

ALASKA GEOLOGY

Newsletter of the
Alaska Geological Society



Mapping Near-Surface Lithology in Alaska with Geophysics

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Several geophysical methods provide insight into subsurface lithology. Resistivity methods can delineate thaw bulbs, mass ice, discontinuous permafrost, and clay layers among other things. Ground-penetrating radar is able to map soil types and the bedrock surface, within the top 50 feet depending on site conditions. Seismic methods are often implemented to characterize bedrock competency as well as the depth to bedrock, especially for depths beyond what the GPR can reach. In this talk, I will present case studies using these methods as employed for projects within the great state of Alaska, including discussion of field work considerations unique to Alaskan remote sites. In addition to technical discussion, I'll show exciting pictures of what Alaska has to offer!

About the Speaker:

Dr. Esther Babcock received her Ph.D. in geophysics from Boise State University. Her geophysical work focuses on near-surface investigations for geotechnical and environmental applications, and specifically investigations using electrical methods. Dr. Babcock's geophysical field experience includes work throughout Alaska, Africa, Antarctica, Canada, and the lower 48. She has extensive expertise with advanced data processing, including proprietary waveform inversion algorithms and multi-offset radar-data analysis and interpretation.

AGS Meeting

Date & Time:	Thursday, January 25; Doors open 11:00 am, announcements 11:15 am, talk 11:30 am – 12:30 pm
Program:	Mapping Near-Surface Lithology in Alaska with Geophysics
Speaker:	Esther Babcock, Logic Geophysics & Analytics LLC, Anchorage, AK
Place:	BP Energy Center, Birch room - in person presentation. Virtual presentation via Google Meet.
Reservations:	Reservations are not required
Login:	For instructions on how to log in see AGS website: http://www.alaskageology.org/events.html
How to Join:	Join with Google Meet: meet.google.com/ngg-dmjq-wae or join by phone: (US) +1 385-374-0130, PIN: 708 346 500#

From the President's Desk:

Rewards of Volunteering

Alaska Geological Society Bylaws expressly prohibit AGS Officers and Board members from being compensated. Which means that AGS is utterly reliant on all-in volunteers.

Each year, AGS volunteers, put together a speaker program, publish a monthly newsletter, select students for scholarships, organize a Spring Technical Conference and analyze, budget, and approve financial spending, among numerous other tasks. Why are AGS members willing to donate time to these activities? I suspect the answer is that that AGS volunteers believe that what they are doing is worthwhile. This sense of worth brings meaning to their volunteer tasks.

The bottom line is that volunteering is worth it. The following AAPG Explorer article by Steven Goolsby, printed with AAPG and Steven's permission, nicely articulates the rewards that come with volunteering.

Sincerely,

Monte D. Mabry

President, Alaska Geological Society, 2023-2024

This article was originally published in the February 2023 issue of the AAPG Explorer. AGS is grateful to AAPG and the author for permission to reprint it in the AGS Newsletter.

The Immeasurable Rewards of Volunteering

February 2023 | Steven M. Goolsby

Professional and social peer networking was rated one of the highest membership values associated with the AAPG in a recent poll and is one of the primary reasons I have stayed an AAPG member for almost 50 years. Many of the great scientists of our past could not have succeeded without peer collaboration. Charles Darwin is quoted as saying, "It is the long history of humankind (and animal kind, too) that those who learned to collaborate and improvise the most effectively have prevailed."



Steven Goolsby

My wife and I were recently on a walk and passed several dark and empty office buildings. Those buildings were well lit and full of employees before COVID. We both wondered if life would ever return to the old "normal." She commented that the only reason the department she supervised retained the best nurses in the region was that they worked in close proximity with each other where they could interact and collaborate in treating their patients. Collaboration was the key. I immediately thought of the results of the recent AAPG membership poll.

I enjoy working remotely and using online software for AAPG meetings and I have met some wonderful and interesting people this way. We have accomplished a lot with these meetings, but the meetings can be frustrating because it is harder to connect through a computer monitor than it is when you meet face-to-face.

