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The Penn State Polylith

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For more than half a century a prominent landmark and source of interest on the Penn State Campus has been the "Polylith," a 33-foot stone column located a few feet south of the Armory.

Erected in 1896 of 281 blocks of building stone from 139 different localities, mostly in Pennsylvania, the polylith has its component layers arranged to represent the geologic column of the rocks of the State, with the oldest rocks at the bottom and the youngest at the top.

Magnus C. Ihlseng, first Professor of Mining Engineering and Geology, who initiated its construction, reported in his letter to President Atherton in 1896: "It exhibits many of the varieties of structural material with which Pennsylvania is endowed and reveals to the architect at a glance the possibilities of artistic combinations from our native products. To the builder, similar information is given together with that afforded by the reports of the physical tests and microscopic examination of its constituent specimens."

The microscopic examination and description of each rock type in the polylith was assigned to William L. Affelder, Class of 1899, who completed the study as a B.S. thesis,** now in the library files. Information on the type of rock, geologic age, location in the polylith, donor and origin (where available), and estimate of worth as a building stone has been abstracted from this thesis to form the accompanying chart and tabulation.

It is both of interest and considerable value to examine the various blocks in the column and compare the amount of crumbling and weathering with the predictions made by Affelder in 1899 of their potential resistance to the elements. Estimates of the author as to building stone value after 50 years of weathering, based entirely on visual examination, has been indicated in the tabulation to show a comparison with the estimated values of 1899.

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** Affelder, William Lewis, "The microtexture of the stones constituting the polylith erected upon the campus of The Pennsylvania State College, together with their adaptability to building purposes." B.S. thesis, 70 ms.p.p., 18 pl., June 12, 1899.

THE PENNSYLVANIA GEOLOGIC COLUMN

GEOLOGIC ERA AND PERIOD		ROCK TYPE OR NAME		THICKNESS IN FEET
MESOZOIC	TRIASSIC	Newark	138-140	7000
PALEOZOIC	PERMIAN	Dunkard	136-137 133-135	1500+
	PENNSYLVANIAN	Monongahela Conemaugh Allegheny	130-132 127-129 117-126	1600
		Pottsville	112-116	
	MISSISSIPPIAN	Mauch Chunk	101-111	2000
		Pocono	97-100	
	DEVONIAN	Catskill Chemung Hamilton Oriskany	88-96 73-87 66-72	8000
	SILURIAN	Keyser & Tonoloway Clinton Tuscarora Juniata, Oswego Martinsburg	31-60 29-30	3000 2500
	ORDOVICIAN	Cambro-Ordovician	28	10,000
	CAMBRIAN	Potsdam	9	200(NY)
IGNEOUS & METAMORPHIC ROCKS		Pre-Cambrian and Triassic rocks	4-8 1-4	

** Rocks reclassified since 1896

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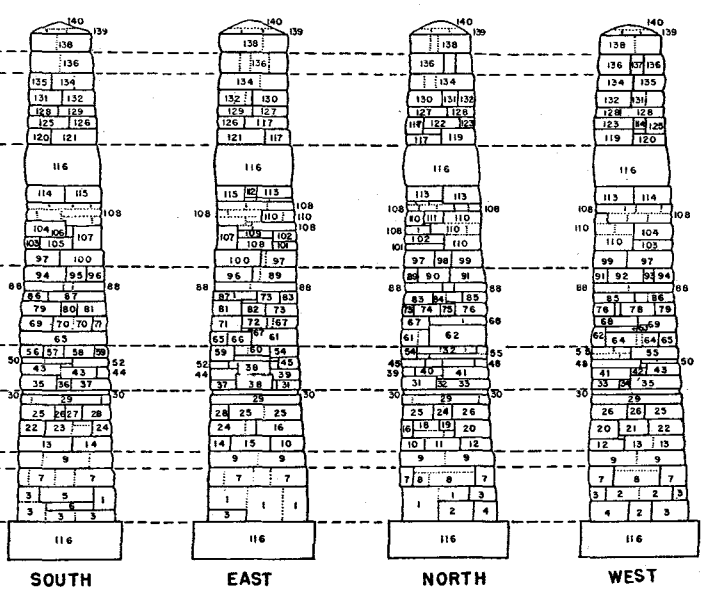
KEY TO THE POLYLITH ON THE CAMPUS OF THE PENNSYLVANIA STATE COLLEGE FROM 1896 to 1949



