FIELD CONFERENCE OF PENNSYLVANIA GEOLOGISTS

COMMEMORATIVE GUIDEBOOK TO THE FIRST FIELD CONFERENCE

May 29, 30, and 31, 1931

STATE COLLEGE, PENNSYLVANIA
CONTENTS

Introduction


Part 3. Leaders and scenes from The First Field Conference of Pennsylvania Geologists.

Part 4. Dedication to C. A. Bonine and notes from Bradford Willard's journal.

INTRODUCTION

This volume commemorates the First Field Conference of Pennsylvania Geologists. In the first part we have reproduced from original copy an announcement letter, the original program, and later program announcements and changes. No copy of the trip and hotel reservation forms are extant, nor do we have the auto route folder mentioned in the announcement letter. In Part Two we have also reproduced from original copy (with one exception) the materials provided to each conferee. The one exception is the diagram accompanying Charles Butts' description of geologic sections which was redrafted because our original was so poor as to be nearly unreadable in part. Only one correction was made to this illustration; Butts' original diagram has "Trough Cr" Is as "Trovec Cr" Is. The folded cross section was also photocopied from an original copy.

In Part Three we include photos of the four trip leaders, Bonine, Butts, Stone and Swartz, and G. A. Ashley, discussion leader. In addition, we include photos of the 1931 trip participants along the Horseshoe Curve and in the quarries near Bellefonte. These photos were rescued from Pennsylvania Geological Survey files flooded during Hurricane Agnes in 1972. We also believe that the photo of the group along the stream is that of all of the participants of the First Field Conference. This is because the group numbers 45, the number stated by B. Willard in his journal to have attended. In addition, all five of the leaders are in the photograph.

Part Four is a reprint of the dedication to C. A. Bonine written by Larry Whitcomb, and a reproduction of the journal notes of Brad Willard. These are included because they give personal experiences of the first trip.

Part Five is a short history of the Field Conference which is largely told through the synopsis of each of the conferences.

We trust that you will treasure this commemoration of the 50 years of Field Conferences.
PART 1

Announcing the Trip
April 28, 1931

Mr. Charles R. Fettke
Carnegie Institute of Technology
Pittsburgh, Pennsylvania

Dear Mr. Fettke:

Enclosed herewith are field trip and hotel reservation blank, program and auto route folder for the field conference of Pennsylvania geologists. Please return the reservation blank to me at your earliest convenience, as the hotel will probably be crowded over the Decoration Day week-end.

At the registration table you will receive mimeographed copies of stratigraphic descriptions and columnar structure sections of the formations to be seen on the several trips.

The enclosed index map shows the topographic quadrangles covered by the trips. Copies of the Bellefonte, Tyrone and (Lock Haven, for those taking trip No. 2) will be on hand and will be sold at cost. Anyone desiring copies of the other quadrangles should procure them from the U. S. Geological Survey, Interior Building, Washington, D. C.

Publications which may be consulted before leaving for the conference are as follows:


Ebensburg folio, U. S. G. S., No. 133.

Barnesboro-Patton folio, U. S. G. S., No. 189.

Looking forward to a profitable meeting, I am,

Very truly yours,

C. A. Bohme

Head, Department of Geology and Mineralogy
PROGRAM

Field Conference of Pennsylvania Geologists
May 29, 30, 31, 1931 - State College, Penna.

Friday:
May 29: - 9:00 A.M. to 1:00 P.M.
Trip I 1:30 to 5:30 P.M.
Registration - Lobby Nittany
Lion Inn, Campus.
Inspection of limestone mine of
the American Lime and Stone Co.,
Bellefonte; bentonite beds,
geologic structure and Ordovi-
cian stratigraphy in the vicin-
ity of Bellefonte, Pa., Leaders
--- C. A. Bonine and Charles Butts

Trip II
1:00 to 6:00 P.M.
The Silurian and Lower Devonian
section of the Bald Eagle
Valley from Bellefonte to Lock
Haven, Pa., including the out-
crop of the Oriskany horizon.
Leader - F. H. Swartz.

8:00 to 11:00 P.M.
Smoker - Sandwich Shop, base-
ment, Main Building. "Welcome"
by President Hetzel. Discussion
leader - Dr. Geo. H. Ashley,
Penna. State Geologist.

Saturday
May 30: - Trip III 8 to 12:00 A.M.
Stratigraphy of the Allegheny
Front from Altoona to Gallitzen
Leader - Charles Butts.

12:00 to 1:00 P.M.
Lunch in field.

1:00 to 5:00 P.M.
Tyrone thrust fault structure
section, Leader - Chas. Butts.

8:00 to 11:00 P.M.
Inspection of Mineral Indus-
tries Building, followed by
discussion in room 119.
Leader - to be announced later.

Sunday:
May 31: - Trip IV
Trips to caves of central Pa.
Leader - Mr. Ralph Stone, Asst.
Penna., State Geologist.
Announcement

The dinner Friday night will be at 7:30 P.M. in the Sandwick Shop, basement of Main Building. Tickets should be purchased at time of registration. The Smoker will follow the dinner in the Lounge of the main floor.

The Allegheny front trip will probably take the entire day. Therefore, the trip to the Tyrone thrust fault has been cancelled. However, those desiring to see this fault may do so by driving back to State College by way of Birmingham, Water Street and Spruce Creek. The fault zone is well exposed along the State Highway opposite the bridge at Birmingham and the plane of the fault can be observed, from the highway, in the railroad cut east of the station.

No provision has been made for the Saturday noon lunch, each person should bring lunch for himself as there will be no opportunity to purchase anything during the trip.

Those desiring to visit some of the caves of Central Pennsylvania on Sunday should make arrangements with Mr. Ralph Stone, Assistant State Geologist.

All field trips will start from the Nittany Lion Inn at the appointed time.

Please wear your badge so we may get better acquainted.
CHANGE OF PROGRAM

In order to work in the inspection
of the Birmingham (Tyrone) thrust fault, Saturday
afternoon, it will be necessary to leave State
College at 6:30 A.M., and drive to the Pennsylvania
Railroad Station at Altoona in time to catch the
8:10 A.M. train to Gallitzin, Pa. We will then
walk down the Allegheny front to Altoona, getting
lunch there and then proceed to Birmingham (route
220 to Tyrone and from there route 322 to Birmingham,
Penna.)
PART 2

First Field Conference Guide Materials
Although the rocks of the Bellefonte quadrangle are entirely sedimentary in origin and all except the Recent alluvial clays and sands along the present streams are of Palaeozoic age there are a large number of formations. These consist of limestones, dolomites, shales, sandstones and conglomerates. In general the formations can be separated from one another by their lithological characters but in a few cases such, for example, as the division between the Black River and Chazy, the Marcellus and Hamilton, the Portage and Chemung, the differences are based chiefly upon the fossil content rather than on the appearance of the rocks.

The formations of the quadrangle may be tabulated as in the following classification and every student should be familiar with this outline.

