

POINTS OF GEOLOGIC INTEREST.

POINTS OF GEOLOGIC INTEREST, Continued.

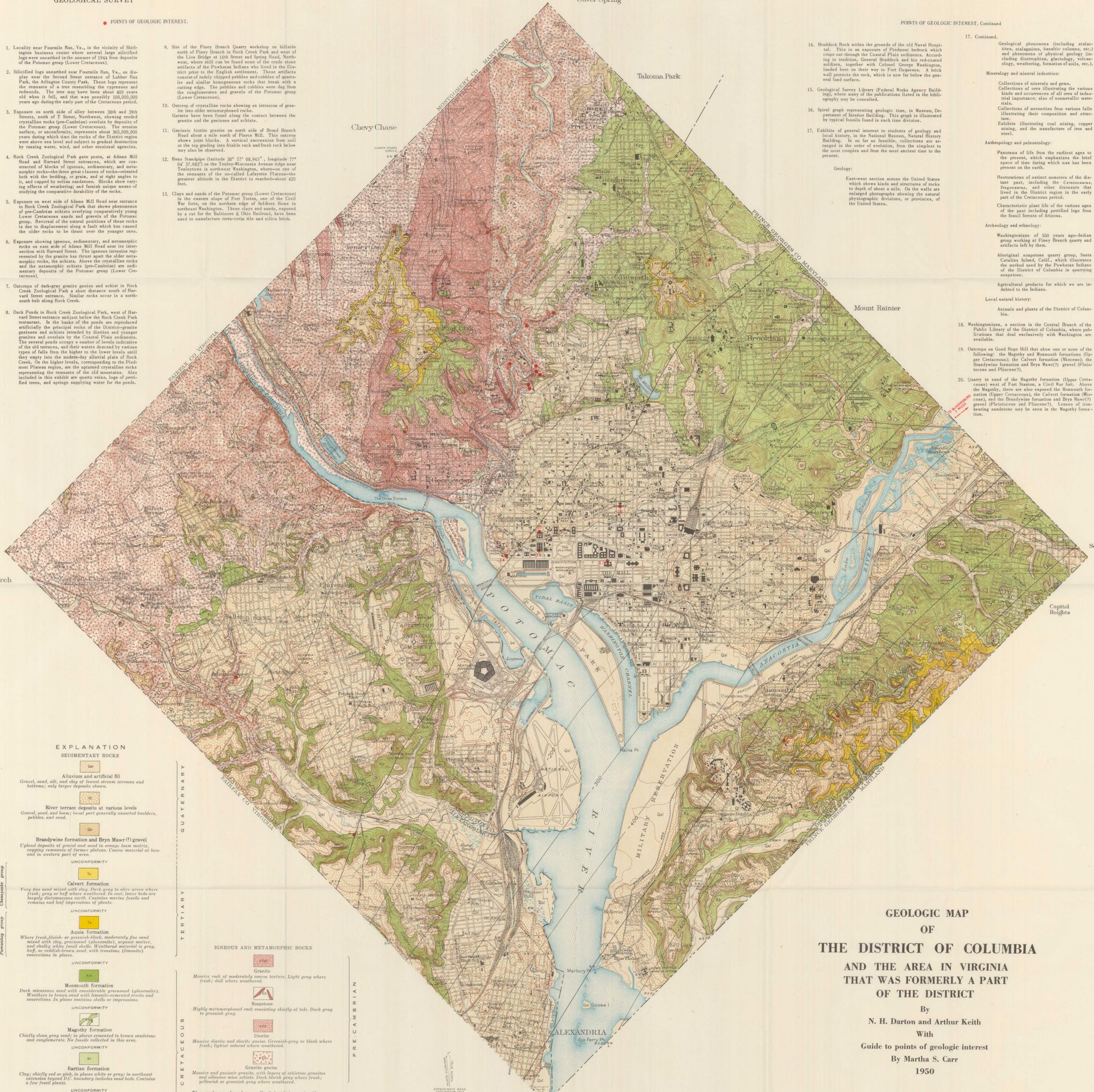
1. Locality near Fourmile Run, Va., in the vicinity of Shirlington business center where several large silicified logs were unearthed in the summer of 1944 from deposits of the Potomac group (Lower Cretaceous).
2. Silicified logs unearthed near Fourmile Run, Va., on display near the Second Street entrance of Lubber Run Park, the Arlington County Park. These logs represent the remains of a tree resembling the cypresses and redwoods. The tree may have been about 400 years old when it fell, and that was possibly 100,000,000 years ago during the early part of the Cretaceous period.
3. Exposure on north side of alley between 38th and 39th Streets, north of T Street, Northwest, showing eroded crystalline rocks (pre-Cambrian) overlain by deposits of the Potomac group (Lower Cretaceous). The erosion surface, or unconformity, represents about 365,000,000 years during which time the rocks of the District region were above sea level and subject to gradual destruction by running water, wind, and other erosional agencies.
4. Rock Creek Zoological Park gate posts, at Adams Mill Road and Harvard Street entrances, which are constructed of blocks of igneous, sedimentary, and metamorphic rocks—the three great classes of rocks—oriented both with the bedding, or grain, and at right angles to it, and capped by molten sandstone. Blocks show varying effects of weathering, and furnish unique means of studying the comparative durability of the rocks.
5. Exposure on west side of Adams Mill Road near entrance to Rock Creek Zoological Park that shows phenomena of pre-Cambrian schists overlying comparatively young Lower Cretaceous sands and gravels of the Potomac group. Reversal of the natural positions of these rocks is due to displacement along a fault which has caused the older rocks to be thrust over the younger ones.
6. Exposure showing igneous, sedimentary, and metamorphic rocks on east side of Adams Mill Road near its intersection with Harvard Street. The igneous intrusion represented by the granite has thrust apart the older metamorphic rocks, the schists. Above the crystalline rocks and the metamorphic schists (pre-Cambrian) are sedimentary deposits of the Potomac group (Lower Cretaceous).
7. Outcrops of dark-gray granite gneiss and schist in Rock Creek Zoological Park a short distance south of Harvard Street entrance. Similar rocks occur in a north-south belt along Rock Creek.
8. Duck Ponds in Rock Creek Zoological Park, west of Harvard Street entrance and just below the Rock Creek Park restaurant. In the banks of the ponds are reproduced artificially the principal rocks of the District—granite gneisses and schists intruded by diorites and younger granites and overlain by the Coastal Plain sediments. The several ponds occupy a number of levels indicative of the old terraces, and their waters descend by various types of falls from the higher to the lower levels until they empty into the modern-day alluvial plain of Rock Creek. On the higher levels, corresponding to the Piedmont Plateau region, are the upturned crystalline rocks representing the remains of the old mountains. Also included in this exhibit are quartz veins, logs of petrified trees, and springs supplying water for the ponds.
