

Nittany Mineralogical Society Bulletin

Nittany Mineralogical Society, Inc., meeting in State College, Pennsylvania
Contact information on back page

Editor (see back page):

David C. Glick

September, 2020

Visit our web site: www.nittanymineral.org

September 16th ZOOM meeting ONLINE:

BUMBLEBEE ROCK

**(trade name: "Bumblebee Jasper"):
A relatively trendy lapidary material**

Bob Altamura



Bob will discuss the formation of this interesting and colorful rock which comes from volcanic fumaroles in Indonesia, and its use as a lapidary material. See pages 2-3 for an illustrated article.

Please join us online for this presentation! Last month's Zoom was enjoyable and we gained some experience. This month we'll e-mail the Zoom link to all paid members who receive our e-mails; others can receive it by e-mailing <xidg@verizon.net>. We'll plan to start at 7:30 p.m.; it may take a while to get people connected, then we can do any questions & answers and announcements, and plan to start the presentation at 8:00 p.m. Please bear with us as we continue to learn about using Zoom. We will have some information on the main page of the web site as well.

While We Can't Travel: Virtual Geo-Resources

We continue to add to the interesting resources on the main page of our web site, www.nittanymineral.org. One is a professionally recorded story of dinosaur fossil excavation in Colorado. Another (last on the list on the web site) is a series of podcasts of Geology-101-style lectures by Nick Zentner of Central Washington University.

At this time, videos of the 2020 Dallas Mineral Collecting Symposium (with presentations and tours by some very well-known names in mineral collecting) are still available by following the links at <<https://www.dallassymposium.org/>>. *-Editor*

National Fossil Day October 14 Earth Science Week October 11-17

The National Park Service's National Fossil Day is coming up on Wednesday, October 14. Entries for the 2020 Art Contest, with the theme "Life of the Paleozoic Oceans," must be received by October 2. National Fossil Day is right in the middle of Earth Science Week, October 11 - 17, 2020, which will celebrate the theme "Earth Materials in Our Lives." Contests and educational materials are available. See our web site for links.

FEDERATION NEWS

Nittany Mineralogical Society, Inc., is a member of EFMLS, the Eastern Federation of Mineralogical and Lapidary Societies, and therefore an affiliate of AFMS, the American Federation of Mineralogical Societies. **The Federation leaders and our Society strongly encourage all members to read the monthly Federation Newsletters, available on their web sites, which are linked from our web site, www.nittanymineral.org.** We present brief summaries here in order to encourage readers to see the entire newsletters. There's a lot there!

The August-September **EFMLS News** provides information about the October 23-26 EFMLS Convention in Hickory NC, held in conjunction with the 50th annual Catawba Gem and Mineral Show. The President discusses bylaws changes. The special situation with the 2020 AFMS Endowment Fund is discussed; tickets are for sale by mail until October 3 but the drawing for prizes has been postponed to 2021. The EFMLS fundraising auction for the Eastern Foundation Fund will take place October 24 at the Convention. The safety article discusses sharing great ideas and concerns about safety in all aspects of our hobby.

The **AFMS Newsletter** September issue announces with regret that their October convention in Tennessee has been cancelled. Suggestions are sought for revisions to the Future Rockhounds manual. *-Editor*

All of us at NMS sincerely hope that everyone is in good health and will continue to be well. We look forward to being together again.

BUMBLEBEE ROCK

**(trade name: “Bumblebee Jasper”):
A relatively trendy lapidary material**

Bob Altamura

A couple of years ago a friend of mine, a former member of the Nittany Mineralogical Society and avid amateur lapidarist, alerted me to a lapidary material that was new to me. That lapidary material was called “Bumblebee Jasper,” although actually an unusual banded carbonate rock composed of considerable calcite (CaCO_3), pyrite (FeS_2), and realgar (As_4S_4) in a banded pattern. Referring to this rock as a jasper (a silicified rock) is a misnomer in terms of a scientific classification, yet the trade name persists on the internet.

The rock occurs on the volcano Mount Papandayan which is in the province of West Java, Indonesia. This volcano is located on the western “Ring of Fire” – a belt of active volcanoes that borders the Pacific plate. The ring of fire is characterized tectonically as a belt of subduction zones, and active volcanism is due to processes associated with classic subduction of ocean crust and seafloor sediments. Volcanic materials are commonly andesitic in composition, and volcanoes tend to be stratovolcanoes.

The ‘Bumblebee Rock’ deposits are not known in any other parts of the world and are exclusive to Mount Papandayan. Apparently the rock has locally been worked as a lapidary material since at least 1990, however to the author’s knowledge the popularity of the material as a semiprecious gemstone is relatively recent.