squirrel on a treadmill. Beyond the fields of science, so beautifully cultivated by research men in colleges and research institutions, lie those great spiritual values which in the long run are at the bottom of every human activity. The human spirit works best when it is unfettered and when it has for its highest objective—Truth. In the attainment of this goal man can discern what constitutes the Good; he can create those moral values which are necessary for the well-being and happiness not only of the individual but of society as a whole.

When education produces the type of man capable of achieving these ideals of Truth and Goodness, then indeed we will have reached the highest level of conservation, the conservation of those spiritual resources which determine the final end of man and make possible the good society.

Obviously, there must be a conservation cycle. (See Chart No. 2.) When enjoying prosperity man should not be engrossed by crass materialism but should remember that moral and basic scientific values are not automatically self-perpetuating. To replenish these higher fountainheads of progress man must give time, energy, and devotion. This means that he must pump back into these higher levels some of the resources made available by applied scientific technological skill.

Just as the ocean, in order to be replenished by rivers, must give some of its substance, in the form of vapor, into the atmosphere to produce creative rain, so must human prosperity and industry contribute their tithe of time, money, and faith to the support of education and research toward the development of spiritual values and good citizenship.

The Penn State Polylith

(Continued from page one)

An interesting insight into the history of the monument is supplied in a letter from William Clinton B. Alexander, now consulting engineer in Washington, D. C., who was instrumental in its construction. "In the summer of 1894, the writer who had just completed his freshman year in the new course in Mining, was employed as secretary and assistant to Dr. Ihlseng in procuring stones for the above named 'monument.'

"Letters explaining the proposition and soliciting specimen building stones were sent to Pennsylvania quarry operators and others interested. As some inducement, prospects were given the privilege of cutting their names on the face of the stones donated.

