost pile.
Pick up the windfall apples and bring the best ones into the house. Dump the rotten and bird-pecked ones on the compost pile. Get a fire permit and burn the rubbish heap in the corner of the yard. Cut off all the dead blooms from the hydrangea bush and burn them. Cut back the long, slender branches on the yellow transparent apple tree. Burn all of them.
Mow the grass along the south side of the yard where Mrs. McDonald kept it wet while watering her own lawn. Take out all the dead canes from the raspberry and loganberry vines and burn them. Go to the hospital to visit Bertha. Write a letter to Robert about his mother's condition. Write four or five pages for the News Letter (This is a MUST). Get to bed early to prevent falling asleep in church on Sunday morning. To do this it will be necessary to set the alarm for six.

On reconsideration half an hour or so later I decided not to set the alarm this time since one can do better work if he gets a good night's sleep (That is a basic rule).

To provide against the probability of rain I made an alternate list. Part of it follows:

Pick up and sort all magazines and papers. Bundle all papers to take to the church on the way to the hospital. Vacuum all rugs and dust everything thoroughly. Sort and place on proper shelves all magazines in the "empty room" in the basement. Go over all late negatives, selecting those for which orders are on hand and any that might produce an acceptable Christmas card. Make 5 by 7-inch prints from these. (Be sure to stop printing by nine.)

Came Saturday morning, and most of it passed before I got active. At eight-thirty I struggled out of bed and by ten o'clock had finished washing the breakfast dishes. It was raining. Safe day to do the burning, but I didn't think I should work in the wet. One can't be too careful after he reaches a certain age - or an uncertain one, either, now, can one?

The kitchen sink (seen by daylight) was in a deplorable condition. It might even be unsanitary, for all that I knew; so I started scrubbing it with various kinds of cleaning compounds and finally got it to looking pretty neat (compared with its former condition). But that was hard work, so I lay on the couch for a while and read the morning paper. Then I suddenly had an urge to write some checks. I had neglected some important bills too long already. Surprising how many of the pesky things there were. The noon whistle blew as I was taking the checks to the mail box. I believed it might be a good idea to eat lunch at the restaurant and not have to wash dishes afterward. Might even save some time, too. (Well, it didn't.)

Then it was nearly time to go to the hospital, so I went there and stayed till three and had a talk with the doctor. The rain was still falling as I left, and recalling that there was to be a GSOC field trip on Sunday, I decided to buy a rubber raincoat. When I got to the store I found that they cost more than twice what I had paid for my last one. Maybe my old cravenette would still shed a light shower. I thought it would be worth risking. Then I saw a pile of electric blankets and stopped to finger them and to read some of the literature about them. I had been considering the purchase of an electric blanket for several years, and recently one of my fellow workers had taken the plunge and was enthusiastic about the comfort of sleeping under one. There were marked down about three percent (an added reason for prompt decision) so I hunted up a clerk and walked out with the coveted possession, buying a sack of popcorn on the way back to the car.

I could pass the home of Bertha's sister on the way home. I really owed it to her to tell her how Bertha was getting along, so I stopped for a 15-minute visit, and ended by taking her to dinner, after which I really did get back home.

Having eaten more than I needed I had no ambition to make any prints, or do anything else but read. So I read till bedtime.

Result: No cleaning in the yard or in the house. No prints made or negatives inspected. No letters written. Apples and prunes undisturbed. The stack of papers higher by several issues.

And on Sunday, what a wetting I did get without that rubber coat and no fossils or photographs!

O.E.S.

GEOLOGICAL NEWS LETTER

OFFICIAL PUBLICATION OF THE



PORTLAND, OREGON

November 1951

GEOLOGICAL NEWS-LETTER

Official Publication of the

Geological Society of the Oregon Country

703 Times Building, Portland 4, Oregon

POSTMASTER: Return Postage Guaranteed

GEOLOGICAL SOCIETY OF THE OREGON COUNTRY

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SOCIETY OBJECTIVES

To provide facilities for members of the Society to study Geology, particularly the geology of the Oregon Country. The establishment and maintenance of a library and museum of geological works, maps, and specimens. The encouragement of geological study among amateurs. The support and promotion of geologic investigation in the Oregon Country. The designation, preservation, and interpretation of important geological features of the Oregon Country. The development of the mental capacities of its members in the study of geology and the promotion of better acquaintance and closer association between those engaged in the above objectives.

SOCIETY ACTIVITIES, 1951 - 1952

EVENING MEETINGS: Formal lectures or informal round table discussions, on geological subjects, on the second and fourth Fridays of each month, at Public Library Hall, S.W. Tenth Avenue and Yamhill Street. 8:00 P.M.

FIELD TRIPS: Usually, one field trip is scheduled for each month.

LUNCHEONS: Informal luncheons, with geologic motif, each Thursday noon, at Chamber of Commerce, 824 S.W. Fifth Avenue. 85¢ per plate.

PUBLICATION: The GEOLOGICAL NEWS LETTER, issued once each month, is the official publication of the Society.

MEMBERSHIPS

A Member shall be a person at least twenty-one years of age who is interested in and supports the aims and objects of the Society and who has been recommended by the membership committee. A regular membership comprises: (a) a single person, or (b) a husband and wife, with children under 18 years of age. A Junior Member shall be a person under twenty-one years of age, with like qualifications and recommendation. Each membership receives one subscription to the Geological News Letter.

Annual dues are \$3.50 for residents of Multnomah and adjacent counties, \$2.50 for others, and \$1.50 for Junior Members. Remittances should be made payable to the Society. Applicants for membership should submit an application form, and remittance for dues, to the Secretary.

CALENDAR, November 1951

November 1, Thursday - Weekly noon luncheon

November 8, Thursday - Weekly noon luncheon

November 9, Friday - Regular evening meeting. Library Hall, 8:00 P.M.
Roundtable discussions. Third in a series of rock
studies, with emphasis on elementary rock microscopy.
Members are urged to bring geologic specimens for observation and discussion.