The scheme of classification used here is similar to that used in Chamberlain and Salisbury's text but differs from it in that here the Pennsylvanian and Mississippian are indicated as series in the Carboniferous system rather than as independent systems. This order is followed because it is the one in general use by the United States Geological Survey. The letters in parentheses, which are appended to the names of formations, correspond to the letters on the structure section in this manual. The figures indicate the thickness of the formations where they have been measured in the quadrangle. In the case of the Warrior limestone and the Gatesburg formation the measurements were taken north of Scotia. The other formations were measured in the vicinity of Bellefonte and Milesburg and north of the latter place.

Note---The name Chazy is subject to change.

Quaternary (Qal.) Alluvium, sand, gravel and clay.

Pennsylvanian series: Pottsville, (Ppo);
Conglomerate and sandstone

Mauch Chunk (Mmc); (20)
Green and yellow shale and sandstone

Mississippian series:
Pocono (Mb & Mp); (1,025)
Gray, brown, green and red sandstone and conglomerate.

Carboniferous

Catskill (Dc) (1200-1600); Red chocolate, and green shale and sandstone.

Chemung (Dch) (2883); Gray, purple, brown and drab shale and sandstone with thin beds of conglomerate.
| Devonian | Portage group          | Brallier shale (Dp) (1658); Black, brown and drab shales and fine-grained sandstones. |
|          |                      | Harrell shale (Dpa) (300); Fissile, very thin-bedded carboniferous, black and drab shale |
|          | Hamilton (Dha) (610); Brown, black, and purple shale with impure limestone near the top. |
|          | Marcellus (Dm) (100); Brown and black shale. Ridgeley sandstone |
|          | Oriskany group (Do) (200); Shriver chert and sandstone |
|          | Helderberg (Dh) (150); Keyser and New Scotald limestones. |
|          | Cayugan series (Sca) (698); McKenzie limestone, Wills Creek shale and Tonoloway limestone. |
| Silurian | Clinton (Sc) (890); Brown and green, soft shales and limestones and oolitic iron ore. |
|          | Tuscarora (St) (495); White, gray and purple sandstones and quartzites. |
|          | Juniata (Oj) (490-700); Red shales and sandstones. |
|          | Oswego (Oo) (838); Brown and gray sandstone and conglomerate. |
|          | Reedsville (Or) (825); Black, brown and drab, slaty shales and sandstones. |
|          | Trenton (Ot) (791); Highly fossiliferous thin-bedded limestone and black to brown shale. |
|          | Black River Group (Obr) (182); This group includes the Rodman and Lowville limestones, which are usually pure, blue to gray, rocks. The Lowville contains the important quarry rock. |
|          | Chazy (Carlim and Pamela, Ppc) (260); Blush limestone. |
| Ordovician | Bellefonte (Ob) (1911); Dolomite with a thin bed of sandstone |
|          | Axemann (Oa) (480); Pure fossiliferous limestone with dolomitic limestone and reddish conglomerate. |
| Canadian | Beeckmantown          | Nittany (6n) (1206); Coarse light to dark dolomite with much |
chert in lower portions.

Stonehenge (Cs) (633); Limestone "edgewise" conglomerate, limestone conglomerate and calcareous shales.

Ozarkian

Mines Dolomite (Cm) (150); Cherty Dolomite and siliceous oolite.

Gatesburg (Cg) (800); Interbedded dolomite and sandstone.

Warrior (Cw) (688); Limestone, oolitic limestone and beds of shale.

Cambrian

There is thus represented in this quadrangle almost a complete section of Palaeozoic sediments. Many of these are fossiliferous and some carry an abundance of fossils. Those which may be said to be highly fossiliferous are the Stonehenge, Axemann, Black River, Trenton, Helderberg Oriskany, Hamilton and Chemung. The Warrior, Chazy, Reedsville, Clinton, Marcellus and lower Portage carry a good many fossils, while the Gatesburg, Nittany, Bellefonte, Tuscarora and upper Portage contain very few fossils and in most places none at all. The Oswego, Juniata, Catskill, Pocono, Mauch Chunk and Pottsville seem to be devoid of animal fossils, but a few plant remains are found in the three latter formations.

In the Warrior limestone the fossils are mostly trilobites and cryptozoons, and in the Ore Hill formation cryptozoons, the structures of which are often preserved in chert, which has replaced the limestone. In the Stonehenge the remains consist of brachiopods, gastropods, trilobites and a few graptolites, the latter in the shales near the base. The fossils are abundant in the upper and lower beds of this formation. The Nittany contains a few gastropods and the Axemann fossils are found in the Bellefonte dolomite are of gastropods. In the Chazy brachiopods are the chief fossils while in the Black River group corals, crinoids, brachiopods and gastropods are abundant.

The Trenton is the most highly fossiliferous formation of all those in the quadrangle. It contains abundant brachiopods, trilobites, bryozoans, and gastropods as well as some corals. The Reedsville carries a few trilobites and in places many brachiopods, crinoids and gastropods. The Tuscarora shows traces of a fossil called Arthrophyucus allegheniensis, which has been regarded by some as a plant but by many others as the burrows of a marine worm.

The other formations carry the ordinary groups of fossils.

The Helderberg shows the chain coral, Halysites catenulatus, and the coral resembling a honeycomb, called Favosites,
while the Oriskany carried a brachiopod called Hipparionyx proximus. The casts of this fossil strongly resemble the track of a horse’s hoof and at Milesburg it looks almost as if a small colt had been walking on the Oriskany sandstone. Besides this fossil the brachiopods Spirifer arenosus and Rensselaeria ovoides are found in abundance. In the limestone beds of the Hamilton the "cup" corals are abundant and the upper Chemung shales yield an enormous number of brachiopods.

# From the "Outline of Practicum Work in General Geology" of the Department of Geology, Pennsylvania State College.
Composite section of the Silurian and Lower Devonian of the Bald Eagle Valley, based on detailed sections as measured by F.M. Svartz

Section at gap in Bald Eagle Mountain near Howard, Pa.

Section at Montoursville, near Williamsport, Pa.

**Silurian System**

**Clinton Group**

**Howard ss.**

**Tuscarora ss.**

**Rose Hill shale**

**Rochester shale**

**McKenzie shale and limestone**

**Wills Creek green shale**

**Tonaloway limestone**

**Devonian System**

**Helderbergian**

**Keyser limestone**

**New hobby**

**Shriver clay**

**Ridgeley ss.**

**Marcellus sh.**

**Spirefer renosus**

**Spirefer macropleurus**

**Ectomoria minuta**

**Beyrichia moodeyi**

**Drepanellina clarki**

**Dalminites limulus**

**Stomatop ericidae**

**Gladopora rectilineata**

**Chonetes**

Thickness uncertain may be affected by minor folding.
STRUCTURE SECTION OF THE BELLEFONTE QUADRANGLE.
DESCRIPTIONS OF GEOLOGIC SECTIONS