"The idea created much interest among quarrymen and builders. The response and

CLASSIFICATION OF POLYLITH MEMBERS AS TO NAME, DONOR, LOCATION AND QUALITY AS A BUILDING STONE

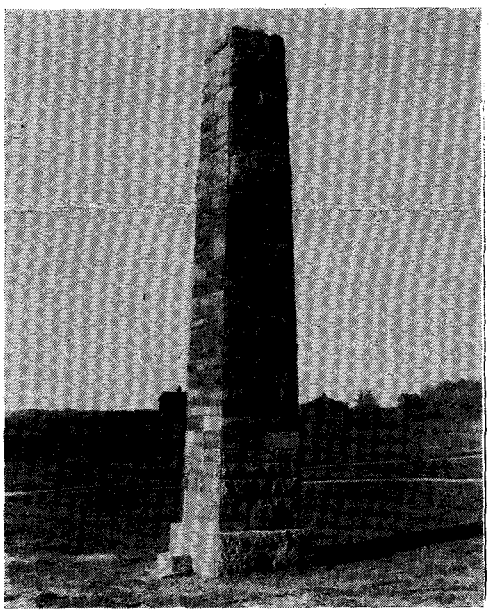
No.	Rock Name	Source of Rock: Individual or Quarry	Source of Rock: Nearest Town	Source of Rock: County or State	Estimated Value as a Building Stone*: 1899**	Estimated Value as a Building Stone*: 1949***
1.	Diorite	....	....	Eastern Pa.	+	+
2.	Diabase	W. Ziegler	Gettysburg	Adams	+	+
3.	Diabase	....	....	Berks	+	++
4.	Madison Pink Gr.	....	....	Mass.	++	++
5.	Hornblende Gr.	....	Leiperville	....	+	+
6.	Granite	....	Lowell	Mass.	+	+
7.	Serpentine	Brinton's Quarry	Thornburg	....	?	—
8.	Gneiss	David Knauer	Chester	Delaware Co.	?	?
9.	Potsdam SS.	Clarion Quarries	Potsdam	New York	+	—
10.	Marble	Black Log. Mt.	....	Juniata	+	+
11.	Dark blue Marble	Schweyer & Liess	K. of Prussia	Montgomery	++	+
12.	Limestone	Coplay Cem. Co.	Coplay	Lehigh	+	?
13.	Marble	Avondale M. Co.	Avondale	Chester	++	++
14.	Marble	....	....	....	++	?
15.	Light blue Marble	Schweyer & Liess	K. of Prussia	Montgomery	++	?
16.	Marble	Kerr Bros.	Wrightsville	York	—	— —
17.	Siliceous Oolite	Wieland's Farm	State College	Centre	—	—
18.	Limestone	....	Lewisburg	Union	—	?
19.	Quartzite	....	Stormstown	Centre	?	++
20.	Limestone	J. B. Smith	Reedsville	Mifflin	+	?
21.	Limestone	Morris' Quarry	Bellefonte	Centre	+	?
22.	Marble	McIlvain Bros.	Bellefonte	Centre	+	+
23.	Limestone	....	Huntingdon	Huntingdon	+	—
24.	Limestone	Markle's Quarry	State College	Centre	?	?
25.	Limestone	Mr. McManus	Tyrone	Blair	—	—
26.	Limestone	....	Mill Hall	Clinton	+	—
27.	Marble	Avondale M. Co.	Avondale	Chester	++	++
28.	Marble	J. H. Landis	Lancaster	Lancaster	+	?
29.	Slate	Slatington Sl. Co.	Slatington	Lehigh	+	—
30.	Slate	Chapman Sl. Co.	....	Northampton	+	—
31.	Quartzite	H. F. Peters	Reedsville	Mifflin	+	—
32.	Limestone	....	....	....	+	?
33.	Oneida SS	....	Shingletown	Centre	+	—
34.	Medina red SS	....	Tyrone	Blair	—	+
35.	Sandstone	Hunt. Gl. Wks.	Huntingdon	Huntingdon	+	—
36.	Medina red SS	....	....	....	—	?
37.	Medina red SS	....	Milroy	Mifflin	—	+
38.	Verde Antique	C. K. Williams	Easton	Northampton	+	+
39.	Quartzite	....	Waddle Sta.	Centre	+	+
40.	Medina gray SS	....	....	....	?	+
41.	Medina red SS	Charles Bruss	Centre Hall	Centre	—	—
42.	Sandstone	....	....	Blair	—	+
43.	Medina red SS	H. F. Peters	Pleasant Gap	Centre	+	—
44.	Medina red SS	Charles Bruss	Pleasant Gap	Centre	+	+
45.	Medina red SS	....	....	....	?	+
46.	Sandstone	....	....	....	+	+
47.	Conglomerate	....	....	....	—	—
48.	Sandstone	H. F. Peters	Reedsville	Mifflin	?	+
49.	Medina red SS	....	....	....	—	—
50.	Medina red SS	....	....	....	+	+
51.	Limestone	....	....	....	—	?
52.	Medina red SS	A. Myers	....	Sullivan	—	?
53.	Medina red SS	....	....	....	—	?
54.	Limestone	....	Lewistown	Mifflin	+	+
55.	Limestone	....	....	Juniata	+	—
56.	Limestone	H. F. Peters	Reedsville	Mifflin	—	—
57.	Calcareous SS	....	....	....	+	—
58.	Limestone	....	....	....	+	?
59.	Limestone	....	....	....	—	—
60.	Limestone	....	....	Juniata	+	+
61.	Limestone	....	Blossburg	Tioga	—	?
62.	Limestone	....	E. Waterford	Juniata	—	—
63.	Marble	....	....	....	—	—
64.	Limestone	....	....	....	—	—
65.	Limestone	....	....	Tioga	?	—
66.	Oriskany SS	....	....	Juniata	— —	— —
67.	Limestone	....	....	Union	+	+
68.	Limestone	Reed's Gap	....	Centre	—	+
69.	Tully Limestone	Tuscarora Mt.	....	....	—	?
70.	Limestone	Tuscarora Mt.	....	....	+	?
71.	Limestone	....	Wellsboro	Tioga	?	—
72.	Arenaceous LS	D. Gring	Newport	Perry	+	+
73.	Limestone	....	....	....	+	?
74.	Limestone	....	....	Northampton	—	?
75.	Limestone	....	....	Union	+	— —
76.	Slate	....	Devonshire	England	+	?
77.	Limestone	....	....	....	—	?