Geologically ‘Bumblebee Rock’ occurs adjacent to volcanic fissures (fumaroles) on the flanks and within the caldera of Mount Papandayan. Miners excavate ‘Bumblebee Rock’ very close to fumaroles that deposit the minerals that make up the rock. Some of the minerals that make up ‘Bumblebee Rock’ may precipitate by a process of sublimation (directly from vapor phase to solid phase) or from a process of metasomatism (metamorphic alteration by fluid and/or vapor) of host rock. The host rock here is volcanic material (andesite) and chemical sedimentary rock (limestone). The layering or banding in the rock appears to represent alternating individual precipitation events of realgar and pyrite along with integrated calcite that may have precipitated or been remobilized from pre-existing host rock on the walls of fumarolic fractures. Minor and accessory minerals include gypsum ($\text{CaSO}_4 \cdot 2\text{H}_2\text{O}$), hematite (Fe_2O_3) and sulfur (S) along with orpiment (As_2S_3).

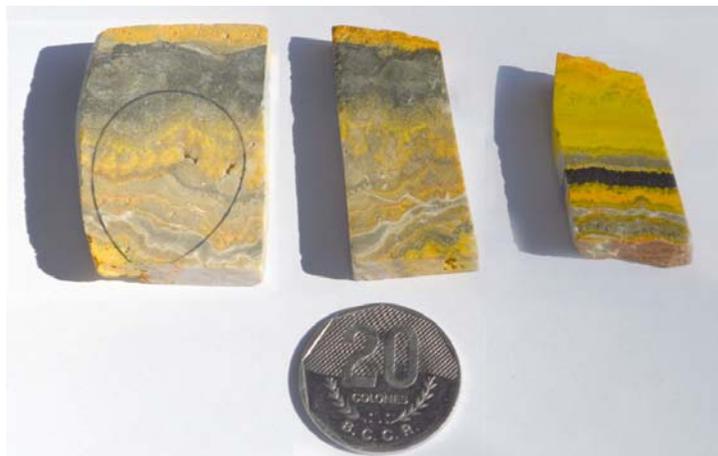
Our Zoom presentation will provide images of slabs of the material and cut and polished cabochons.



Mt.Papandayan volcano. Attribution: by Hullie August 1997 – CC-BY-SA-2.5, commons.wikimedia.org File: Indonesia - papandayan 4.jpg



Fumaroles at Mt.Papandayan. Attribution: by Hullie August 1997 – CC-BY-SA-2.5, commons.wikimedia.org File: Indonesia - papandayan 1.jpg



Slabs of ‘Bumblebee Rock’ intended for lapidary work. Note the variation in layering patterns. Sample on the far left shows a couple of pits that can occasionally be found. (Note: some lapidary artists will fill such pits with an epoxy product such as ‘Opticon’ to allow a smooth polished surface.) Slab to the far right has been polished while others were wetted to highlight patterns and color. Translucent gray in the samples is calcite, dark gray to black is pyrite, and yellow to orange material is realgar. (The Costa Rican 20 colones coin is approximately the size of a U.S. quarter.) R. Altamura photo.



Polished slab of 'Bumblebee Rock.' Each discontinuity may represent a precipitation event on the walls of a fumarolic fissure on the flanks of Mount Papandayan in West Java, Indonesia. *R. Altamura photo.*



'Bumblebee Rock' cabochon. (The Costa Rican 20 colones coin is approximately the size of a U.S. quarter.) *R. Altamura photo.*



Suite of oval cabochons of 'Bumblebee Rock'. *R. Altamura photo.*

Geo-Sudoku

by David Glick

This puzzle contains the letters ACFILMORU; one row or column describes the environment in which a certain lapidary material was formed. As usual, if you've read this issue, you've seen it. Each block of 9 squares, each row, and each column must contain each of the nine letters exactly once. The solution is on page 8.

	R	F						U
L						R		A
		C	R	O	U			
	L				A		R	
	F		L		M	C		
			O	C	R			L
	C		U		F		A	
R	O	A				U		
	U							C

Friends of Mineralogy - Pennsylvania Chapter Plans Nov. 7 Virtual Symposium and Nov. 8 Field Trip

Friends of Mineralogy-Pennsylvania Chapter will hold its annual symposium for mineral collectors on Saturday, November 7, 2020, as a live virtual event from 9:00 a.m. to 2:30 p.m., subject to change. An in-person field collecting trip is planned for Sunday, November 8. The online symposium will include several virtual live presentations of interest to PA mineral collectors, with audience questions and answers.