OF

BLAIR AND HUNTINGDON COUNTIES, PENNSYLVANIA

BY

CHARLES DUTTS
Description of Geologic Sections of Blair and Huntingdon Counties, Pennsylvania

by
Charles Butts

<table>
<thead>
<tr>
<th>Formation</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Allegheny formation</td>
<td>Shale and sandstone, with workable coal beds 200 ft.</td>
</tr>
<tr>
<td>Pottsville formation</td>
<td>Mainly sandstone, clay, and shale, with coal locally in middle. 130-280 ft.</td>
</tr>
<tr>
<td>Mauch Chunk shale</td>
<td>Mainly lumpy, red shale or mudrock, with 80 feet of thick-beded sandstone at bottom to west. A little thin sandstone and limestone to east. Mostly of Chester age. Siliceous crossbedded limestone to west (Loyalhanna limestone); gray and red, partly argillaceous limestone to east. (Trough Creek limestone of I.G. White) Warsaw age? 180-1000 ft.</td>
</tr>
<tr>
<td>Pocono formation</td>
<td>Thick-beded, gray sandstone; Burgoon mem-ber, at top; shale, red shale, and sandstone below. Conglomerate at bottom to east. Thickest to east, in Broad Top Mountain. Most red shale to west on Allegheny front. Osage age. 1130-1400 ft.</td>
</tr>
<tr>
<td>Catskill formation</td>
<td>Lumpy, red shale or mudrock, thick-beded, micaeous red sandstone. 80 per cent red. Gray and greenish shale and gray sandstone with marine fossils, 20 per cent. Spirifer disjunctus, Camaroticchia contracta, Gymmysia elliptica, Pteronites rostratus, and others. 2000-2500 ft.</td>
</tr>
<tr>
<td>Chemung formation</td>
<td>Mostly shale with thin sandstone layers. Some thicker sandstone and conglomerate members. Upper 1,000 feet largely purplish or chocolate colored to west on Allegheny front, and the same with red shale layers in the upper 500 feet on Raystown Branch of Juniata River on the east. Lower 2,000 feet gray and greenish. Chemung fossils common to abun from bottom to top. Spirifer disjunctus at very bottom on Allegheny front. 2400-3300 feet.</td>
</tr>
<tr>
<td>Brallier formation</td>
<td>Fine-grained, siliceous shale in thick, even layers revealing their fissility on weathering. Largely wavy or dimpled laminae, some even and</td>
</tr>
</tbody>
</table>

Harrell shale

Dove and black fissile (paper) shale. Black at bottom to west (Burket member). Black and dove interbedded to east. Buchiola retrostriata, Paracardium doris, Pterochoeni fragilis, Styliola fissurella, Probloceras lutheri. Lower Portage. 250 ft.

Hamilton formation

Hackly shale at top, weathers green; impure limestone layers in top 10 to 20 feet. Dark shale with thin even sandstone layers in middle to west, three thick sandstone members to east. Lower one-third dark olive shale grading into Marcellus shale below. Chonetes aurora in 1 foot limestone at very top (Tully?, Upper Devonian). Common Hamilton fossils abundant in hackly shale in upper one-third. Fossils scarce below. 800-1200 feet.

Marcellus shale

Black fissile shale with Leiorhynchos limitaris and Styliola fissurella. 150 ft.

Onondaga formation

Dark shale with limestone layers. Odontopleura aegeria. Anoplotheca ocuptiplicata and other fossils. 50 ft.

Ridgely sandstone

Coarse thick-bedded sandstone. Common Oriskany fossils plenty. Upper Oriskany. 100 ft.

Shriver limestone

Thin-bedded siliceous limestone. Dalmanites stemmatus?, Craterellina robusta, Actinopteria textilis, Chonetes hudsonica, and many other Oriskany fossils. Lower Oriskany. 200 ft.

Helderberg limestone

Thick-bedded gray limestones (Keyser, Coeymans, New Scotland). Gypidula prognostica, Gypidula coeymanensis, Spirifer macropleura. 150 ft.

Tonoilay limestone

Thin-bedded limestone. Fossils few, Lepidoptera alta?. 450 ft.

Wills Creek shale

Dove, calcareous, fissile shale, a little limestone. Fossils are very scarce. Lepidoptera alta?. Bloomsburg red member, shale, red and green, impure limestone and red sandstone- bottom 50 to 150 feet. 600 ft.

McKenzie limestone

Limestone and shale; fairly fossiliferous. Klothodenella abundant. 275 ft.
Clinton formation
Mainly greenish shale weathering purplish. Some sandstone. Thin but workable iron ore beds. Rather fossiliferous. *Anabiotheca hemispherica*, *Beyrichia* and many other ostracods. 800 ft.

Tuscarora quartzite

Juniata formation
Red lumpy shale or mudrock, red and greenish gray sandstone. Some finely cross laminated. No fossils. 850 ft.

Oswego sandstone

Reedsville shale

Trenton limestone
Thin-bedded black limestone weathering with a gray film on surface. Sparsely fossiliferous. Cryptolithus tessellatus = Trinucleus concentricus, Plectambonites serica. 320 ft.

Rodman limestone
Dark crystalline limestone weathering with a rough granulated surface; very characteristic and persistent. Fossiliferous. Schinosphaerites zone at top. Upper Black River. 30 ft.

Lowville limestone
Dark, thick-bedded, pure limestone, glassy to fine-grained. Extensively quarried for flux. Streptoplema profundum, Tetradium cellulosum, Beastracia gracilis, Lichonaria typa?. Lower Black River. 180 ft.

Carlin limestone

Bellefonte dolomite
Thick-bedded dolomite yielding much dense chert. Fossils scarce. 1000 ft.

Axeman limestone
Thin-bedded blue limestone with dolomite layers. Fossils. *Liospira strigata*, *Hormontoma artemesia*,
Hormotoma linearis, Dalmanella wempelei? Bolocephalus seeleyi, 100 ft.

Nittany dolomite
Thick-bedded, cherty dolomite. Fossils, but not abundant. Lecansepora (Ophiolita) compacta, Eocyliopterus planidorsalis, Eocyliopterus planidorsalis, Syntraphia lateralis, Cryptozoon stecci, 1000 ft.

Larke dolomite

Mines dolomite
Cherty dolomite, oolitic, yields much oolite and platy scoriaceous chert. Cryptozoon, 2 species, common. 250 ft.

Gatesburg formation
Thick-bedded, steely blue, coarsely crystalline, dolomite with many interbedded quartzite layers up to 10 feet thick. Surface deeply covered with sands and strooms with quartzite boulders. Considerable silicified oolite. Ore Hill limestone member, thin-bedded, blue limestone; several species of trilobites nearest relatives of which are in the Hoyt limestone of New York. Stacy dolomite member coarse, thick-bedded, steely blue, but without quartzite. 1750 ft.

Warrior limestone
Thick and thin-bedded, blue limestone with thin siliceous shaly layers or partings. A few thin quartzite layers and an occasional bed of limestone full of large well-rounded quartz grains. Some oolite. Cryptozoon common. Several species of trilobites. Villardia avita, 250 ft.

Pleasant Hill limestone
Thick-bedded limestone at top, fossils. Acrocephalites aoris. Argillaceous thin-bedded limestone at bottom weathering to shale. 600 ft.

Waynesboro Formation
Sandstone, conglomerate, and red and greenish shale. 250 ft.