November 15, Thursday - Weekly noon luncheon.

November 22, Thursday - Thanksgiving Day. No noon luncheon.

November 23, Friday - No regular evening meeting.

November 29, Thursday - Weekly noon luncheon.

No field trip is scheduled for November.

REPORT ON GSOC FIELD TRIP TO EUGENE

October 20-21, 1951

This field trip possessed most of the elements which make for a successful geologic outing. The weather was good, with no rain except a light sprinkle during Sunday lunch time. The trip leader, Paul W. Howell, as Resident Geologist on the Lookout Point project, was particularly well qualified to point out interesting localities and describe geologic features.

Everyone made full use of the opportunity to acquire numerous specimens. Saturday afternoon was spent in collecting fossil wood and beta-quartz crystals at the Hills Creek locality. On Sunday, the first stop was at Rattlesnake Creek to examine a high gravel deposit which contained numerous pieces of obsidian. Then came a short stop at the locality where realgar-orpiment sagenite and stibnite sagenite have been discovered. No specimens of these interesting materials were found, however. Next came a railroad cut above Dexter to observe water-lain tuffs and collect fossil leaves.

Lunch time was spent at the viewpoint above Lookout Point dam. The aggregate plant, the concrete batch plant, and the high cableway for concrete placing were observed. Concrete forming the lower part of the spillway and earth-fill work on the left abutment gave some indication of how the finished dam would appear. Mr. Howell distributed, as souvenirs to those present, pieces of elephant-type tusk found in gravel in the foundation area and pebbles of a heavy black magnetic rock also found in the lowermost gravels there.

The balance of the afternoon was spent driving along part of the railroad relocation grade, with frequent stops to examine pyroclastic or other rock types and other geologic features or to collect specimens of zeolites, quartz, calcite, jasper, etc.

Those who made the trip were the Bushbys, the Macnabs, the Simons, the Wilsons, Mrs. Gordon, and Messrs. Cole, Dodson, Green, Jones, and Ohmart.

F.EW.

THE KENSINGTON STONE

Runic inscriptions on the much-discussed Kensington stone supposedly left in central Minnesota near the middle of the 14th century by a band of Norse adventurers, have been subjected to an intensive critical examination by Dr. William Thalbitzer, Danish ethnologist and one of the foremost living authorities on runes.

Hitherto Dr. Thalbitzer, together with most other Scandinavian runic experts, had considered the stone as fraudulent. But after the present study, and in the light of later discoveries, he reports: "I cannot but waver in my doubt....It seems to me that, after all, the inscription may be authentic."

Dr. Thalbitzer's report on his more recent analysis of the runes which brought this change in his viewpoint has just been published by the Smithsonian Institution.

The stone was found in 1898 near the village of Kensington, Minnesota, by a Swedish farmer named Olof Ohman while grubbing trees on a hill, formerly an island in a lake that has now disappeared. The stone was held by the roots of an aspen, and there was evidence that it had been there for many years. The runes engraved on it read in translation: "Eight Goths (Swedes) and 22 Norwegians on exploration journey from Vinland westward. We had camp by two skerries on day's journey north from this stone. We were and fish(ed) one day. After we came home (we) found 10 (of our) men red with blood and dead. A.V.M. (Ave Virgo Maria) save (us) from evil. (We) have 10 men by the sea to look after our ship(s) 14 days' journey from this island. Year 1362."

The runes are clearly carved and easy to read - altogether too easy, it seemed to runic scholars at first. Even aside from the grammar, there were reasons for doubt. It was known that there had been in the district about the time of the discovery a Swedish schoolteacher, an unfrocked clergyman, who had been a friend of Ohman. He was said to have had a Swedish textbook in which a runic alphabet was printed. Since there are some words in the inscription surprisingly similar to English, it looked at the time as if it were the work of a clever but rather unscrupulous man with no expert knowledge of runes or of the old Norse or Icelandic languages. The numerals and the date were especially sources of doubt.

Disbelief in the inscription's genuineness was nearly universal at the time, but since then defenders have appeared, foremost among them being Hjalmar R. Holand, of Ephraim, Wisconsin, who made intensive studies and has written extensively on Scandinavian antiquities. Also there have been major advances in linguistic studies, and discoveries of old documents in the Scandinavian countries themselves. In this Dr. Thalbitzer has been a leader. Mr. Holand advanced the thesis that the rune carver was himself a scholar and an expert who had formed part of the Swedish contingent of an expedition that left Norway in 1356 under the leadership of a certain Powell Knutsson. Its purpose was to find and restore to Christianity the lost Norse colonies on the west coast of Greenland. How part of this expedition might have penetrated as far as Minnesota remains uncertain, but it is within the bounds of possibility.

Dr. Thalbitzer also reports on a runic stone of roughly the same period found on the small island of Kingigtorsuaq 10 miles north of the present village of Upernavik in West Greenland - presumably left by another exploring expedition. No doubt ever has been raised as to the genuineness of that stone. Its language tends to support the authenticity of the Kensington stone.

The original Kensington stone was on exhibition at the U.S. National Museum in Washington from February 17, 1948, to February 25, 1949, when it was returned to the Alexandria (Minn.) Chamber of Commerce. The Smithsonian Institution has taken no position with regard to its authenticity, but felt that its presence in Washington would provide runic scholars a further opportunity to study it. A full-size replica is now on special exhibition in the National Museum. (From the Smithsonian Institution, September 23, 1951.)

* * * * *

YOSEMITE VALLEY DIORAMA

The Smithsonian Institution opened today a new dioramic exhibit depicting Indian life in the Yosemite Valley, California, as it was a century ago. This display commemorates the centennial of the discovery of the region now included in Yosemite National Park. It completes a new series of exhibits in the U.S. National Museum interpreting California Indian customs.