The Symposium will be available to FM-PA Chapter 2020 members who **register in advance**. Non-members may pay for 2021 membership by October 26 and receive membership for the remainder of 2020, including the Symposium and Field Trip, as a bonus. See <<http://www.rasloto.com/FM/>> for membership application, symposium details, and registration form as they become available.

Call for Symposium Presentations

Friends of Mineralogy - Pennsylvania Chapter invites submission of abstracts for virtual live presentation at our annual symposium. It will be a Zoom meeting taking place on Saturday, November 7, 2020. Presentations on Pennsylvania minerals or mineral localities, or other topics of interest to collectors, are invited. We provide an honorarium of \$100 for each 40 minute presentation. Further information about submitting abstracts and making presentations will be available soon at <<https://rasloto.com/FM/>>.

Short Mineral Collecting Videos Requested

Short (5-10 minute) videos of mineral collecting sites and/or recent collecting activities and resulting specimens may be submitted by October 26 for possible inclusion in the Symposium. Contact Bill Stephens <bstephens@stephensenv.com> for instructions on submission.

From the collections

Dr. Charles E. Miller, Jr.

This is Part 3 in a series of articles showcasing images and specimens in the writer's collection.

(Note: the author collected and photographed the specimens except for Figures 6b and 6d.)

Part 3: Green River Formation Fossils

This article presents Green River specimens in the writer's collection. For a discussion of the Green River Formation, the reader is referred to the October, 2013 issue of the Nittany Mineralogical Society Bulletin (pp. 4-7). Except where noted, identifications are tentative.

The Green River is a Lagerstätte - a sedimentary deposit of exceptional fossils. This is partially evident from the photographic plates in this article. However, the images represent a small fraction of the variety of fossils found in this formation. The reader is referred to:

Grande, Lance, 1984, Paleontology of the Green River Formation, with a review of the fish fauna. The Geological Survey of Wyoming, 2nd Ed., 333 p. [This is a free download.]