There is no better place to interact face-to-face with a large number of your geoscience peers than at one of AAPG's large conferences. Conference social events are great venues to interact with your peers informally and to find out what they are doing in your area of expertise and employment. This often leads to the discovery of new scientific and technical innovations you can use to advance your education and career. The more interaction you have with your peers, the more likely it is you will glean that one kernel of wisdom that will spark one of your own ideas and lead you to business or scientific success.

Unfortunately, many of the people who attend our conventions miss out on one of the great opportunities it provides to meet more of their peers. Those opportunities are the business meetings and social events for the volunteers working on behalf of AAPG. Many of our committees and governance groups have face-to-face business meetings during the conventions. If you are on an AAPG committee, on the Advisory Council, in the House of Delegates, in the leadership of a division, or in any of our many other volunteer groups working to help AAPG, you will likely meet some of your peers in person during a convention. Formal and informal social events are often organized around these volunteer groups, which are also great venues to interact with other volunteers. I have found that these volunteer events have led to lasting friendships with some of the outstanding business and scientific leaders in the geosciences.

So, the bottom line is that volunteering is sometimes worth its weight in gold. There is a reason many of us have continued to volunteer to help AAPG for many years, sometimes decades. There is personal satisfaction in that you help promote the science and business that you love, but the rewards of personal and close interaction with your peers often far outweigh anything else. Such collaboration can be priceless. Amy Poehler said, "Find a group of people who challenge and inspire you, spend a lot of time with them, and it will change your world." I agree.



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SCHEDULE FOR 2023-2024 LUNCHEON SPEAKER SERIES



MONTH	DATE	SPEAKER	ROOM*	"TITLE"/THEME
Septmeber	9/14/23	Jake Colvault	Birch	"Shelf-margin reservoir analogs for the Brookian Sequence, Alaska"
October	10/30/23	Elizabeth Miller	Birch	"The Brooks Range, Alaska: An orogenic belt with a complex history"
November	11/28/23	Bernard Coakley	Birch	"Chukchi edges - Understanding the history of the Arctic Ocean through mapping the Chukchi Borderland and the adjacent Canada Basin"
December	12/14/23	Trystan Herriott	Birch	"High-precision, zircon-based chronostratigraphy in Alaska: Advances and insights from Mesozoic strata in the Cook Inlet forearc and Colville foreland basins"
January	1/25/24	Esther Babcock	Birch	"Mapping Near-Surface Lithology in Alaska with Geophisic"
February	2/15/24	Aeon Russo	Birch	Significance of High Latitude Submarine Groundwater Discharge
March	3/21/24	Peter Illig	Birch	Mineral Exploration/Mining
April	4/29/24	Josh Long	Birch	Brookian Stratigraphy, North Slope/Beaufort Shelf
May	5/21/24	Dave Larimer	Birch	Alaska Mining

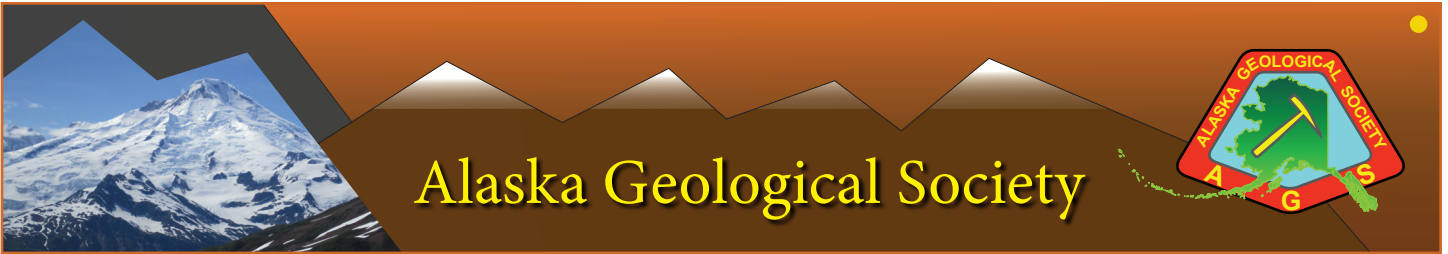
* Location for in-person viewing of presentations will be at the BP Energy Center, 1014 Energy Court, Anchorage, AK 99508