# From the American Journal of Science, Vol. XLVI, September, 1918
<table>
<thead>
<tr>
<th>FORMATIONS</th>
<th>COLUMNAR SECTION</th>
<th>Thickness in feet</th>
<th>Minor Divisions</th>
</tr>
</thead>
<tbody>
<tr>
<td>Allegheny Formation</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Pottsville Formation</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Mauch Chunk shale</td>
<td></td>
<td>130-280</td>
<td>Homewood sandstone Mercer</td>
</tr>
<tr>
<td></td>
<td></td>
<td>180</td>
<td>shale Connoquenessing ss</td>
</tr>
<tr>
<td></td>
<td></td>
<td>1000</td>
<td>Loyalhanna-Trough Cr Is</td>
</tr>
<tr>
<td>Pocono formation</td>
<td></td>
<td>1130-1400</td>
<td>Burgooon sandstone</td>
</tr>
<tr>
<td></td>
<td></td>
<td>2000-2500</td>
<td></td>
</tr>
<tr>
<td>Catskill formation</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>2400-3300</td>
<td>Saxton conglomerate</td>
</tr>
<tr>
<td>Chemung formation</td>
<td></td>
<td></td>
<td>Allegrippis sandstone</td>
</tr>
<tr>
<td></td>
<td></td>
<td>250</td>
<td>Pine Ridge sandstone</td>
</tr>
<tr>
<td></td>
<td></td>
<td>1350</td>
<td></td>
</tr>
<tr>
<td>Brallier shale</td>
<td></td>
<td>1800</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>250</td>
<td>Burket black shale</td>
</tr>
<tr>
<td></td>
<td></td>
<td>250</td>
<td>Fully limestone</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>HAMILTON</td>
<td></td>
<td>800</td>
<td></td>
</tr>
<tr>
<td>Marcellus shale</td>
<td></td>
<td>1200</td>
<td></td>
</tr>
<tr>
<td>Onondaga form</td>
<td></td>
<td>150</td>
<td></td>
</tr>
<tr>
<td>Ancient</td>
<td></td>
<td>180</td>
<td></td>
</tr>
<tr>
<td>Shriner Is.</td>
<td></td>
<td>200</td>
<td></td>
</tr>
<tr>
<td>Baldsberg Is.</td>
<td></td>
<td>150</td>
<td></td>
</tr>
<tr>
<td>SILLIAN</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Tonoloway limestone</td>
<td></td>
<td>450</td>
<td></td>
</tr>
<tr>
<td>Wills Creek shale</td>
<td></td>
<td>600</td>
<td>Bloomsburg red member</td>
</tr>
<tr>
<td>McKenzie limestone</td>
<td></td>
<td>275</td>
<td></td>
</tr>
<tr>
<td>FORMATIONS</td>
<td>COLUMNAR SECTION</td>
<td>Thickness in feet</td>
<td>Miner Divisions</td>
</tr>
<tr>
<td>-------------------</td>
<td>------------------</td>
<td>-------------------</td>
<td>---------------------------------------</td>
</tr>
<tr>
<td>Brallier shale</td>
<td></td>
<td>1350</td>
<td>Fine Ridge sandstone</td>
</tr>
<tr>
<td>Farrell shale</td>
<td></td>
<td>1600</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>250</td>
<td>Burkett black shale</td>
</tr>
<tr>
<td>Hamilton formation</td>
<td></td>
<td>800</td>
<td>Tonolovay limestone</td>
</tr>
<tr>
<td>Orcoellus shale</td>
<td></td>
<td>1200</td>
<td></td>
</tr>
<tr>
<td>Galena</td>
<td></td>
<td>160</td>
<td></td>
</tr>
<tr>
<td>Ristley</td>
<td></td>
<td>190</td>
<td></td>
</tr>
<tr>
<td>Wilson is.</td>
<td></td>
<td>200</td>
<td></td>
</tr>
<tr>
<td>Massera is.</td>
<td></td>
<td>150</td>
<td></td>
</tr>
<tr>
<td>Tenoch Form.</td>
<td></td>
<td>450</td>
<td></td>
</tr>
<tr>
<td>Alto form.</td>
<td></td>
<td>680</td>
<td></td>
</tr>
<tr>
<td>Schumard Form.</td>
<td></td>
<td>145</td>
<td></td>
</tr>
<tr>
<td>Silurian</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>CAYUGAN</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>MISSISSIPPIAN</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>DEVONIAN ADJACENT</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Cottsville Form.</td>
<td></td>
<td>1300-2200</td>
<td>Emmetted shal. stone Mercer</td>
</tr>
<tr>
<td>Mauch Chunk shale</td>
<td></td>
<td>130</td>
<td>shale Conacquen</td>
</tr>
<tr>
<td></td>
<td></td>
<td>1000</td>
<td>shal. as</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Merivs Throg Cr. Is.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>1130-1400</td>
<td>Burragan sandstone</td>
</tr>
<tr>
<td>Catskill formaion</td>
<td></td>
<td>2000-2500</td>
<td></td>
</tr>
<tr>
<td>Chemung formaion</td>
<td></td>
<td>2400-3300</td>
<td>Sexten conglomerate</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Allegrippis sandstone</td>
</tr>
<tr>
<td>Portage</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
PART 3

The Leaders and Scenes of the

First Field Conference
FIELD TRIP LEADERS

C. A. Bonine

C. A. Butts

F. M. Swartz

G. A. Ashley

R. M. Stone

Photographs of Bonine and Swartz, courtesy of Pennsylvania State University Library; of Butts, courtesy of the U.S. Geological Survey.
FIELD TRIP SCENES

American Lime and Stone Co.

quarries near Bellefonte

American Lime and Stone Co.

quarries near Bellefonte

Charles Butts
FIELD TRIP SCENES

Descending Horseshoe Curve

Descending Horseshoe Curve

At the outcrop
PART 4

Dedication to C. A. Bonine

and

Bradford Willard's Journal
CHESLEIGH ARTHUR BONINE
E.M., Lehigh University, 1912
Professor Emeritus
Pennsylvania State University

by
Lawrence Whitcomb

The Department of Geology, Lehigh University, is proud to dedicate this guidebook to the 1961 meetings of the Field Conference of Pennsylvania Geologists to a Lehigh alumnus.

In the spring of 1931, C. A. Bonine, who was then Professor of Geology at the Pennsylvania State College, sent out a number of letters to geologists of his acquaintance in Pennsylvania, to geology departments, both academic and commercial, and to a few geologists from the adjacent states. He stated that he had recently read a paper listing the number of geologists in the various states and at that time realized how few of those in Pennsylvania he knew. Feeling that this might be true of many others, he invited all of us to come to State College for the Memorial Day week-end. The plans called for some field trips, but the major objective was that we might become better acquainted with the other geologists located in or working in Pennsylvania.

On Friday, May 29, we arrived for the start of a memorable week-end, (no one who on Saturday walked the Horseshoe Curve in temperatures over ninety will ever forget it) to find a program with the title "Field Conference of Pennsylvania Geologists". That evening at a Smoker, it was decided that Bonine had
started something that must be continued. B. L. Miller of Lehigh and Freeman Ward of Lafayette invited the group to visit the Lehigh Valley in 1932 and George H. Ashley stated that the Pennsylvania Geological Survey would be the host at Harrisburg in 1933. A sound start was assured and the name which Bonine had placed on his first program became the accepted designation of the group.