In 1850, Indians descended from the Sierra Nevada to attack and plunder gold-mining camps and trading posts on the Merced and Fresno Rivers. The miners learned that their attackers were Grizzly Bear (Yosemite) Indians, who boasted of their "deep valley in which one Indian is more than ten white men." The Whites determined to pursue the Indians to their valley home and "smoke out the Grizzly Bears from their holes." They organized a volunteer force, known as the Mariposa Battalion. In March 1851, units of this force entered the valley in search of Yosemite Indians, only to find that they had escaped. Lafayette H. Bunnell, a young member of this party, who was impressed with the unusual beauty of the valley, urged that it be named Yosemite, after the Indians who had lived there.

There were nine small Indian villages totaling some 450 people in the Yosemite Valley in the middle of the nineteenth century. Maria Lebrado, the last surviving Yosemite Indian, died April 20, 1931, at an age of more than 90 years.

The new diorama in the U.S. National museum repeoples the Yosemite Valley with these inhabitants of a hundred years ago. The miniature Indians (the largest less than 9 inches high) and accessories were created in the Museum's anthropological laboratory by A. Joseph Andrews and John Anglim, exhibits preparators, who took infinite pains to reproduce an accurate, realistic view. In the background rise El Capitan, Bridal Veil Falls, and Half Dome, landmarks familiar to millions of present-day visitors to Yosemite National Park. In the foreground is a village of conical lodges formed of slabs of incense cedar bark, which were the Indians' homes. The women's costume is limited to skirts of deerskin. Men wear breechclouts of the same material. The Indians lived by hunting deer in the surrounding mountains, catching fish in the swift-flowing streams, and gathering plant foods in season. Acorns, stored in brush granaries and pounded into meal with rough stone pestles, were an important food. The diorama depicts women and children gathering acorns in autumn. Two hunters are returning to camp with a deer killed by their arrows. One hunter wears a deer-skin disguise covering his head and back, under which he approached his quarry closely before killing it. An old man, seated on a log, is making hunting arrows pointed with black obsidian, while a small boy watches. An old woman skillfully weaves a burden basket from willow stems. Another woman is placing fire-heated rocks in a watertight basket to cook acorn soup. (From the Smithsonian Institution, September 30, 1951.)

NEW PUBLICATIONS BY THE STATE DEPARTMENT OF GEOLOGY

Three new reports, Bulletin 14-D and Short Papers 21 and 22, have been published by the State Department of Geology and Mineral Industries. Bulletin 14-D, the most recent in the series of Oregon metal mines handbooks, deals with the thirteen counties of northwestern Oregon. For each county there is a generalized description of the geography and geology followed by a detailed report on the history, production, and geology of each mining property. Information for this bulletin has been under compilation by members of the Department staff since 1938. The bulletin contains 166 pages, 8 maps, a bibliography, and sells for \$1.25.

The two Short Papers are: No. 21, "The lightweight aggregate industry in Oregon," by Ralph S. Mason, priced at 25 cents, and No. 22, "Preliminary report on tungsten in Oregon," by Harold D. Wolfe and David J. White, priced at 35 cents. The report on lightweight aggregates is a summary of the Department's field and laboratory work on pumice, perlite, expanded shale, volcanic tuff, and other lightweight rock materials used in the building industry. The tungsten report describes the occurrences of tungsten in southwestern and northeastern Oregon with particular emphasis on the two new deposits discovered in 1949 near Ashland.

LUNCHEON NOTES

September 27, 1951

Those present at the September 27 luncheon were Mrs. Conner, Miss Henley and Messrs Baldwin, Elder, Erickson, Keen, Libbey, Schminky, Stanley, and Stevens. . . . Three postcards from Mr. and Mrs. Simon, who were on a vacation trip northeast of Portland, reported much of interest to them, but as you know, they are interested in many, many things. . . . As there were no geological specimens, Miss Henley called attention to a green hydrangea and some acceptable specimens of maple panocha. . . . Mr. Erickson mentioned a book: "The Seas Around Us," and Dr. Stevens called attention to a symposium on Mountain Building in the last issue of the Transactions of the Geophysical Union.

October 11, 1951

Leo Simon had just returned from an interesting trip into southwestern British Columbia where he had been successful in talking some mine officials out of interesting specimens, among which were a bottle of bright-colored gravel and an attractive group of pyrite crystals in dolomite from the Kicking Horse canyon. . . . Rudolph Erickson had fossil shells from Warm Springs. . . . Tom Matthews told about the region of Inyokern and Trona, California, where valuable salts are pumped from lake beds and an equal volume of fresh water must be pumped back to keep the crust over the lake at a constant level. . . . There were present Vice President May R. Bushby and Messrs. Baldwin, Bushby, Erickson, Keen, Libbey, Matthews, Schminky, Simon, Stanley, Stevens, and Vance.

October 18, 1951

Miss Stevens, who had not met with the luncheon group for some time, was present with a box of stones from Glacier National Park and several books about that location. . . . Leo Simon had been with the Agate and Mineral Society's excursion to the Friday Ranch. He brought specimens of a green material from that locality, but if he was successful in getting any valuable agates he kept that information confidential. . . . Those present were: Vice President May R. Bushby, Miss Stevens and Messrs. Baldwin, Bushby, Erickson, Keen, Libbey, Matthews, Schminky, Simon, Stanley, and Vance.

GSOC MONTHLY MEETING - October 12, 1951

The monthly meeting of the Geological Society of the Oregon Country was held in Library Hall at eight o'clock P.M. October 12, 1951, with about forty members and guests present.