AGS Members,

The AGS Pathfinders in Alaska Geology Committee wishes to thank those who made nominations for the 2024 Pathfinders Class. Nominations are now open for the 2025 Class. A bit of history about this exciting program and the nomination forms and instructions can be found on the AGS website: <https://www.alaskageology.org/pathfinders.html>

Also, if you are interested in joining the Pathfinders Committee, please contact Tom Homza at 907-301-2851 or Thomas.homza@shell.com



Alaska Geological Society

VOLUNTEERS NEEDED FOR AGS SCHOLARSHIP COMMITTEE

AGS is looking for volunteers to participate on the AGS and Richter Scholarship Committees. The scholarship applications are due Feb. 1, 2024. Committee members read the scholarship applications during February (they are not long or complicated), fill out a judging scoresheet, and meet for about 1.5 hours over lunch in late February to select students for awards (lunch is provided). If you are interested in this very rewarding volunteer opportunity, please contact Sue Karl via email: skarl@usgs.gov. You will learn about all the exciting new earth science projects happening in Alaska and help to grow the career of a young earth scientist. This will be a fully enjoyable and worthwhile use of your time!

SEEKING DONATIONS FOR AGS SCHOLARSHIP FUNDS

This is a challenging year for students at all levels, and geoscience students in the universities need our support more than ever. When you pay your membership dues this year, please consider a contribution to an AGS scholarship fund. You can also contribute to AGS scholarships through Pick,Click,Give when you apply for your Alaska Permanent Fund Dividend.

The Alaska Geological Society is a 501c3 nonprofit organization and all contributions to these scholarship funds are tax deductible.

ALASKA GEOLOGICAL SOCIETY SCHOLARSHIPS

The Alaska Geological Society offers two scholarship awards to graduate and undergraduate students conducting geoscience research projects in Alaska:

*The Alaska Geological Society Scholarships
The Don Richter Memorial Scholarship*



Scholarship information and applications are available online at:

www.alaskageology.org

The Alaska Geological Society, Inc.
P.O. Box 101288
Anchorage, Alaska 99510

Applications for Alaska Geological Society Scholarships

<https://www.alaskageology.org/ags-scholarship.html>

Application Deadline

February 1, 2024

Submit Documents via Email:

Email all documents by midnight February 1, 2024 to: scholarships@alaskageology.org with the subject line "2024 AGS Scholarship"

Or via U.S. mail:

AGS Scholarship committee, Alaska Geological Society, P.O. Box 101288, Anchorage, AK 99510

Scholarship grant recipients will be notified by March 25, 2024.

Contact for questions: Sue Karl

Phone: 907-441-8010

Email: smkarl107@gmail.com

Eligibility:

1. Full time enrollment at an accredited institute of higher education.
2. Status as a BA, BS, MS, or PhD candidate in geoscience or equivalent degree program.
3. Project or thesis/dissertation topic focused on Alaskan geology or related geoscience topic.
4. Having received the AGS Scholarship no more than two (2) times previously. Previous awardees shall be additionally required to provide the Scholarship Committee with a summary of how previous funds were used.
5. Applicants for Alaska Geological Society scholarships may not be related to any member or to any family member of the Scholarship Committee or Board of Directors of the Society.

Applications Must Include:

1. AGS Scholarship application form:
http://www.alaskageology.org/uploads/1/1/9/5/119566579/ags_scholarship_application_form.pdf
2. A cover letter describing your personal and educational career goals, your interest in the Earth Sciences, your financial need, and how you would use the scholarship funds. Examples of how to apply the funds include, but are not limited to, field camp, field work, research/lab fees, or tuition and books. If you are a past scholarship recipient, please include an update on how you used previous AGS funding.
3. A project description if you are an undergraduate student or copy of your thesis proposal if you are a graduate student (please limit to 5 pages of text plus figures).
4. A minimum of two letters of recommendation from those familiar with your academic record. A third letter may be included if it contains important additional information.
5. A copy of your transcripts from your current institution. If you are a first year graduate student, please also send a copy of your transcripts from your previous institution. A formal confidential transcript is not required; a copy or unofficial transcript will suffice.