Now thirty years later, it is appropriate for us at Lehigh to recognize Chesleigh Arthur Bonine, E.M., Lehigh, 1912, as founder of the Field Conference of Pennsylvania Geologists.
Notes from journal of Bradford Willard

FIRST CONFERENCE OF PENNSYLVANIA GEOLOGISTS

State College, 1931

Friday, May 29, 1931

"Stan" [Cathcart] and I in a Ford and the rest [presumably Ashley, Stone, Graeber, Moyer and Schaffner] in a big car to State College for a meeting of the geologists of Pennsylvania. About 40 or 45 present. In p.m. on a trip to see Silurian and Devonian near Howard under Prof. F. M. Swartz. Not a very good section. Dinner at "Old Main" in evening. Very warm, but the hotel, the new "Nittany Lion", excellent.

Saturday, May 30, 1931

Memorial Day. Up about 5 and all of us to Altoona. Thence by train to Gallitzin. From there we hiked back to Altoona around the famous "Horseshoe Curve". Had as a leader Mr. Charles Butts of the U.S.G.S., so famous in Devonian stratigraphy, particularly this section. Very glad to see it under his guidance, for he is an old man and failing.

---

In evening inspected the fine, new Mineral Industries Building at the college.

Sunday, May 31, 1931

Returned to Harrisburg.
PART 5

A Short History and a synopsis

of the Field Conferences
A SHORT HISTORY
OF THE
FIELD CONFERENCE OF PENNSYLVANIA GEOLOGISTS

The History of the Field Conference of Pennsylvania Geologists is told through the roadlogs, stop descriptions, receptions, and informal talks that became the pattern of each of the fifty trips. This pattern was established in 1931 by C. A. Bonine, graduate of Lehigh University and Professor of Geology at The State College of Pennsylvania, who was the organizer and originator of the Field Conference. Bonine's desire to "become better acquainted with the other geologists located or working in Pennsylvania" became a major objective of the Conference. This objective has been well met at the 50 meetings of the Conference, as it has guided geologists to share their knowledge and to look at new interpretations of geological phenomena throughout our Commonwealth.

The success of the Conference is the result, for the most part, of the willing volunteer efforts of geologists of the colleges and universities of Pennsylvania and our nearby states, the Pennsylvania Geological Survey and nearby State Geological Surveys, the U. S. Geological Survey, and geologists from our industrial mineral and fossil fuel companies as well as many other individual geologists. From the beginning, these geologists have prepared detailed road logs and carefully written stop descriptions published as the guidebook for each trip, and have provided able instruction at each stop to explain Pennsylvania's complex geology in the most current interpretation.

Meetings have been held each year since 1931, with the exception of 1942 to 1945 which was due to limitation on travel during World War II, and 1957 when 18 months elapsed between the October 1956 meeting in New Jersey and the Spring 1958 meeting in Maryland's South Mountain.

At the second meeting, hosted by Lehigh University, bylaws were adopted which included the appointment of a permanent Secretary-Treasurer "who must be a member of the Pennsylvania Geological Survey" so as to provide continuity of scheduling, and maintaining records and finances. These bylaws continued in force until 1978 when the Conference incorporated as a Pennsylvania domestic non-profit corporation. The new corporate bylaws created an Executive Committee composed of a Chairman, a Secretary-Treasurer, and the Local Committee Chairman; the first two officers must be members of the Pennsylvania Geological Survey, again to provide continuity.

Dr. Bradford Willard was the first officer and continued as Secretary-Treasurer until 1935. Dr. Lawrence Whitcomb was the Conference officer in 1936 for the sixth annual meeting, conducted by Lehigh University geologists. The sixth conference is significant as the only combined conference held with the New York State Geological Association, and the only Conference held which dealt with anthracite area geology. Dr. Arthur B. Cleaves assumed the permanent office during 1937 and 1938 and was then replaced by longtime Pennsylvania Geological Survey member, Marchant N. Shaffner, who remained in this office for nearly two decades. He was followed by Alan Geyer and then Donald Hoskins, who has been Secretary-Treasurer since 1967. Upon incorporation in 1978, Arthur Socolow was elected Chairman at the annual meeting of the Conference.
Field trips during the first 25 years of the Conference were largely by individual auto, usually with State Police escorts. Minutes of the fifth meeting in Philadelphia state "Despite the size of the party [86] and the necessity of moving a motorcade of 25-30 cars through the thickly settled Philadelphia district, the trip was handled without difficulty, thanks to a trained escort of the Pennsylvania State Highway Patrol." Private cars were used until the middle 1950's when buses were chosen for some of the individual trips in 1954, 1955, and 1959. Since the meeting of 1963, buses have been used in preference to individual cars because of logistical problems as Conference attendance grew. With the one exception in 1967 when one of the buses was struck while parked, no serious accidents have occurred.

Until 1956, the conferences were held in late May and early June, usually over the Memorial Day weekend. In 1956 the meeting was held in late September. The next two meetings in 1958 and 1959 were held in May. Following those years, the Conference has met consistently in the Fall in order to avoid difficulties of scheduling around college graduation days. Since 1963 the Conference has usually met on the Thursday, Friday, and Saturday of the first weekend in October.

Attendance on the trips started with 45 in 1931, gradually growing to 99 by 1936 and then fluctuating in the low to middle 100's until 1967 when a record 183 attended. This figure was exceeded in 1981 when, for three years in succession, over 200 attended with the record being 278 in 1983.

Subjects of the Conferences have usually centered around the research interests of the host organizations. Areas visited on more than one occasion have been Centre County, the Philadelphia and Pittsburgh areas, the Harrisburg-York-Gettysburg area, Lancaster County, the Allentown-Bethlehem-Easton area, and along our major highways and rivers where outcrops are more prevalent. Areas that have not often been visited are the northern tier of counties and southwestern Pennsylvania, with several counties never having been traversed. The record of the Conferences shows that revisits to areas of former trips are productive, as the dynamics of geology require the application of new interpretations to old and familiar outcrops.

Of the 50 trips conducted by the Conference, most have been conducted solely by the host organization. Credit for these goes to the Pennsylvania Geological Survey (9), The Pennsylvania State University and its predecessor, State College (5), Lehigh University (3), Bryn Mawr College (2), Franklin and Marshall College (2), the New Jersey Geological Survey (2), the U. S. Geological Survey (2), Bucknell University (1), Johns Hopkins University (1), Lafayette College (1), the Maryland Geological Survey (1), the Pittsburgh Geological Society (1), the Virginia Geological Survey (1), the West Virginia Geological Survey (1). The remaining 18 conferences were co-hosted, or field trip support was provided, by many of the aforementioned organizations, plus The Academy of Natural Sciences of Philadelphia, the Carnegie Institute of Technology, the Carnegie Museum of Pittsburgh, Delaware County Christian School, East Tennessee State College, Edinboro State College, George Washington University, Hobart and William Smith Colleges, LaSalle College, Mansfield State College, The National Science Foundation, the New Jersey Division of Water Resources, Ohio Wesleyan College, Princeton University, Rider College, Rutgers University, Slippery Rock State College, SUNY College at Fredonia, the University of North Carolina, the University of Pennsylvania, and Villanova University.
SYNOPSIS OF FIFTY YEARS
OF THE FIELD TRIPS OF THE
FIELD CONFERENCE OF PENNSYLVANIA GEOLOGISTS