President Ford Wilson brought a small ginkgo tree and a general discussion of the history and habitat of ginkgo trees followed its display. He also had some specimens of petrified and natural ginkgo woods. . . . The president talked about methods of preserving delicate geological specimens and had a can of Kyrolon plastic spray, colorless and grainless, the material which he uses to protect delicate materials from atmospheric action. . . . Many specimens of obsidian and welded tuffs which were inspected under a 100-power microscope. It seems likely that after a few more meetings of this kind there is likely to be a boom in the microscope business locally. . . . Mrs. Barr exhibited several zeolites from a locality north of Yacolt. . . . A. W. Hancock brought a "dud" from the agate beds at the Priday ranch. This, he said, was the same material which encloses the agates, but is a solid mass of only the rough rock which for some reason had never formed a cavity in its interior for the agate-forming liquids to deposit their loads. (This, you will understand, is the editor's crude manner of trying to state a scientific fact which he was not clever enough to get into his notes verbatim.)

O.E.S.

ANOTHER DAY

By
Elmore Rosenfelt

Bitter disappointments sometimes turn out to be blessings.

The last time you heard from me I was bemoaning, among other things, my inability to get some rotten prunes and apples into the compost pile. I have since been told that such additions to the decaying compost are detrimental to the process and to the soil to which the compost may later be applied. Now, as I don't know how many other things may be equally injurious to the soil, I have not added anything more to the pile. Ain't I the lucky guy?

And speaking of being lucky, and there is really no other term that expresses the meaning so exactly, I had gradually allowed my better judgment to overcome my nomadic tendencies, and nearly succeeded in convincing myself that it would be wiser to stay at home the past weekend and catch up on assembling matter for the News Letter instead of taking part in the trek to Eugene and vicinity, especially since Mrs. Owen had sent word that if the material were not in her hands promptly the November issue of this magazine might be delayed by the moving of her office until its usefulness (if any) would approach the vanishing point. All of this leads us up to Friday evening when I returned from work and opened my front door upon the Friday surprise which the mail carrier pokes through the mail slot.

The first thing to catch my eye (even before an envelope with a welcome check) was a postal card written in bright green ink: "Dear Mr. Stanley: Our plans are quite definite now and we plan to leave here some time Friday A.M. and will see you Friday evening. Then we plan to leave Portland Sunday morning---" And just as I laid the card on the table (I follow the general practice of laying my cards on the table.) the phone rang and Mr. Parkhurst said they were already settled in a trailer camp, and how would be the easiest way to reach my house?

We jockeyed the conversation back and forth and finally settled on the plan of eating our suppers where we were and getting together for a talkfest and extended picture show at eight.

Now the Parkhursts had never been in my home and there were certain aspects of it that I did not wish them to see, so to quote from Lord Byron, "then there was hurrying to and fro-----and whispering-----they come! they come." For I suddenly realized the truth of the words: "There is much that should have been done which is still undone."

However before the appointed hour I had made the front part of the house look livable and had put up the beaded screen in front of the opening into the room containing my typewriter and desk to shield its disorder from unaccustomed eyes. I had also set up the picture projector and focussed it on the screen and assumed a recumbent posture on the davenport before the doorbell sounded.

The last time I had seen these people before was in the province of Quebec a year ago when they were standing by a country pig sty making a color portrait of some pink pigs. We had been guests at the same hotels on two nights and had passed and repassed each other along the road for many miles. You have no idea how strong the desire to see a picture of a pink pig can grow upon a person in a year.

Of course there were other pictures--hundreds of them-- that they had taken on the Gaspé trip and on other journeyings through the South and in Mexico, and there was much verbal comment, relevant and irrelevant in the course of that evening and of Saturday evening, and the Sunday morning breakfast in the trailer. They even broke down my resistance to the point of gaining entrance into the darkroom and the "empty room" where books and pictures and spare cameras are to be seen, and where the copying camera is permanently located ready for its annual job of making a Christmas card negative. Being enthusiastic amateur photographers, they were trusted to overlook shortcomings in general housekeeping and to confine their scrutiny to things photographic.

Not wishing to have my guests waste their pictures on me alone, I invited two other enthusiasts, one of whom handed me an entry blank to send with color slides to an international color slide exhibit. That was very nice of him and I appreciated his thoughtfulness. But the entry blank would be useless if not in the mail before Saturday evening. You can see what a spot I was in. It would appear ungrateful if I were to slip the blank into the stove and devote my time to pressing duties, and besides, the idea of doing a bit of exhibiting had been growing upon me for some days, so I decided to pick our four slides and get them in the mail and quit worrying. There were three boxes on the table, each containing about a hundred slides that we had been looking at. Four would be allowed in the exhibit if they were of sufficient merit. It should be a very simple matter to select four good slides -- the four best.

I pulled down the window shades, set up the projector and screen, and proceeded with the process of elimination. When I had finished the first inspection I had thirty slides of equal merit, I thought. The thirty went through the projector again and were divided equally into "good" and "reject" piles. Seven of the "good" ones were rejected on the next run. Then I got the portraits of the judges and studied them and read their photographic background to try to ferret out their likes and dislikes. With this "dope" swirling through my brain I took the eight equally excellent pictures to the darkroom and spread them out on the glass of the printing box, turned on the white light and shuffled them around until I felt that I had selected four which had a chance of passing the judges. Time and the United States mail will tell whether I am a good photographer and a good reader of character from portraits, or both, or neither. And all this falderal was keeping me from my main task of editing material for the Geological News Letter. Oh, well!