Students may apply for both the AGS and the Richter Memorial scholarships in the same calendar year. If a student wishes to apply for both scholarships, he/she must submit two separate cover letters that explain the relevance of their project to the AGS or Richter scholarship awards, addressed to the respective scholarship committees. Upon receipt of the two cover letters, all other application components will automatically be forwarded to both scholarship committees. If a student applies for both scholarships, the same reference letters may be submitted for both applications. AGS scholarship awards range from \$500 to \$3000.

The AGS Scholarship Committee will take into account all facets of the information received. Priority will be given to those individuals whose thesis work is intended towards publication of results. For those who receive a scholarship award, an abstract (not exceeding 1000 words) summarizing preliminary or final results should be submitted to AGS for publication in our monthly newsletter within a year of the award.

Applications for the Don Richter Memorial Scholarship

<https://www.alaskageology.org/don-richter-memorial.html>

The Alaska Geological Society's Don Richter Scholarship fund is requesting applications for support of graduate student research. Proposals in all geology and geophysics disciplines related to work in Alaska are welcome, and proposals for research in the areas of Don's interests, including volcanology, igneous petrology, neotectonics, or field-based studies in the Aleutian arc, Talkeetna Mountains, and Wrangell Mountains region are especially encouraged. The scholarship fund will award \$2000 to one proposal.

Eligibility:

1. Enrollment at an accredited institute of higher education.
2. Status as a MS or PhD candidate in geoscience or equivalent degree program.
3. Project or thesis/dissertation topic focused on Alaskan geology or related geoscience topic with a preference for topics that reflect Don Richter's career interests, including but not limited to: volcanology, igneous petrology, field-based investigations in the Wrangell Mountains, the Aleutian arc, the Talkeetna arc, the Denali Fault system, and the stratigraphy of south-central Alaska.
4. Having received the Richter Scholarship no more than one (1) time previously. Previous awardees shall be additionally required to provide the Scholarship committee with a summary of how previous funds were used.
5. Applicants for the Richter Scholarship may not be related to any member of the Richter family or to any person serving on the Scholarship Committee or the Board of Directors of the Society.

Applications Should Include:

1. AGS Scholarship application form:
http://www.alaskageology.org/uploads/1/1/9/5/119566579/ags_scholarship_application_form.pdf
2. A cover letter describing your personal and educational career goals, your interest in the Earth Sciences, your financial need, and how you would use the scholarship funds. Examples of how to apply the funds include, but are not limited to, field work, research/lab fees, or tuition and books. If you are a past scholarship recipient, please include an update on how you used previous AGS funding.
3. A project description if you are an undergraduate, or thesis proposal, if you are a graduate student; please address relevance of project to Don Richter's interests (see #3 above).
4. A minimum of two letters of recommendation from those familiar with your academic record. A third letter may be included if it contains important additional information.
5. A copy of your transcripts from your current institution. If you are a first year graduate student, please also include transcripts from your previous institution. Formal confidential transcripts are not required; copies will suffice.

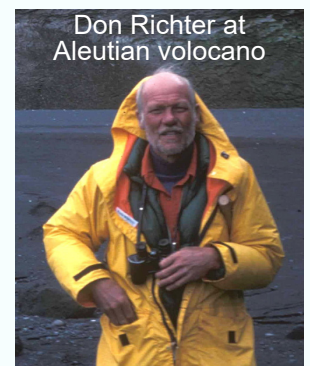
The AGS Scholarship Committee will take into account all facets of the information received. Priority will be given to those individuals whose thesis work is intended towards publication of results. Within one year of receipt of the award, an abstract (not exceeding 1000 words) summarizing your preliminary or final results should be submitted to AGS for publication in our monthly newsletter.