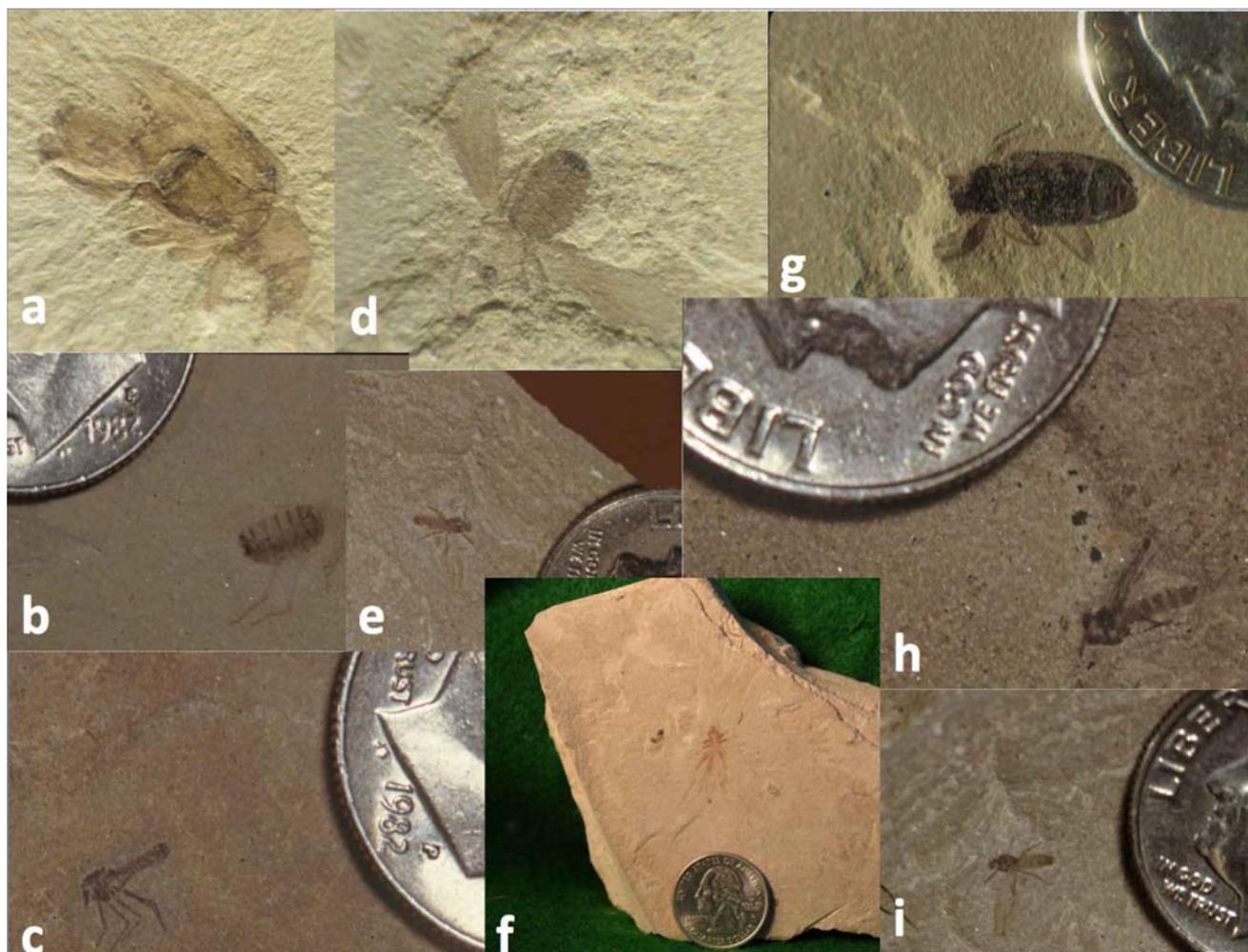


Figure 1: (a) Weevil. (b) Nematoceran fly, maybe a March fly. (c) Probably a black fly. (d-i) Unidentified insects. Identifications by The Pennsylvania State University Entomology Department.