   Road logs were not included with this guidebook but five trips were conducted. 1. American Lime and Stone Company at Bellefonte.
   Conference Host: Pennsylvania State College
   Conference Headquarters: State College, PA
   Leaders: Chesleigh Bonine, Charles Butts, Ralph Stone, Frank Swartz
   Date: May 29-31, 1931

   Six field trips with road logs are in the guidebook. Two one-half day trips examined Triassic rocks and the slate and cement district. The main excursion traversed the Lehigh and Delaware gaps followed by three one-half day trips in the Saucon Valley, Pleistocene drifts, and the Spitzenberg.
   Conference Hosts: Lehigh University and Lafayette College
   Conference Headquarters: Easton, PA
   Date: May 28-30, 1932

   This conference included six field trips in central Pennsylvania.
   5. Western Perry County.
   Conference Host: Pennsylvania Geological Survey
   Conference Headquarters: Harrisburg, PA
   Leaders: G. Ashley, C. Graeber, W. Hickok, B. Willard, R. Stone
   Date: May 27-29, 1933

   Areas near Pittsburgh were explored during this conference. Trips conducted were: 1a. Wildwood underground coal mine; 1b. Herron Hill Reservoir and Allegheny River Boulevard; 1c. the Carnegie Museum.
   2. Beaver Valley area. 3. Uniontown and Ohiopyle area.
   Conference Hosts: University of Pittsburgh, Carnegie Institute, and Gulf Corporation
   Conference Headquarters: Pittsburgh, PA
   Leaders: C. Fettke, H. Leighton, R. E. Sherrill, W. A. Copeland
   Date: May 25-27, 1934

Five field trips were taken during this conference. They included:
1. Physiographic trip southwest of Philadelphia.
3. Crystalline rocks of the Piedmont north and west of Philadelphia.
4. Lower Paleozoic Formations and their relations to the Pre-Cambrian rocks.
5. Coastal Plain excursion in New Jersey.

Conference Hosts: Academy of Natural Sciences, Bryn Mawr College,
Lehigh University, University of Pennsylvania,
and Atlantic Refining Co.

Conference Headquarters: Philadelphia, PA
Leaders: L. Dryden, S. Gordon, E. Watson, B. L. Miller, F. Ehrenfeld,
P. Storm, H. Kummel
Date: May 31-June 2, 1935


Conference members examined the geology of the anthracite region as well as the mining methods used and the problems encountered while mining coal as well as mine fires. Road logs are indicated for trips in the northern, middle and southern anthracite fields. This conference was conducted in association with the New York State Geological Association.

Conference Host: Lehigh University
Conference Headquarters: Scranton, PA
Leaders: B. L. Miller, D. M. Fraser, L. Whitcomb
Date: May 22-24, 1936


The stratigraphy of the oil fields of the Bradford District is discussed. Two field trips traversing McKean and Warren Counties are included. A trip was also conducted to Presque Isle to study Pleistocene and shoreline features.

Conference Headquarters: Bradford, PA
Leaders: C. Fettke, K. Caster, H. Leighton
Date: May 29-30, 1937


This field trip traversed northern Virginia, and parts of West Virginia, and Maryland examining Paleozoic rocks and included a trip on the Skyline Drive. The guidebook was published as Virginia Geological Survey Guide Leaflet No. 1.

Conference Host: Virginia Geological Survey
Conference Headquarters: Cumberland, MD
Leaders: F. M. Swartz, C. Butts, G. Stose, A. Bevan
Date: May 28-30-1938


This field trip went from Morgantown to Berkeley Springs, WV examining the major outcrops along the route. A geologic column is included.
Conference Host: West Virginia Geological Survey
Conference Headquarters: Morgantown, WV
Leader: E. T. Heck
Date: May 28-30, 1939

Four field trips were conducted. 1. Geology of the Culvers Gap to Newfoundland area. 2. Geology of the Franklin district. 3. Physiography, glaciation and soils. 4. Cretaceous and tertiary stratigraphy of the Coastal Plain.
Conference Hosts: New Jersey Geological Survey, Rutgers University, and Princeton University
Conference Headquarters: Newton, NJ
Date: May 30-June 1, 1940

The field trip examined Cambrian-Pennsylvanian rocks along the Allegheny Front.
Conference Hosts: Pennsylvania Geological Survey
Conference Headquarters: Johnstown, PA
Leaders: F. M. Swartz, G. Ashley, M. Shaffner, A. B. Crichton
Date: May 30-June 1, 1941

——— WORLD WAR II ———
interrupted scheduling the conference during 1942-1945

The trip outlined was concerned with lower Paleozoic rocks of the Appalachian Valley and Ridge Province and the Allegheny Plateau. Upper Devonian to Pennsylvanian rocks along the Horse Shoe Curve near Altoona were also included.
Conference Host: Pennsylvania State College
Conference Headquarters: State College, PA
Leaders: P. D. Krynine, G. M. Kay, F. M. Swartz
Date: May 30-June 2, 1946

Northampton and Lehigh Counties were explored during this field conference. Field trips outlined included: 1. Nazareth Cement Plant. 2. Saucon Valley Zinc Mines and Triassic intrusives. 3. The Valley of the Lehigh. 4. West from Bethlehem. 5. Triassic fanglomerates of Delaware Valley.
Conference Host: Lehigh University
Conference Headquarters: Bethlehem, PA
Leaders: B. Willard, L. Whitcomb, T. E. Stephenson, R. H. Gault, F. Betz
Date: May 30-June 1, 1947
South-central Pennsylvania was the site of this field conference.
Four field trips are outlined in this guidebook. 1. South Mountain.
2. Pennsylvania Turnpike. 3. Cornwall Mine. 4. Susquehanna-Juniata
River.
Conference Host: Pennsylvania Geological Survey
Conference Headquarters: Harrisburg, PA
Leaders: R. M. Foose, R. C. Stephenson, F. M. Swartz,
A. B. Cleaves, D. M. Fraser, G. L. Adair, B. Willard
Date: May 28-30, 1948

This conference, centered in Lancaster County, included three field
trips. 1. Old metal mines and Mine Ridge Anticline. 2. "Martic
Overthrust" area. 3. Appalachian drainage and Pleistocene terraces.
Conference Host: Franklin and Marshall College
Conference Headquarters: Lancaster, PA
Leaders: E. Cloos, R. Chapman, G. Biemesderfer, J. Moss, J. Freedman,
R. M. Foose, E. Sampson, H. Meyerhoff
Date: May 27-29, 1949

Three field trips, spanning Allegheny County, are included. 1. Visit
to Jones and Laughlin Steel Company, Aliquippa Plant. 2. Glacial
Conference Hosts: Pittsburgh Geological Society, University of
Pittsburgh, Carnegie Museum, and Carnegie Institute
of Technology
Conference Headquarters: Pittsburgh, PA
Leaders: A. I. Ingham, W. S. Lytle, F. Preston, C. E. Prouty,
R. E. Sherill, W. M. Fieldler, P. R. Stewart, R. E. Boyles
Date: May 26-28, 1950