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| President: | Mr. Ford E Wilson | 11844 S.E. Pine Street | 16 | |
| Vice-Pres: | Mrs. May R. Bushby | 1202 S.W. Cardinell Drive | 1 | CA 2123 |
| Secretary: | Miss Ruby A. Zimmer | 805 S.E. 60th Avenue | 15 | LA 8319 |
| Treasurer: | Mr. Norris B. Stone | Rt. 1, Box 179-A, Oswego, Oregon | | Oswego 6531 |
| Directors: | Mrs. Leslie W Bartow, (1952) | Mr. Leo F. Simon, (1952) | | |
| | Dr. Edwin T. Hodge, (1953) | Mr. Louis E. Oberson, (1953) | | |
| | Mr. E. Cleveland Johnson, (1954) | | | |

Staff of Geological News Letter

| | | | | |
|-----------------|--|----------------------------|----|---------|
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| Asst. Editor: | Miss Margaret L. Steere | 6203 S.E. Scott Drive | 16 | BR 2276 |
| Assoc. Editors: | Mrs. Leo W. Haven, Mr. F. W. Libbey, Mr. A. D. Vance, Mr. F. L. Davis | | | |
| Bus. Mgr.: | Mr. Raymond L. Baldwin | 4804 S.W. Laurelwood Drive | 1 | CH 1452 |

SOCIETY OBJECTIVES

To provide facilities for members of the Society to study Geology, particularly the geology of the Oregon Country. The establishment and maintenance of a library and museum of geological works, maps, and specimens. The encouragement of geological study among amateurs. The support and promotion of geologic investigation in the Oregon Country. The designation, preservation, and interpretation of important geological features of the Oregon Country. The development of the mental capacities of its members in the study of geology and the promotion of better acquaintance and closer association between those engaged in the above objectives.

SOCIETY ACTIVITIES, 1951 - 1952

EVENING MEETINGS: Formal lectures or informal round table discussions, on geological subjects, on the second and fourth Fridays of each month, at Public Library Hall, S.W. Tenth Avenue and Yamhill Street. 8:00 P.M.

FIELD TRIPS: Usually, one field trip is scheduled for each month.

LUNCHEONS: Informal luncheons, with geologic motif, each Thursday noon, at Chamber of Commerce, 824 S.W. Fifth Avenue. 85¢ per plate.

PUBLICATION: The GEOLOGICAL NEWS LETTER, issued once each month, is the official publication of the Society.

MEMBERSHIPS

A Member shall be a person at least twenty-one years of age who is interested in and supports the aims and objects of the Society and who has been recommended by the membership committee. A regular membership comprises: (a) a single person, or (b) a husband and wife, with children under 18 years of age. A Junior member shall be a person under twenty-one years of age, with like qualifications and recommendation. Each membership receives one subscription to the Geological News Letter.

Annual dues are \$3.50 for residents of Multnomah and adjacent counties, \$2.50 for others, and \$1.50 for Junior Members. Remittances should be made payable to the Society. Applicants for membership should submit an application form, and remittance for dues, to the Secretary.

It is my great pleasure to extend Holiday Greetings to all officers and members of the Geological Society of the Oregon Country. May the spirit of Christmas be yours in full abundance. For the New Year, 1952, I wish for you the best in health, the joys of living, pleasant associations and good collecting.

Ford E Wilson

Ford E Wilson, President.

December 1951 Calendar

December 6 Regular Noon Luncheon
Thursday

December 13 Regular Noon Luncheon
Thursday

December 14 Regular Evening Meeting, 8:00 P.M. Our speaker will be
Friday Mr. Leo F. Simon, who will discuss highlights of a geological
 trip in southwestern Canada. He will show kodachrome slides
taken during his recent trip and also have an exhibit of specimens. To hear
this talk by genial Leo is a "must" for every GSOC member.

December 20 Regular Noon Luncheon
Thursday

December 27 Regular Noon Luncheon
Thursday

* * * * *

NEW MEMBERS

| | | <u>Zone</u> | <u>Phone</u> |
|---------------------------------|-----------------------|-------------|--------------|
| Mr. and Mrs. Roland G. Eisenman | 8502 N. Seward Avenue | 17 | TW 1992 |
| Mr. and Mrs. Joe P. Merrifield | 626 N.E. 71st Avenue | 16 | KE 8276 |

NEW JUNIOR MEMBER

| | | | |
|-------------------------|---------------------------|--|---------|
| George R. Bouthillier . | 4332 N.E. Skidmore Street | | TR 1372 |
|-------------------------|---------------------------|--|---------|

ZIRCONIUM

From Charles A. Sprague's daily column "It seems to me" in the Salem Statesman we quote the following information about the work of the laboratory of the U.S. Bureau of Mines in the production of zirconium.

Our neighboring city of Albany is many miles distant from any mining district, but it has become an important center in the mining world. This is due to the establishment of a laboratory of the U.S. Bureau of Mines in the buildings of old Albany college. This was fruit of the labors of Sen. Rufus Holman during his term as U.S. senator. Bonneville Power Administration faced the problem of disposing of electricity energy from Bonneville and Grand Coulee plants and saw in a light metal industry possibilities not only for big power consumption but for industrial development of the northwest. So BPA sought to foster metallurgical research. Albany college had removed to Portland and was anxious to sell its former campus and buildings. Congress, at the urging of Holman, made an appropriation and the purchase was made. The laboratory has been at work now about seven years and already has made important contributions to science and industry.

At present it is not only operating a laboratory for research but also a plant producing zirconium metal. It is the largest producer of this metal in the country, almost the only one. At present its output goes to the atomic energy commission.

Zirconium is one of the "wonder" metals. Its weight is about 80 percent that of steel. Its qualities resemble stainless steel and as it comes into greater production it will replace stainless steel in many uses. The metal resists heat and radiation and corrosion which makes it desirable for jets and rockets. The metal is fairly abundant in the earth, more so than nickel, copper, lead or zinc. It is common in sand as zircon. At present the raw material used comes from Florida sands, but when a new plant is finished at Albany the famous "black sands" of the south Oregon coast may be used. Like aluminum, zirconium has to be reduced and refined from the minerals in which it is locked, and that is a long and expensive process. The cost now is about \$20 a pound.