Application materials must be submitted by **February 1, 2024**:

Applications may be sent electronically to scholarships@alaskageology.org or by U.S. mail to:

Richter Scholarship Committee
Alaska Geological Society
P.O. Box 101288
Anchorage, AK 99510

Questions regarding scholarship applications may be directed to Sue Karl at smkarl107@gmail.com or 907-441-8010. **Awards will be announced March 25, 2024.**



Don Richter at
Aleutian volcano

Molly McCreary, PhD candidate, University of Utah, Salt Lake City, UT - 2023 AGS Scholarship Award Update

Paraglacial rock slope failures conditioned by repeated seismicity in Prince William Sound, Alaska

Authors: Molly McCreary, Jeff Moore, Erin Jensen, Brian Collins

Purpose:

Paraglacial valley rock slopes in Prince William Sound, Alaska are located within a highly active seismic region and are susceptible to damage from both earthquake shaking and repeated cycles of glaciation. We hypothesize that because ice is rigid at high co-seismic strain rates, glaciers effectively buttress adjacent ice-contact rock slopes during earthquakes, reducing seismic damage. As glaciers retreat, the portion of the rock slope susceptible to seismic damage increases. Repeated earthquakes over time thus help condition certain areas of paraglacial valleys for slope failure.

Methods:

In combination with field and remote mapping and rock mass characterization in Serpentine Glacier Valley, Prince William Sound, we use numerical modeling to analyze the anticipated slope response to representative earthquakes. We employed a numerical model capable of simulating both static and dynamic responses of jointed rock slopes (Itasca's UDEC) to evaluate rock mass damage. Static models incorporated rock mass structural properties, topography, and past ice elevations to simulate rock slope damage from previous cycles of glaciation. We then applied representative earthquake ground motions in dynamic simulations to assess additional damage generated by seismic loading at times of different glacier elevations.

Results:

Serpentine Glacier Valley contains several large, active landslides that have been subjected to glacier cycles in conjunction with repeated seismic loading over the late Pleistocene and Holocene. Our modeling results will show the evolution of spatially distributed rock slope damage generated by individual earthquakes as well as additional damage resulting from subsequent deglaciation. We aim to simulate the observed kinematic failure modes (planar sliding and flexural toppling) found at the two largest landslides in Serpentine Valley, and show how repeated seismicity over glacial cycles generated rock mass damage that may have conditioned these areas of the slope for failure during present day ice retreat.

Conclusions:

Glaciers buttress adjacent rock slopes during earthquakes reducing damage in areas of ice contact, while slopes above the glacier incur greater co-seismic fracturing. Over time, earthquake induced damage may be maximized in areas that are most often ice free, as well as at slope breaks and crests susceptible to topographic amplification of ground motion. As coastal Alaska experiences rapid glacial retreat over the next century, it is imperative to understand the added effects of seismic shaking on slopes preconditioned by previous paraglacial damage, and what regions of deglaciating valleys may be most susceptible to co-seismic failure in the future.

Citation:

McCreary, M.E., Moore, J.R., Jensen, E.K., Collins, B., 2023, Paraglacial rock slope failures conditioned by repeated seismicity in Prince William Sound: 6th World Landslide Forum, poster.



EXCITING NEW PUBLICATION ON LOWER JURASSIC PLANTS FROM THE TALKEETNA FORMATION, SOUTHERN TALKEETNA MOUNTAINS, SOUTH-CENTRAL ALASKA

Robert B. Blodgett

Blodgett & Associates, Consulting Geologists, 2821 Kingfisher Drive, Anchorage, AK 99502
RobertBBlodgett@gmail.com

A new publication (Barbacka et al., 2023) just appeared near the end of December 2023 which presents the most definitive update, illustrations, and discussion of Lower Jurassic plants from southern Alaska. The flora upon which this paper was based was discovered by one of the authors (Curvin Metzler) almost 20 years ago.

Barbacka, M., Gorecki, A., Pott, C., Ziaja, J., Blodgett, R.B., Metzler, C., Caruthers, A.H., Edirisooriya, G., and Pacyna, G., 2023, Macroflora from Lower Jurassic (Pliensbachian) of Hicks Creek, southern Talkeetna Mountains, south-central Alaska: Papers in Palaeontology, v. 9, no. 6, p. 1-35.