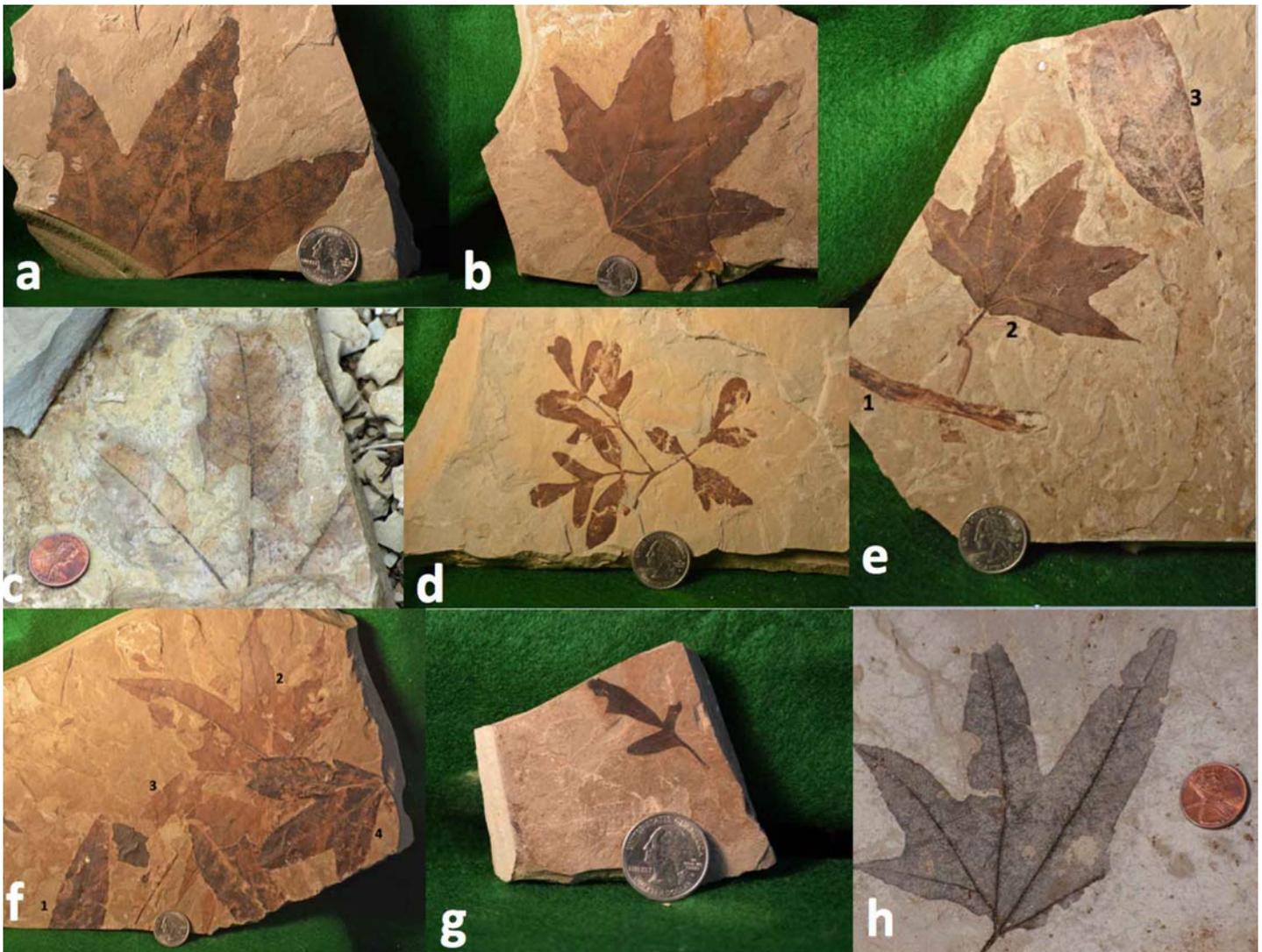


Figure 2: (a) Sycamore. (b) Sycamore. (c) Probably sycamore. (d) Balloon vine. (e) 1: stem, probably of Equisetum (horsetail). 2. Sycamore. (3) Unidentified leaf. (f) 1 and 4. Unidentified leaves. 2 and 3. Sycamore. (g) Balloon vine. (h) Maple.

Several other famous Lagerstattes include the Burgess Shale and Rancho La Brea Tar Pits. A more local Lagerstätte is that of the Silurian Tonoloway Formation in the Winfield Quarry at Winfield, Pennsylvania. There, several thousand eurypterids have been discovered.

Some of the more unusual and common fossils from the Green River Formation are coprolites (Figure 6e). These represent fossilized feces. In the Green River, coprolites are mostly of fish but those of larger vertebrates are also found.

As fossils, coprolites are important because they may preserve evidence of a meal. The evidence might include bones or seeds. This information assists in understanding the paleoecology during Green River time.

The fossil flora and associated sediments indicate a subtropical climate. Average temperature was approximately 67° F. Presence of certain plant genera indicate a temperature minima not much below freezing. These observations follow a tenet of climatology that for vegetation temperature ranges are more significant than the annual average.

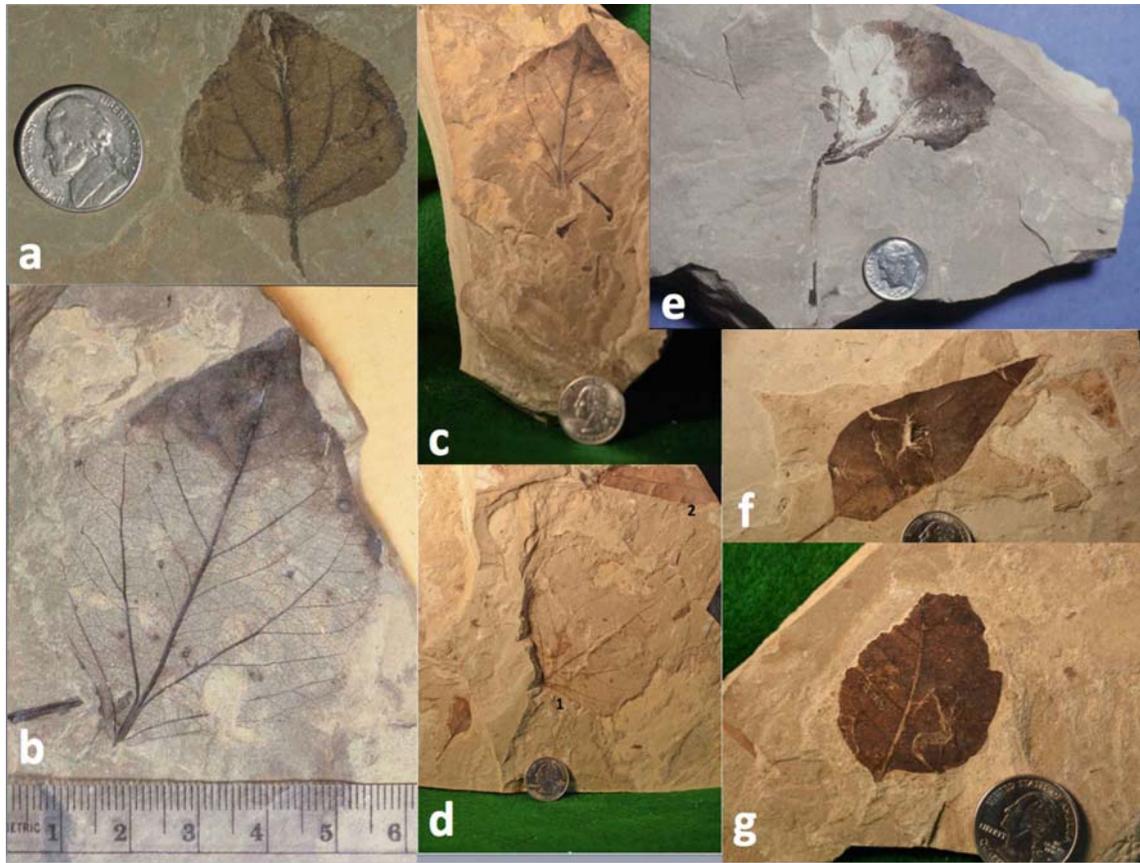


Figure 3: a-d are poplar. Others are unidentified.