The process used at Albany was developed by William J. Kroll, who was on the staff at Albany. In an article in Scientific American several months ago Dr. Stephen M. Shelton, head of the laboratory, described the process thus:

"The Kroll method, a magnesium reduction process, is carried on amidst a maze of complicated machinery and control instruments. The first step is reaction of the reddish-brown zircon sand concentrate with graphite in an electric arc furnace. This drives off the silicon and produces zirconium carbide, which in turn is heated in another furnace and treated with chlorine gas to form zirconium tetrachloride. This product, after a treatment to remove impurities (chiefly chlorides of iron), is then subjected to a reduction process which is the essential step of the method. The zirconium tetrachloride is heated in a helium atmosphere in the presence of molten magnesium metal so that the chloride reacts with the magnesium. The result is a spongy mixture of pure zirconium and magnesium chloride. By distillation under vacuum the magnesium chloride and any excess magnesium are removed, leaving the purified zirconium sponge. The zirconium then can be melted into metal ingots."

. Complicated process, you can see.

The Albany laboratory is busy with other work too. It is doing research in connection with a nickel ore from a mine near Riddle, Oregon, being opened up by the M. A. Hanna Company of Cleveland and with ferrous ores from near Scappoose. A batch of clay from North Carolina is being worked on in an attempt to develop an aluminum compound for use as an alloy. The laboratory has a spectroscope for mineral analysis, also a "library" of mineral samples which are helpful to prospectors and students of minerals.

The special facilities at the Albany laboratory are high heat from electric energy and high pressure equipment.

To rural-minded dwellers in the Willamette valley a bureau of mines laboratory seems an oddity, and in a way it is. But the electric energy is available from a nearby substation of BPA; and minerals are shipped from all parts of the country, so the lab. doesn't have to be near a minemouth. It employes over 300 persons, many of them highly trained scientists, and they are an important addition to the business and professional and cultural life of the community.

BLONDIE*

October 19

A dog has moved in with us. It is cream colored, very thin, about the size of a coyote and looks like one, or like a wolf. It may go somewhere to eat, for Charles will not feed it, nor will he take it to the dog pound. It follows me around as though it wanted company and picked on me because I am another critter that is "feeble and old and gray." We make a good pair, but wouldn't amount to much ahead of a dog sled.

October 28

A week ago yesterday (which was Saturday) Charles phoned to the Humane Society to come and get "Blondie." "She looks at me and I can't stand it," says he. To me, that look on her wolfish face was one of calm alertness and nothing more.

The girl at the Humane Society office told him to tie the dog up and that they would get her on Monday. That being settled, Charles said: "Maybe we had better keep her. She seems to understand everything we say."

She slept out in the rain and would not go into the woodshed until Charles invited her in, spread a gunny sack and told her to lie down, which she did. No barking, fawning, or whining. Just kept at a respectful distance and watched me.

Then Charles went to the store to get something for her to eat. For some unknown reason he did not take his car, but walked, and the dog followed him. Charles said that she kept off the pavement, paid no attention to children, and in a dignified manner, submitted to the inspection of other dogs. Charles gave her a can of "friskies" which she ate and said nothing.

Monday the dogcatcher put a small cord around her neck and led her, unprotesting, to the car. He opened the car door. She got in and lay down.

*From personal letters to the editor.

"So live that when thy summons comes to join" etc.

"Thou go not like a quarry slave at night,
Scourged to his dungeon, but, sustained and soothed
By an unfaltering trust, approach thy grave,
Like one who wraps the drapery of his couch
About him, and lies down to pleasant dreams."

"Blondie's" uncomplaining patience is something for me to remember and copy. I am glad that I knew her. She probably was the pet of an old man who took her to the store for a bone; but she carried no identifying tags, so I may never know what became of her master.

OUR SOLAR SYSTEM

By combining the active membership of three societies interested in allied subjects Friday evening, October 27th, a fair-sized audience was assembled at Library Hall to get the inside information about matters far outside the everyday thinking of most of those present.

The Portland Astronomical Society furnished the program which broadened the conceptions of the universe previously held by most of us. The Portland Telescope Makers and Observers, a closely allied group, and the Geological Society of the Oregon Country were interested auditors.

President Ford E. Wilson of the G.S.O.C. opened the meeting and introduced C. A. Wood, secretary of the P.A.S. who in turn presented H. P. Haggart, president of the P. T. M. & O.

Your reporter located himself in the 9th row for satisfactory viewing of the motion pictures which were to come later, and found it to be a very unsatisfactory place for hearing the introductory remarks which apparently were addressed in strictest confidence to the first two rows. J. H. Karle, instructor in Astronomy at Lewis and Clark college, being accustomed to addressing students who may have been out late the previous evening making personally conducted observations of the firmament, was easily understood when he said: "We are here to learn about the little group we call our Solar System and its controlling mass, the sun."

Spectrographs of various stars were shown. Motion pictures depicting the relative positions and speeds of the planets, and the still more interesting activities of huge masses of incandescent gases on the surface of the sun, were accompanied by sound-track descriptive comments.

We, residents of the planet Earth who hold our sun in the highest esteem as the source of light, life, and power, received quite a jolt when we were told that it is rated as "Class G" in comparison with other suns in the Universe, and a little below average in size. We also learned that one of the stars in the constellation Orion has a greater diameter than the orbit of Mars.

Since being told that the sun is 329,000 times the mass of the earth, and looking back at the very small percent of the area of Oregon we have been able to explore since the organization of the G.S.O.C., it appears that gaining an intimate knowledge of the Universe will require much more than the allotted span of three score years, and all the additional time we can muster.

1951

President Wilson brought tears to the eyes of G.S.O.C. members who were unable to take part in the October field trip of his society by describing the trip in considerable detail. He told about finding thousands of quartz crystals and more petrified hard and soft wood than they were able to bring home; then added as a "punch line" the information that there will be no field trip in November unless one can be arranged to the carborundum plant in Vancouver.