Guidebook Illustrating the Geology of the Philadelphia Area. Seventeenth
The geology of the Chester Valley was explored, giving participants a
general overview of the mineralogy and geology of the area.
Conference Host: Bryn Mawr College
Conference Headquarters: Bryn Mawr, PA
Leaders: M. E. Johnson, L. Dryden, E. Watson, D. Wyckoff,
A. W. Postel, H. E. McKinstry
Date: June 1-3, 1951

Sussex County, New Jersey. Eighteenth Annual Field Conference of Pennsylvania
Geologists, 1952.
Field trips were conducted. 1. Pleistocene geology. 2. Dikes of
special petrologic interest. 3. Silurian and Devonian stratigraphy.
4. Cambro-Ordovician and Pre-Cambrian rocks. 5. Silurian-Devonian of
Nearpass quarries.
Conference Host: New Jersey Geological Survey
Conference Headquarters: Newton, NJ
Date: May 30-June 1, 1952
This conference, held in Northampton County, summarized the geology of the area through its four field trips. 1. North from Easton to slate and cement areas. 2. Mineral collecting trip to serpentine quarries north of Easton. 3. North from Easton to Panther Valley anthracite region. 4. South from Easton to Riegelsville.
Conference Host: Lafayette College
Conference Headquarters: Easton, PA
Date: May 29-31, 1953

The field trips taken at this conference were almost entirely in Lebanon County. The routes were in the Great Valley section of the Ridge and Valley province. Trips included: 1. Cornwall iron deposits. 2. Cambro-Ordovician limestones of Lebanon County. 3. Martinsburg Formation and associated eruptive rocks of the Jonestown area.
Conference Host: Pennsylvania Geological Survey
Conference Headquarters: Hershey, PA
Leaders: C. Gray, J. R. Moseley, D. B. McLaughlin, C. E. Prouty
Date: May 28-30, 1954

This field conference provided participants with a general review of the geology of parts of central Pennsylvania. They were: 1. Stratigraphy of Ordovician limestones and dolomites of Nittany Valley from Bellefonte to Pleasant Gap. 2. Stratigraphy and structure of Ridge and Valley area from University Park to Tyrone, Mt. Union, and Lewistown. 3. Stratigraphy and structure of Pennsylvania sediments of the Plateau area near Philipsburg and Clearfield.
Conference Host: Pennsylvania State University
Conference Headquarters: University Park, PA
Leaders: F. M. Swartz, M. Rones, A. D. Donaldson, J. P. Hea, P. D. Krynine, R. P. Nickelsen, and E. G. Williams
Date: May 27-29, 1955

This guidebook summarized the geology of the major physiographic provinces and Coastal Plain sediments near Trenton, New Jersey, and included a stop at Limeoet, Bucks County, Pennsylvania.
Conference Host: New Jersey Geological Survey
Conference Headquarters: Trenton, NJ
Leaders: M. E. Johnson, F. J. Markewicz, K. Widmer, B. Willard
Date: September 28-29, 1956

--- No conference scheduled in 1957 ---

This guidebook was published as the Johns Hopkins University Studies in Geology No. 17 and is available from University Microfilms, 300 North Zeeb's Road, Ann Arbor, Michigan 48106.
The South Mountain anticlinorium and the Appalachians to the west are examined. The route does not extend into Pennsylvania.

The field conference celebrated the centennial of the Drake well and included trips throughout northwestern Pennsylvania. 1. The glacial geology of Crawford and Erie Counties. 2. Bedrock and oil geology of northwestern Pennsylvania and the great Oilorado. 3. Erosion channel in Penn Dixie limestone mine.

A history of the Drake well and a visit to the museum are included in this guidebook.

Conference Host: Pennsylvania Geological Survey
Conference Headquarters: Titusville, PA
Leaders: V. C. Shepps and W. S. Lytle
Date: May 15-17, 1959


This trip examined the intensely deformed, metamorphosed and intruded inner Piedmont, Triassic fanglomerates, nappe structures and Ordovician volcanics.

Conference Host: Franklin and Marshall College
Conference Headquarters: Lancaster, PA
Date: October 22-23, 1960


The field trip was designed to examine and compare the structural features of the rocks of the Reading Hills and those of the Lehigh Valley in Northampton and Lehigh Counties, Pennsylvania and adjacent parts of New Jersey and to examine the relationship between early Paleozoic tectonism and sedimentation.

Conference Host: Lehigh University
Conference Headquarters: Bethlehem, PA
Date: October 20-21, 1961


The general geology of Devonian and Carboniferous rocks in the Appalachian Plateau of Pennsylvania are examined.

Conference Hosts: University of Pittsburgh and Pennsylvania Geological Survey
Conference Headquarters: Somerset, PA
Leaders: N. K. Flint, A. S. Cate, G. Klein, W. Leeper, S. Philbrick
Date: October 19-20, 1962

The field guide describes, evaluates, and interprets the stratigraphic and structural framework of Catskill and related strata in northeast Pennsylvania. A two day field trip, including eleven stops, begins and ends in Stroudsburg.

Conference Host: Pennsylvania Geological Survey
Conference Headquarters: Stroudsburg, PA
Date: October 11-12, 1963


This field trip is concerned with the existence, character, and genesis of cyclothems in the Carboniferous rocks of western Pennsylvania. It provides conceptual and physical frameworks within which some important aspects of Carboniferous sedimentation and stratigraphy can be observed.

Conference Host: Pennsylvania State University
Conference Headquarters: Clearfield, PA
Leaders: E. G. Williams, J. C. Ferm, A. L. Guber, R. E. Bergenback
Date: October 10-11, 1964


The guide includes two field trips: 1. Stratigraphy of Upper Pennsylvanian and Lower Permian rocks, Washington County. 2. Stratigraphy of the Pottsville and Allegheny groups of Mercer and Lawrence Counties.

Conference Headquarters: Pittsburgh, PA
Leaders: B. H. Kent, J. B. Roen, S. P. Schweinfurth, and L. D. Carswell
Date: October 8-9, 1965


The Cumberland and Lebanon Valley stratigraphic sequences are examined at various locations. The structural and stratigraphic discontinuities between them is demonstrated.

Conference Host: Pennsylvania Geological Survey
Conference Headquarters: Harrisburg, PA
Leaders: D. B. MacLachlan and S. I. Root
Date: October 7-8, 1966


The interrelationship of the stratigraphy, structure, geomorphology, glacial geology, and economic geology of the Middle Ordovician through part of the Middle Devonian strata and overlying surficial deposits in
the area between the Delaware and Lehigh Rivers in eastern Pennsylvania is demonstrated by this guide. A two day field trip log is included. 

Conference Headquarters: Stroudsburg, PA 
Leaders: J. B. Epstein and A. G. Epstein 
Date: September 29-30, 1967


The guide for a two day field trip begins and ends in Harrisburg. It contains detailed discussions of mineral deposits of the region. Each deposit is discussed separately. Stops were made at the GAF greenstone quarry, Hanover quarry, Thomasville stone quarry, Bender's quarry, Mt. Holly white clay deposits, Millard quarry, and Eschelmann's quarry.