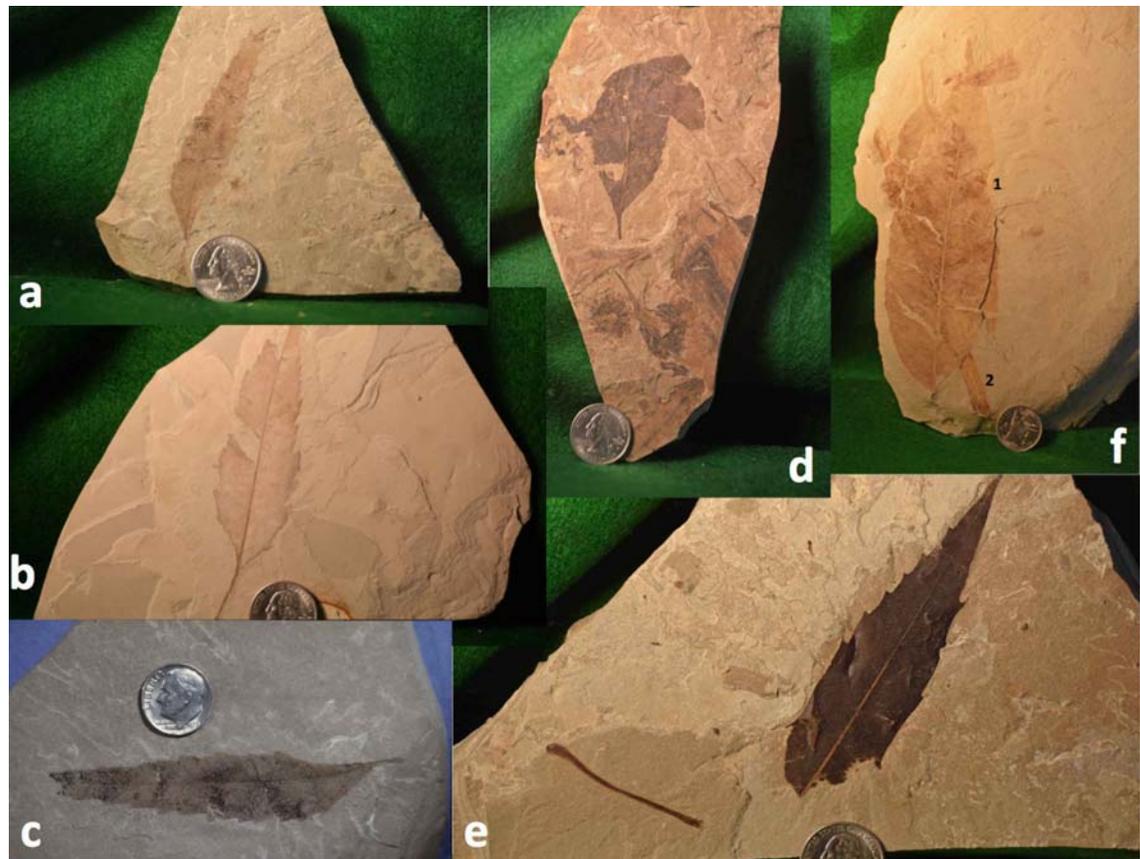


Figure 4: a-c, and e are sumac. (d) Unidentified leaf (center). (f) 1. Unidentified leaf. 2. Probably equisetum (horsetail).