OES

REPORT OF THE NOMINATING COMMITTEE

The nominating committee presents the following list of candidates for the offices of the Society for the year 1952. Opportunity will be offered later for additional nominations by the membership before the final vote is taken.

| | |
|---------------------------|--------------------|
| For President | Norris B. Stone |
| For Vice President | Raymond L. Baldwin |
| For Treasurer | Robert F. Wilbur |
| For Secretary | Mrs. Leo F. Simon |
| For Director, 3-year term | Rudolph Erickson |
| For Director, 2-year term | Albert D. Vance |

The members of the nominating committee are:

Mrs. Arthur C. Jones, Chairman; Leonard M. Buoy; Albert Keene; Thomas C. Matthews; and Robert F. Wilbur.

APPOINTMENT OF BANQUET CHAIRMAN

Mrs. Wm. F. Clark has been named general chairman for the Annual GSOC Banquet. All members are urged to give Mrs. Clark the utmost in cooperation in order to make this event, tentatively scheduled for March 14, 1952, an outstanding success.

Ford E Wilson

PERSONAL NOTES

H. P. Haggart, president of the Portland Telescope Makers and Observers, is making a 20-inch reflecting telescope at his home near Oregon City (Route 2, Box 190). He has already spent six years on the job which he expects to have completed next summer.

Dr. W. Claude Adams is author of a series of articles in "Paper Making" which have appeared in the Quarterly of the Oregon Historical Society. He hopes that these articles may be combined in book form later.

H. Mildred Stockwell is now a member of the staff of the Oregon Motor Association. She would be pleased to see the club emblem displayed on all cars bearing the G.S.O.C. bumper cards.

A GEOLOGICAL TRIP REPORT

The society trip caravan led by JASPER FLINT left the gathering point at 1:00 o'clock and headed south. They drove thirty miles, turned left, turned right and after several miles the leading car slowed down and finally stopped. BASAL STONE driving the next car also stopped, "Is this the place?" he asked. "No," said JASPER. "I wonder, STONE, if your wife knows where we are." "I think," said BASAL that we should have TUNDRA other way, but I'll ESKER." His wife, RUBY STONE said that he was correct, so after some back-tracking the road was located with the destination STRATA HEAD.

The usual clink of picks was heard and soon some RILL GNEISS specimens were being found. Mrs. CLAY and her small son, "BRICK" CLAY, toiled busily with the others. "My son," said Mrs. CLAY, "why did you wear such a DIRTY CHERT?" "Well, gee, Mom, it's SCHIST as SWALE I did. I'd get a clean one dirty in no time." After a while he called: "MIOCENE a pretty CRYSTAL but it broke." Soon there was a sharp cry from the youngster. "What's the matter?" called Mrs. CLAY. "Oh, I FELL and hurt MIOHIPPIUS," he said. "I VENT too fast. It was my FAULT."

This was one of two casualties. As Mr. ROLLIN HILL was MOUNTAIN a SLOPE he made a FALSE STEPPE, sprained his toe and dropped his false teeth, the TOPSET being broken and the BOTTOMSET WARPED so that they hurt his MOUTH.

Finally a halt was called for refreshments. While these were being DISSEMINATED and DEGRADED a little calf looked longingly ORE the fence while his MOTHER LODE. There were LAYER cakes, MARBLE cakes, and QUARTZ of ice cream, SODA biscuits, LIME and orange pop, ROCK candy, and other things. "Gosh!" said Lotta MUDD, "It's enough to MAGMA MOUTH WATER." "My teeth being broken sure makes it TUFF," said HILL. "You can GORGE on ICE cream," said Lotta, "even though you can't LEAF PRINTS on solid food."

The food was eaten, and as the MANTLE of darkness fell over the EARTH the cavalcade joined in the STREAM of traffic while the cow and calf switched their TALUS.

"Well," said the trip chairman, "everybody got GNEISS specimens, and that's what makes MESA pleased."

Carl Smith

NOVEMBER 9th MEETING OF THE
GEOLOGICAL SOCIETY OF THE OREGON COUNTRY

President Ford E Wilson asked the several guests who were present to introduce themselves and extended an invitation to them to come to future meetings. He then announced future meetings of the Society and of allied societies and gave assurance that our next banquet will not be of the foodless variety. . . . Mrs. Elizabeth Barr told about her specimens of copper ore that came from the vicinity of Washougal, Washington, and all present were asked to help themselves to them. . . . President Wilson then proceeded with his talk on the use of the microscope as a measuring instrument, and gave all present the chance to see just how easy it is to determine distances as small as one twenty-five thousandth of an inch. He makes the study of rocks remarkably interesting, and is likely to make petrographers of some of his auditors unless they have unusual powers of resistance.

OES

LUNCHEON NOTES

October 25, 1951:

Present and presiding was Mrs. Bushby with Leo Simon assisting on her left and President Ford Wilson on her right. Others present were Mrs. Conner, Miss Henley, and Messrs. Baldwin, Bushby, Erickson, Keene, Schminky, Stanley, and Vance - the weekly dozen. . . . President Ford Wilson told of the interesting two-day field trip to Hills Creek and the Lookout Point clan with only seven present from the G.S.O.C. and three others from Salem and vicinity. A rare deposit of tiny, but perfect, beta quartz crystals was explored and a new fossil leaf field was found. . . . A stop was made at V. D. Hill's shop on the way home. Various unfortunate combinations of circumstances, among which were visiting friends, rainy weather, and the necessity of an over-night stay away from home, prevented others from embarking upon the two-day trip. . . . May R. Bushby had a box of specimens; these included petrified wood, calcite crystals, and welded tuff from the field trip and a lovely slab of agate from Mr. Hill's shop. . . . Leo Simon had a piece of jasper from a large mass of that material, a bottle containing tiny quartz crystals, two heavy black pebbles and a piece of obsidian from the gravels at the dam site. The black pebbles contained some magnetite. . . . A. D. Vance distributed an assortment of rocks found in his garage, but earlier from Dr. Hodge's collection at his office - original source unknown at present. There was one piece of clay with realgar crystals, and some granitic rocks. . . . Mr. Keene's specimen, which had the appearance of petrified organic matter, remained unidentified. . . . Rudolph Erickson had specimens from Murderer's Creek on the South Fork of the John Day River. They are supposed to contain cinnabar. . . . Ada Henley called attention to an article in the October 1951 issue of The Desert Magazine about "Geodes in Lizard Gulch," by Harold O. Weight. The location is near Beatty, Nevada, and is complete with map of the locations and photographs of the geodes as well as a zebra-tailed lizard, an inhabitant of the gulch. . . . The Californians are indeed fortunate to have such a magazine as "The Desert" to acquaint them with locations of interesting deposits of gem stones and other geological specimens. The maps are a temptation for interested people from other states to follow in the footsteps (or should we say tire tracks?) of the authors of these articles. But it is a long journey from Portland.

OES

November 1, 1951:

Mrs. Erickson, the very able chairman of the 1951 picnic, reported that she had received a reply from the Portland Bureau of Parks to her letter thanking the Bureau for use of Mt. Tabor Park and picnic facilities there, and suggesting that a lower and wider stage would help future presentations of plays such as the G.S.O.C. perform. It stated that such improvements are on the Bureau's program and will doubtless be ready for use at our next picnic. . . . Ada Henley set off a small fusillade of stories with a strong political flavor not entirely geological. . . . She exhibited a nice specimen of smoky quartz and another slab containing opal from Virgin Valley, Nevada. . . . Leo Simon showed a section of rock from Idaho containing native copper. . . . Bruce Schminky brought some small yellow specimens for identification. They had been found in a jar among some piling along the Columbia River; not soft enough to be native gold, and not shaped like brass filings. Later they were classified by G. V. Elder as the waste from brazing operations. . . . May R. Bushby showed a slice of stibnite crystals in agate with orpiment from near Trent, Oregon. . . . Those present were: May R. Bushby, presiding; Mrs. Conner, Mrs. Erickson, Miss Henley and Messrs. Baldwin, Bushby, Erickson, Keene, Clarence Phillips, Schminky, Simon, Stanley, and Vance.

OES

November 8, 1951:

President Ford E Wilson took a few minutes of his too-short luncheon period to tell of future plans for G.S.O.C. and to ask all those present to cooperate with Mrs. A. C. Jones, Chairman of the nominating committee, by giving her suggestions on nominees for the various offices. He also asked for volunteer trip leaders for the short winter field trips, and for news items, personal notes, or scientific papers for use in the News Letter. . . . Mrs. A. C. Jones told of the vacation trip that she and Dr. Jones had made - the high point being Pikes Peak where the song, "America the Beautiful," was written by Katherine Lee Bates, Professor of English at Wellesly University in 1893, but was not published until about ten years later. She had some very nice kodacolor prints of Bear Lake, Utah; one of them showing Doctor Jones standing approximately where Jim Bridger may have stood long before the doctor was born. . . . R. L. Baldwin had some very pretty (and very delicious) specimens of grape jelly from eastern Washington County. The editor was permitted to take one glass home for further study and analysis and wishes to express his thanks to Mr. Baldwin, and his Mrs. for her part in the preparation of the specimens for examination. Some reasonably thin sections were made and tested on rolls, no microscope being available at the luncheon. . . . Post cards from Dr. Hodge, now in South Africa, were shown by their recipients, Rudolph Erickson and Leo Simon. . . . A. D. Vance told about the discovery of a petroglyph in the Columbia Gorge and its removal to its present location at the City Hall in Portland. It was found by Mr. Norma Seaman, an uncle of C. L. and E. A. Marshall, Portland Civil Engineers, while on a survey along the Columbia. The carvings were uncovered when he scraped off the wet moss before sitting on the rock to eat his lunch. The rock was transported to Portland by the O.W.R.R.&N.Co. and turned over to the Portland Museum. Mr. Wiegand, curator of the museum, had some anxious moments in stretching the meager funds at his disposal to cover trucking charges from the freight yard to the rock's present location. The Geological Society of the Oregon Country furnished a bronze plaque giving such information as it had, in brief form, but neglected to mention Mr. Seaman's part in the transactions. Mr. Seaman thinks the rock should lie flat, as it was when found, instead of standing on end. . . . Dr. W. Claude Adams had several interesting specimens from Guam and from Southern California. Since they were not edible the editor neglected to note further details. . . . There were present besides May R. Bushby, presiding officer, Mrs. A. C. Jones and Messrs. Adams, Baldwin, Bushby, Elder, Keene, Kelham, Schminky, Simon, Stanley, Stone, Vance, and Wilson.

OES

November 15, 1951:

Mrs. Jones had with her the 1951 supplement to the Smithsonian series, "Panorama of Science" containing an article by Dr. Donald B. Lawrence on "Glacier Fluctuation for Six Centuries in Southeast Alaska, and Its Relation to Solar Activity." She also brought a copy of "Calico Print" containing an article about the lost Pegleg Gold Mine. . . . F. W. Libbey asked for papers on chemistry, geology, and geography to be presented at the annual meeting of the Oregon Academy of Science. He is chairman of that section of the academy. . . . Leo Simon reported on the annual banquet of the Oregon Museum Foundation making those of us who forgot the date regret our carelessness. . . . There were present, Mrs. Bushby, presiding, Mrs. A. C. Jones and Messrs. Baldwin, Bushby, Keene, Kelham, Libbey, Matthews, Schminky, Simon, Stanley, Stone, and Vance.

OES