This Pliensbachian age flora from the Talkeetna Formation exposed near Hicks Creek (east of Chickaloon) is extremely well preserved and provides our most detailed look at Early Jurassic land plants from the Peninsular terrane of southern Alaska. This flora was first studied by Knowlton (1916) but the material for that study was very limited. The flora illustrated here (see figs. 2-3) is very “tropical” in aspect and truly documents the long-distance transport the Peninsular terrane of south-central Alaska has withstood, from an equatorial setting in the Early Jurassic through the Late Jurassic, when rocks of the Naknek Formation bear cool to cold-water marine macrofossils and sedimentological features suggesting glacial striations and possible dropstones, indicative of a high-latitude setting by that time. This northward migration of the Peninsular terrane throughout the Jurassic had been previously indicated by study of its megainvertebrate fossil fauna (Blodgett, 2012; Blodgett et al., 2015, p. 10).





Earlier mention and even limited illustration of plants from the Talkeetna Formation can be found in more recent publications such as Clift et al. (2005) and Draut et al. (2006). The only other paper on Lower Jurassic plants of the Peninsular terrane is the flora described by Barbacka et al. (2006) from Hettangian age strata at Puale Bay on the Alaska Peninsula, also of tropical character.

Anyone interested in receiving a PDF of this publication can do so by writing me (Robert B. Blodgett, my email is: RobertBBlodgett@gmail.com). Stay warm!

REFERENCES

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- Knowlton, F.H., 1916, A Lower Jurassic flora from the upper Matanuska Valley, Alaska. *Proceedings of the United States National Museum*, v. 51, p. 451-460.
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Macroflora from Lower Jurassic (Pliensbachian) of Hicks Creek, southern Talkeetna Mountains, south-central Alaska

by MARIA BARBACKA^{1,2,*} , ARTUR GÓRECKI³ , CHRISTIAN POTT⁴,
JADWIGA ZIAJA¹ , ROBERT B. BLODGETT⁵, CURVIN METZLER⁶,
ANDREW H. CARUTHERS⁷, GEETHANALJE EDIRISOORIYA⁸ and
GRZEGORZ PACYNA³ 

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Typescript received 30 May 2023; accepted in revised form 22 November 2023

Abstract: A recently discovered Early Jurassic locality at Hicks Creek, Talkeetna Mountains, Alaska, yielded a macrofossil plant assemblage comprising predominantly bennettitaleans and ferns, accompanied by horsetails, seed ferns, cycads and conifers. Single species from different plant groups dominate the assemblage (e.g. *Cladophlebis alata*, *Otozamites pterophylloides*; less frequent *Rhaphidopteris* sp. and *Pagiophyllum falcatum*; sporadic *Thalites* sp., *Klukia* sp., *Todites williamsonii*, *Coniopteris bella*, *Sagenopteris* sp., *Zamites* sp., *Nilssoniopteris pristis*, *Pseudoctenis* sp., *Eretmophyllum* sp. and *Elatides* sp.). We also encountered a new foliage of cycadophyte type, *Hanophyllum varioserratum* gen. et sp. nov. Hicks Creek is one of four Alaskan areas with fossil Mesozoic plants that have been investigated. Along with rocks of Puale Bay and the East Fork of Boulder Creek exposures, this locality is of Early Jurassic age, while Cape Lisburne is Early Cretaceous (Albian). Based on a comparison of the floral composition of Hicks

Creek with some other localities (Alaska and beyond), environmental conditions for the Peninsular terrane are inferred. Floristic differences between localities are explained by the varied topography, interpreted as disturbed coastal-lagoonal or as undisturbed, moist and warm inland. Some taxa (*Todites williamsonii*, *Coniopteris bella*, *Nilssoniopteris pristis*, *Otozamites tenuatus*, *O. mimetes*, *Brachyphyllum crucis*) common to the Alaska Peninsula and Middle Jurassic of Yorkshire may suggest a possible pathway of plant migration during the movement of the Peninsular terrane. The occurrence of *Cladophlebis alata* in the Lower Jurassic of south-central Alaska and the Lower Cretaceous of northwestern Alaska may also shed light on the posited spread of this species.

Key words: macroflora, Alaska Peninsular terrane, Lower Jurassic (Pliensbachian), environmental conditions, palaeogeography, taxa migration.

In this paper we present new Early Jurassic plant macrofossils recently discovered in exposures of Pliensbachian beds in the Hettangian–Toarcian Talkeetna Formation along Hicks Creek, south-central Alaska. The fossil plants are distributed through the southern part of Alaska, including localities at Sheep Mountain, the East Fork of Boulder Creek, also in the Talkeetna Mountains, and at Horn Mountain on the west side of the upper Cook Inlet Basin and Puale Bay on the upper part of the Alaska Peninsula (Peninsular terrane).