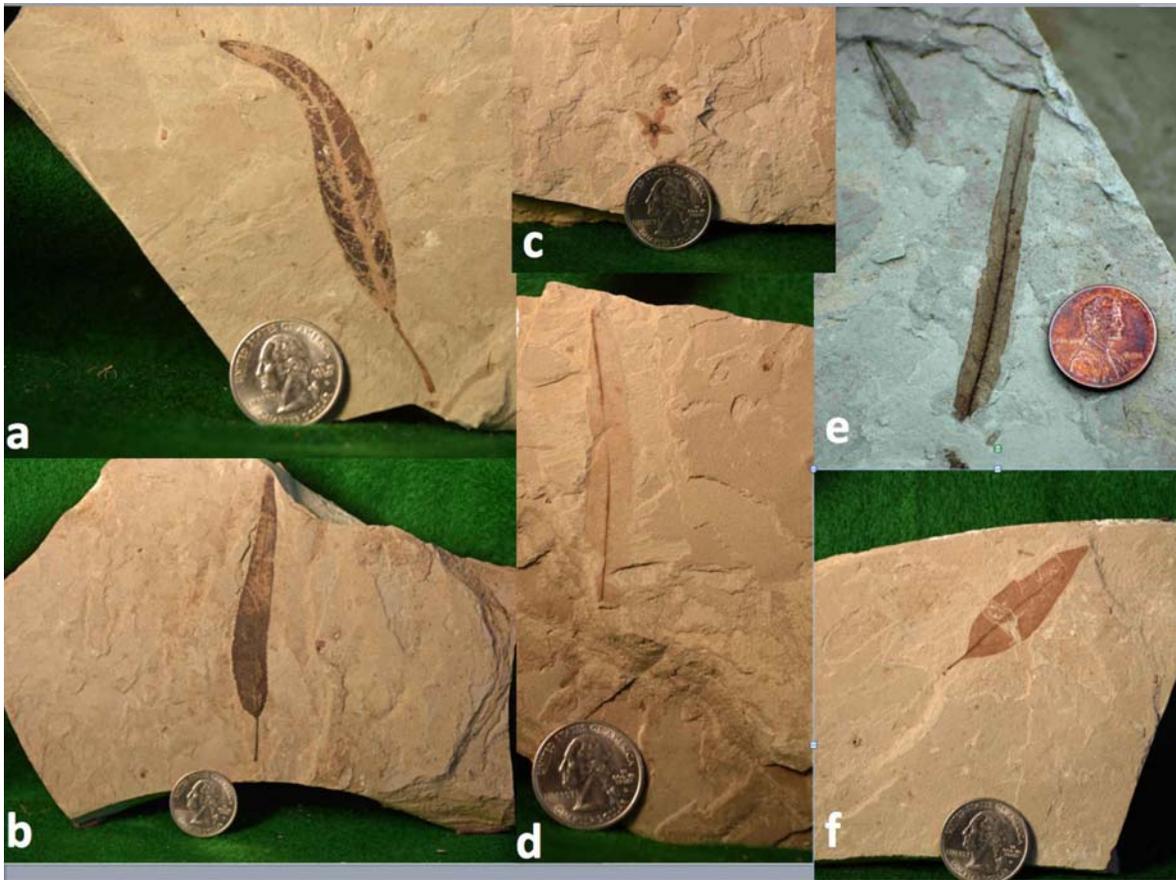


Figure 5: (a), (b), (d) and (e) are willow leaves. (c) Probable Astronium flower. (f) Unidentified leaf.