assistance was generous. Also during this summer of 1894, to further the proposition, the writer took an extended bicycle tour through central Pennsylvania. This led to a Lewistown, Pa., newspaper stating that Professor Alexander of The Pennsylvania State College was in our midst in the very laudable purpose of collecting samples of Pennsylvania building stones for exhibit at the College. This unintential 'promotion' subjected the solicitor, a recent freshman, to much good-natured 'ribbing' when College opened in the fall.

"It required several years thereafter to collect these stones and as recorded there were 281 stones from 139 localities. When collected, the stones were assembled in the obelisk in their natural geologic order, starting at the base with the older igneous rocks.

"According to the record given, Professor Thomas C. Hopkins, Assistant Professor of Economic Geology, supervised the proper geologic placing of the stones in the 'monument' in 1896."

This article results from the suggestion of Mr. Alexander, who believes that publicity concerning the column is long overdue, "not only for the satisfaction of natural curiosity, but for the more important scientific value." It can also be of value to the beginning student in geology, who can see at a glance, not only the rock types exhibited, but their relative ability to withstand atmospheric alteration.



The Polylith in 1899, a photograph taken from the east, with orchard and pasture land and only two barns and a farm residence visible in the background. In 1949 the horizon from the same point of view is completely filled in with the Electrical Engineering, new Mineral Sciences, Mineral Industries, and Willard Hall classroom buildings.