Alaskan Lower Jurassic fossiliferous beds are scarce and commonly not very rich in plant remains. Knowlton (1916) described 10 taxa based on specimens collected by G. C. Martin, R. M. Overbeck and J. B. Mertie at four sites close to each other near the East Fork of Boulder Creek (in Knowlton's paper named the Upper Matanuska Valley). The plant assemblages from this area are dominated by remains of bennettitaleans and ferns, with a few caytonialeans, cycadaleans and conifers. Martin (1926) included some of Knowlton's statements in his

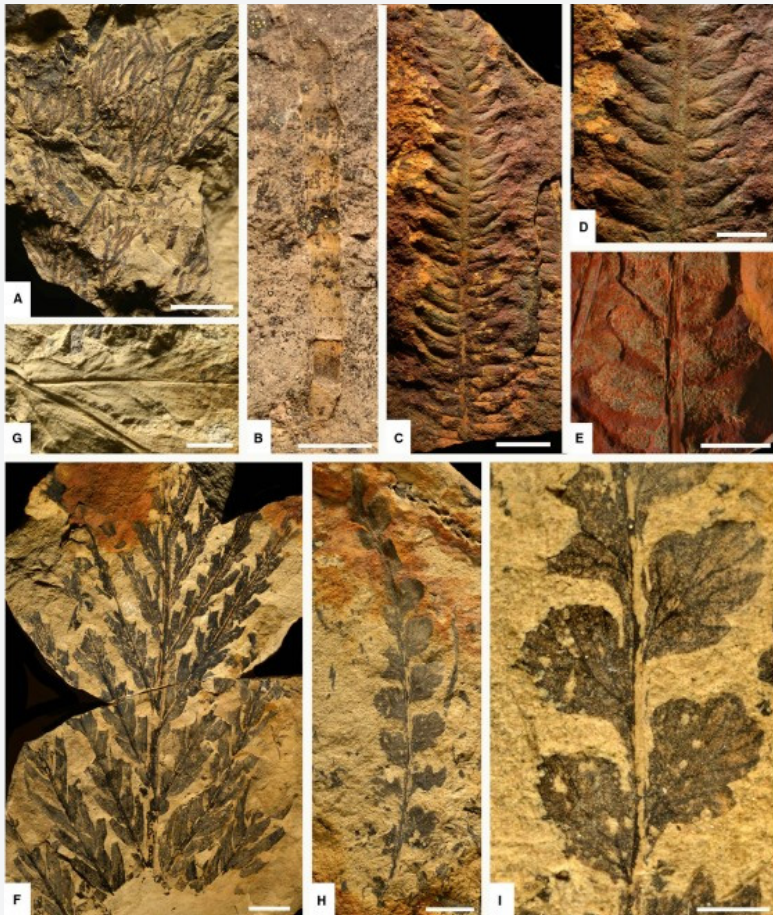


Figure 2. Figure 3 from Barbacka et al. (2023) showing various fossil plants from the Pliensbachian strata of the Talkeetna Formation near Hicks Creek.