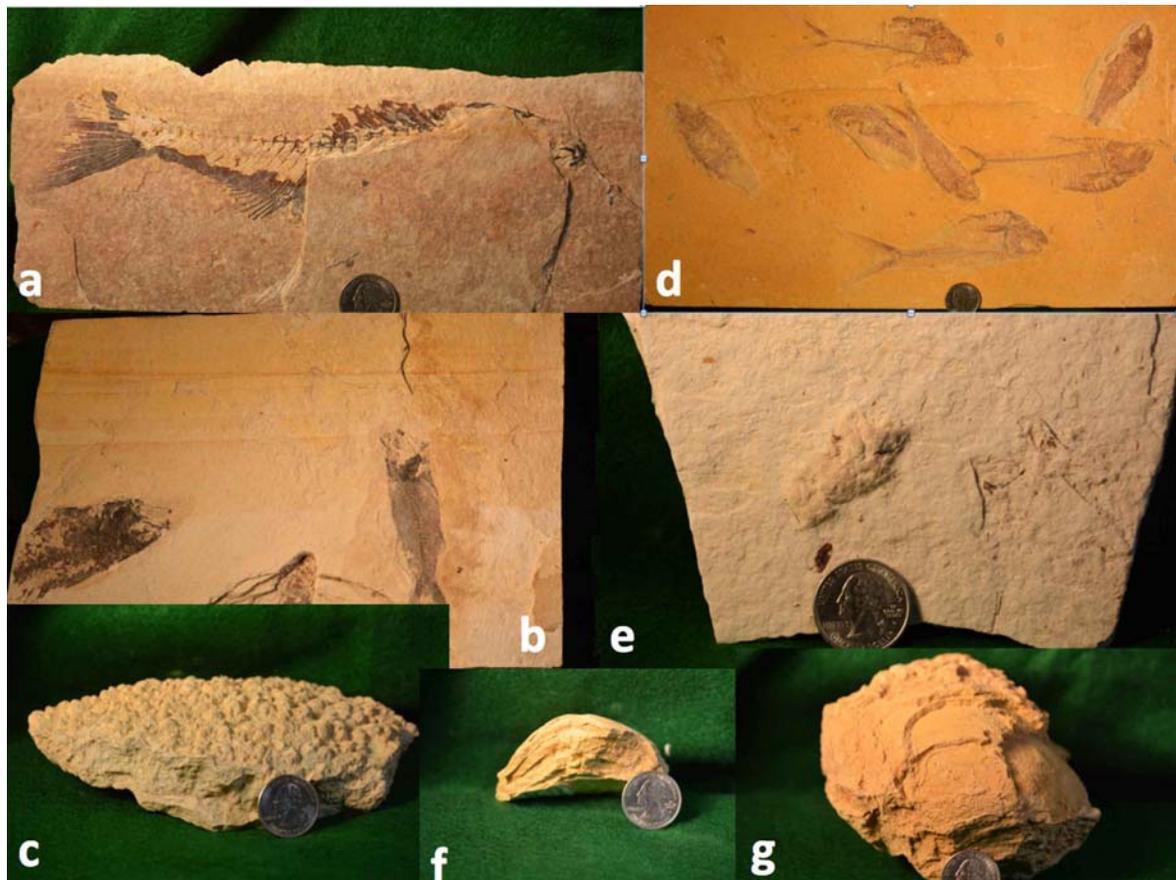


Figure 6: (a), (b), and (d) are various fish fossils. (e) Fish coprolite. (c), (f), and (g) stromatolites.

Some Upcoming Shows and Meetings

Our web site <http://www.nittanymineral.org> has links to more complete lists and details on mineral shows and meetings around the country. See www.mineralevents.com for more.

Most upcoming events have been canceled.

Verify show schedule before traveling!

Sep 26-27, 2020: Franklin/Sterling Hill G&M Show. Franklin Firehouse, 137 Buckwheat Rd., Franklin NJ. Sat - 5, Sun 10-4.

Oct 3, 2020: Autumn Mineralfest, by PESA. Macungie, PA. Sat. only, 8:30-3:00. <http://www.mineralfest.com/>

Oct 23-25, 2020: EFMLS Convention & Catawba Valley G&M Club Show, Hickory, NC
<https://efmls.org/annual-convention/>

Oct 31, 2020: Ultravioletation fluorescent minerals show, by R&M Club of Lower Bucks County & UV Nomads of FMS. First UM Church, 840 Trenton Rd., Fairless Hills, PA 19030. Sat. only 9-4.

Oct 31, 2020: South Penn Rock & Mineral Swap & Sale, by CPRMC & Franklin County RMC. South Mountain Fairgrounds, Biglerville PA. Sat. only.

Nov. 7-8, 2020: Friends of Mineralogy - Pennsylvania Chapter Annual Symposium - Live Virtual Event - and Field Trip. <https://rasloto.com/FM/>

Nov. 14-15, 2020: Monongahela Rockhounds Show, rescheduled from April. West Mifflin Volunteer Fire ., #4 Skyview Hall, 660 Noble Drive, Pittsburgh, A 5122. (Near Century III Mall & Allegheny Co. Airport)

See <http://www.monongahelarockhounds.org/events.php>

Geo-Sudoku Solution

O	R	F	I	A	L	M	C	U
L	I	U	M	F	C	R	O	A
M	A	C	R	O	U	F	L	I
C	L	O	F	U	A	I	R	M
A	F	R	L	I	M	C	U	O
U	M	I	O	C	R	A	F	L
I	C	L	U	M	F	O	A	R
R	O	A	C	L	I	U	M	F
F	U	M	A	R	O	L	I	C

INVITE A FRIEND TO JOIN THE SOCIETY

The Nittany Mineralogical Society prides itself on having the finest line-up of speakers of any earth sciences club in the nation. Everyone is welcome at our meetings. If you'd like to be part of our Society, dues are \$20 (regular member), \$7 (student rate), \$15 (seniors), \$30 (family of two or more members, names listed). Those joining in March or later may request pro-rated dues. Your dues are used for programs and speakers, refreshments, educational activities, Bulletins, and mailing expenses. Please fill out a membership form (available at www.nittanymineral.org), make checks payable to "Nittany Mineralogical Society, Inc." and send them in as directed, or bring your dues to the next meeting.

We want to welcome you!

CONTACT INFORMATION

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The **Bulletin Editor** will welcome your submissions of articles, photos, drawings, cartoons, etc., on minerals, fossils, collecting, lapidary, and club activity topics of interest to the members. Please contact:

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Newsletter submissions are appreciated by the first Wednesday of the month. Photographs or graphics are encouraged, but please do not embed them in word processor files; send them as separate graphics files (TIF, or good to highest quality JPEG files, about 1050 pixels wide, are preferred). Please provide captions and name of photographer or artist.

Visit us at www.nittanymineral.org