CLASSIFICATION OF POLYLITH MEMBERS AS TO NAME, DONOR, LOCATION AND QUALITY AS A BUILDING STONE

No.	Rock Name	Source of Rock: Individual or Quarry	Source of Rock: Nearest Town	Source of Rock: County or State	Estimated Value as a Building Stone*: 1899**	Estimated Value as a Building Stone*: 1949***
78.	Sandstone	....	Morris Run	Tioga	+	?
79.	Marble	....	Devonshire	England	++	?
80.	Fossiliferous LS	....	....	....	+	+
81.	Sandstone	....	Kittanning Pt.	Blair	+	—
82.	Siliceous LS	....	Portage	Erie	—	?
83.	Fossiliferous LS	....	....	Northampton	—	?
84.	Limestone	....	....	....	+	—
85.	Calcareous SS	....	Blossburg	Tioga	+	—
86.	Fossiliferous LS	Erie Coal Co.	Landrus	....	—	—
87.	Sandstone	....	Morris Run	Tioga	+	— —
88.	Bluestone	Taylor Bros.	Lanesboro	Susquehanna	+	+
89.	Sandstone	....	Minersville	Schuylkill	—	+
90.	Sandstone	....	Mansfield	Tioga	+	?
91.	Sandstone	....	Snow Shoe	Centre	++	+
92.	Sandstone	....	....	Mifflin	—	—
93.	Standstone	....	Blossburg	Tioga	—	+
94.	Shale	J. H. Landis	E. Waterford	Juniata	— —	—
95.	Sandstone	Taylor Bros.	Lanesboro	Susquehanna	?	+
96.	Sandstone	George Conn	McCulloch's Mills	....	—	?
97.	Berea Grit	Cleveland Stone Co.	Berea	Ohio	+	+
98.	Oolitic LS	Perry Bros.	Elletsville	Indiana	++	?
99.	Sandstone	....	....	Tioga	+	?
100.	Sandstone	H. C. Krieger	Shickshinny	Luzerne	++	+
101.	Sandstone	....	....	....	?	++
102.	Sandstone	....	....	Lycoming	?	++
103.	Sandstone	John Schmidt	Wilkes-Barre	Luzerne	+	—
104.	Sandstone	John Schmidt	Wilkes-Barre	Luzerne	+	+
105.	Sandstone	....	Arnot	Tioga	+	+
106.	Sandstone	Altoona W. Wks.	Kittanning Pt.	Blair	+	?
107.	Oolitic LS	....	Cogan Sta.	Lycoming	+	+
108.	Sandstone	C. H. Breuss	Moosehead	....	+	+
109.	Flagstone	A. Myers	....	Sullivan	?	+
110.	Sandstone	Mr. Daneker	White Haven	Luzerne	+	++
111.	Quartzite	....	Wilkes-Barre	Luzerne	+	+
112.	Conglomerate	W. J. Bradley	Antrim	Tioga	?	+
113.	Sandstone	....	....	Lycoming	+	—
114.	Sandstone	R. C. Luther	Pottsville	Schuylkill	+	+
115.	Conglomerate	John Schmidt	Wilkes-Barre	Luzerne	+	+
116.	Conglomerate	Joseph Hendler	Wilkes-Barre	Luzerne	++	++
117.	Sandstone	....	Morris Run	Tioga	+	+
118.	Shale	W. H. Sweet	Dudley	Huntingdon	—	?
119.	Sandstone	William Hazlett	Walker's Mills	....	+	—
120.	Sandstone	....	....	Beaver	+	?
121.	Sandstone	Amy & Co.	Greenville	Mercer	++	?
122.	Sandstone	C. A. Doyles	Holenback	Bradford	+	?
123.	Quartzitic SS	Clearfield Q. Co.	Clearfield	Clearfield	+	+
124.	Sandstone	Co-op. Q. Co.	Mineral Point	Cambria	+	+
125.	Clarion SS	C. B. Alexander	Madera	Clearfield	?	—
126.	Sandstone	Gwinner's Quarry	....	Allegheny	+	—
127.	Sandstone	....	....	....	—	?
128.	Sandstone	....	....	....	—	—
129.	Sandstone	....	....	....	—	—
130.	Sandstone	....	....	....	+	?
131.	Sandstone	....	....	....	?	?
132.	Sandstone	....	....	....	?	?
133.	Crinoidal LS	....	Sheridan	Lebanon	—	—
134.	Waynesburg SS	....	Waynesburg	Greene	+	?
135.	Fishpot LS	....	W. Brownsville	Washington	+	+
136.	Fish Creek SS	....	Scenery Hill	Washington	?	+
137.	U. Washington LS	....	....	Washington	+	+
138.	Brownstone	N. Eng. Br. Co.	Cromwell	Connecticut	?	+
	(Rest of top belt similar—from Hummelstown, Waltonville, Lebanon and Middletown, Pa.)					
139.	Sandstone	Lambertville G. Co.	Thornbury	Chester	+	+
140.	Sandstone	....	Lambertville	New Jersey	—	—

* (+)—good for building; (++)—outstanding in quality; (?)—might be good but has some bad features; (—)—poor quality; (— —)—very poor quality.

** Data taken from Affelder's thesis, June 12, 1899. Based on microscopic examination.

*** Observations made by the author to check the present condition of each stone block.