Conference Host: Pennsylvania Geologic Survey 
Conference Headquarters: Harrisburg, PA 
Date: October 4-5, 1968


A detailed description of the Mississippian Pocono Formation is given. The trip, 240 miles long with nine stops, begins and ends in Hazleton.

Conference Host: Pennsylvania Geological Survey 
Conference Headquarters: Hazleton, PA 
Leader: W. D. Sevon 
Date: October 3-4, 1969


The area visited by this field conference is the northeastern Piedmont of Maryland mainly Baltimore, Cecil, and Harford Counties. The trip does not extend into Pennsylvania.

Conference Host: Maryland Geologic Survey 
Conference Headquarters: Baltimore, MD 
Leaders: W. P. Crowley, M. W. Higgins, T. Bastian, S. Olsen 
Date: October 2-3, 1970


The first trip presents a discussion of the geology, composition, texture, and physical properties of the flagstones of northeastern Pennsylvania and of the properties of flagstone that affect their discovery, development, and use. The second shows environmental problems resulting from the removal of the coal in the northern anthracite field and examines exposures of Pleistocene deposits.

Conference Hosts: Pennsylvania State University and U.S. Geological Survey
Conference Headquarters: Wilkes-Barre, PA
Leaders: S. A. Krajewski, E. G. Williams, J. R. Hollowell
Date: October 8-9, 1971

Stratigraphy, Sedimentology, and Structure of Silurian and Devonian Rocks

This guidebook brings together the varied structural and stratigraphic research concerned with the Allegheny Front. It traces the geology from Pennsylvania southward across Maryland to West Virginia demonstrating the regional continuity of certain stratigraphic and structural trends.

Conference Hosts: Pennsylvania, Maryland, and West Virginia Geological Surveys
Conference Headquarters: Bedford, PA
Date: October 6-7, 1972


The Valley and Ridge Province of the Appalachians has been considered a classic area of relatively simple geologic structures with complete and undeformed Paleozoic stratigraphic sections. Revisions of the structural geology and stratigraphy are demonstrated in this field trip guide.

Conference Host: Pennsylvania Geological Survey
Conference Headquarters: Camp Hill, PA
Date: October 5-6, 1973


The guidebook contains a group of studies dealing with the Pennsylvania Piedmont, including an introduction to crystalline rocks, deformation and metamorphism in the Wissahickon Formation, and an examination of sinkholes.

Conference Host: Bryn Mawr College
Conference Headquarters: King of Prussia, PA
Date: October 4-5, 1974


The character and availability of the Late Wisconsinan drift materials, similarities and differences between the Late Wisconsinan drift and pre-Late Wisconsinan-post Sangamonian drift, the character of the Illinoian glacial drift, the character of deposits of periglacial origin, and the reasoning used in differentiating and dating these various deposits are included in this field guide.

The area examined by this trip is near the boundary between the glaciated and unglaciated sections of the Allegheny Plateau Province. An Illinoian till and a Middle Wisconsinan till, with their respective glaciofluvial deposits, are examined, as are exposures of Mississippian rocks.

Conference Hosts: Slippery Rock and Edinboro State Colleges, and Pennsylvania Geological Survey
Conference Headquarters: Titusville, PA
Leaders: A. N. Ward, W. F. Chapman, M. T. Lukert, J. L. Craft
Date: October 1-2, 1976


The intent of this field trip is to present the subdivision of the Cambro-Ordovician "Kittatinny" carbonate sequence and to cite some case histories of environmental, geohydrologic, and engineering problems. Two field trips, covering northwestern New Jersey, are outlined in the guidebook.

Conference Hosts: New Jersey Division of Water Resources, New Jersey Geological Survey, and Rider College
Conference Headquarters: Stroudsburg, PA
Date: October 6-8, 1977


Sedimentological and geochemical models were presented to account for the primary distribution of the uranium minerals and their enclosing rocks. A post-depositional model was also presented to explain the present localizations of these minerals.

Conference Host: Pennsylvania Geological Survey
Conference Headquarters: Hazleton, PA
Leaders: W. D. Sevon, A. W. Rose, R. C. Smith, and D. T. Hoff
Date: October 6-7, 1978


The authors describe the major purpose of this field conference as to demonstrate the outcrop stratigraphic relationships and nomenclatural changes among the Brallier Formation, Harrell and Burkett Shales, Tully Limestone, and Mahantango Formation. A secondary purpose is to illustrate the facies and faunal changes within the Needmore Shale and Huntersville chert.

Conference Hosts: University of North Carolina, East Tennessee State University, and Pennsylvania Geological Survey
Conference Headquarters: Bedford, PA
Date: October 5-6, 1979

The field conference highlighted the geology of the Pittsburgh area. Included are the geology of the area, coal geology, oil geology, and geologic hazard problems.
Conference Host: Pittsburgh Geological Society
Conference Headquarters: Pittsburgh, PA
Date: October 3-4, 1980

The guidebook was for an area untouched by a geologic study in recent years. Included are the stratigraphy, sedimentology, glacial geology, economic geology, and ground water geology.
Conference Hosts: Pennsylvania Geological Survey and Mansfield State College
Conference Headquarters: Wellsboro, PA
Date: October 2-3, 1981

This field conference allowed participants to examine outcrops, lithologies, and structures of the Martinsburg Formation. The discussion examined the structure, stratigraphy, sedimentology, and plate tectonics of the formation. The first day of the field trip was spent west of Harrisburg in the Great Valley. The second day was spent east of Harrisburg in the allochthonous "Hamburg klippe".
Conference Hosts: George Washington University, Bryn Mawr College, and National Science Foundation
Conference Headquarters: New Cumberland, PA
Date: October 1-2, 1982

This field conference examined the landscape of central Pennsylvania which is dominated by linear ridges and fertile valleys. For the Lower and Middle Silurian units, a pattern in the complex paleoenvironmental patterns that is related to Appalachian Basin configuration, source area tectonics, and sea-level fluctuations, were examined. Strain features which help explain the Alleghenian Orogeny are also examined.
Conference Host: Bucknell University
Conference Headquarters: Danville, PA
Leaders: R. P. Nickelsen and E. Cotter
Date: September 30 to October 1, 1983


Participants had the opportunity to see Cambro-Ordovician rocks of the eastern Hamburg klippe, nearby Ordovician rocks of the Shochary Ridge and the Martinsburg Formation, as well as Silurian and Devonian rocks in the Valley and Ridge north of Reading, PA.
Conference Host: Spitzenburg Hoch Erziehungsanstalt
Conference Headquarters: Wyomissing, PA
Leaders: G. G. Lash, P. T. Lyttle, J. B. Epstein
Date: October 5-6, 1984


The Golden Jubilee Conference returned to topics examined at the first Field Conference emphasizing the advances made in our understanding since that time. In addition, and to emphasize the prominent role geology plays in society today, two applied topics--Geology in the Exploration and Exploitation of Coal, and Application of Quaternary and Tertiary Geology to Environmental Problems in a Carbonate Valley in Central Pennsylvania were presented as was an opportunity to visit an undolomitized Silurian coral-Bryozoan reef.
Conference Host: Department of Geoscience, Pennsylvania State University
Conference Headquarters: State College, PA
Date: October 3-5, 1985