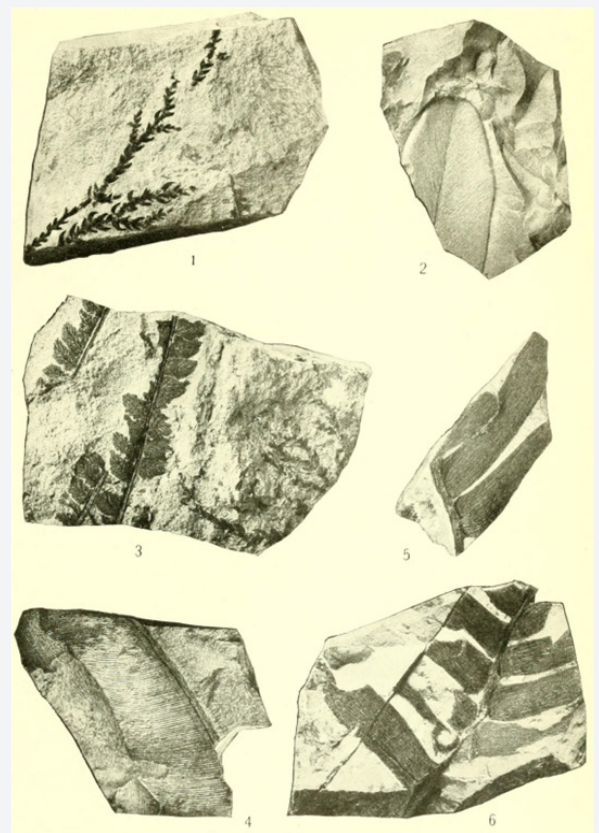


Figure 4. Plate 81 from Knowlton (1916) showing various Pliensbachian age plants from the Talkeetna Formation, southern Talkeetna Mountains



Figure 3. Figure 4 from Barbacka et al. (2023) showing various fossil plants from the Pliensbachian strata of the Talkeetna Formation near Hicks Creek.



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The Alaska Geological Society is an organization which seeks to promote interest in and understanding of Geology and the related Earth Sciences, and to provide a common organization for those individuals interested in geology and the related earth sciences.

This newsletter is the monthly (September-May) publication of the Alaska Geological Society, Inc. 300± newsletters delivered electronically per month.

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MEMBERSHIP INFORMATION

AGS annual memberships expire November 1. The annual membership fee is \$25/year (\$5 for students). Lifetime membership is \$250. You may download a membership application from the AGS website and return it at a luncheon meeting, or mail it to the address above.

Contact membership coordinator Kirk Sherwood with changes or updates (e-mail: membership@alaskageology.org; phone: 907-240-2546)

All AGS publications are now available for on-line purchase on our website.

Complete catalogue at: <http://www.alaskageology.org/publications1.html>

ADVERTISING RATES

Advertisements may be purchased at the following rate: \$200 for 9 monthly issues (September - May) of AGS newsletter (any size up to full page) and companion ad on AGS website for full year (beginning each September).

Contact Jennifer Crews at jennifer.r.crews@conocophillips.com to place ad.

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It's PFD Application Time!

Did you know that you can support the society through Pick.Click.Give? When you fill out your PFD application, just select Alaska Geological Society, Inc. in the list of non-profits and you can help AGS to promote the uniqueness of Alaskan Geology and provide for education, geologic research, and networking to all who are interested as well as provide scholarships to students across a wide range of geologic topics.

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Alaska Geological Calendar of Events



Date	Time	Organization	Event	Location
Nov. 28, 2023	11:30 pm	AGS	Bernard Coakley, UAF. Chukchi Edges - Understanding the history of the Arctic Ocean through mapping the Chukchi Borderland and and the adjacent Canada Basin.	BP Energy Center & Google Meet
Dec. 14, 2023	11:30 am	AGS	Trystan Herriott DGGs. High-precision, zircon-based chronostratigraphy in Alaska: Advances and insights from Mesozoic strata in the Cook Inlet forearc and Colville foreland basins	BP Energy Center & Google Meet
Jan. 25, 2024	11:30 am	AGS	Esther Babcock, Logic Geophysics & Analytics,LLC. Mapping Near-Surface Lithology in Alaska with Geophysical	BP Energy Center & Google Meet
Feb. 15, 2024	11:30 am	AGS	Aeon Russo UAA. "Significance of High Latitude Submarine Groundwater Discharge"	BP Energy Center & Google Meet
Mar. 21, 2024	11:30 am	AGS	Peter Illig, KoBold Metals.Mineral Exploration/Mining theme	BP Energy Center & Google Meet
Apr. 29, 2024	11:30 am	AGS	Josh Long, DGGs. Brookian Stratigraphy of North Slope theme	BP Energy Center & Google Meet
May 21, 2024	11:30 am	AGS	Dave Larimer, Contango Ore. Alaska mining theme	BP Energy Center & Google Meet

Membership Note

Membership renewal is November 1; annual dues are:

Full member - \$25

Student member - \$5

Lifetime membership - \$250



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