9. Site of the Piney Branch Quarry workshop on hillside north of Piney Branch in Rock Creek Park and west of the Lion Bridge at 16th Street and Spring Road, Northwest, where still can be found some of the crude stone artifacts of the Powhatan Indians who lived in the District prior to the English settlement. These artifacts consist of rudely chipped pebbles and cobbles of quartzite and similar homogeneous rocks that break with a cutting edge. The pebbles and cobbles were dug from the conglomerates and gravels of the Potomac group (Lower Cretaceous).
10. Outcrop of crystalline rocks showing an intrusion of granite into older metamorphosed rocks. Garnets have been found along the contact between the granite and the gneisses and schists.
11. Gneissic biotite granite on north side of Broad Branch Road about a mile north of Pierce Mill. This outcrop shows joint blocks. A vertical succession from soil at the top grading into friable rock and fresh rock below may also be observed.
12. Reo Standpipe (latitude 38° 57' 08.943" longitude 77° 04' 37.983") on the Tenley-Wisconsin Avenue ridge near Tenleytown in northwest Washington, where on one of the remains of the so-called Lafayette Plateau—the greatest altitude in the District is reached—about 420 feet.
13. Clays and sands of the Potomac group (Lower Cretaceous) in the eastern slope of Fort Totten, one of the Civil War forts, on the northern edge of Soldiers Home in northeast Washington. These clays and sands, exposed by a cut for the Baltimore & Ohio Railroad, have been used to manufacture terra-cotta tile and silica brick.

14. Braddock Rock within the grounds of the old Naval Hospital. This is an exposure of Piedmont bedrock which crops out through the Coastal Plain sediments. According to tradition, General Braddock and his redecoated soldiers, together with Colonel George Washington, landed here on their way to Fort DuRoi. A brick wall protects the rock, which is now far below the general land surface.
15. Geological Survey Library (Federal Works Agency Building), where many of the publications listed in the bibliography may be consulted.
16. Spiral graph representing geologic time, in Museum, Department of Interior Building. This graph is illustrated by typical fossils found in each time division.
17. Exhibits of general interest to students of geology and local history, in the National Museum, Natural History Building. In so far as feasible, collections are arranged in the order of evolution, from the simplest to the most complex and from the most ancient time to the present.

Geology:
East-west section across the United States which shows kinds and structures of rocks to depth of about a mile. On the walls are enlarged photographs showing the natural physiographic divisions, or provinces, of the United States.

Geological phenomena (including staurolites, staurolites, basaltic columns, etc.) and phenomena of physical geology (including diastrophism, glaciology, volcanology, weathering, formation of soils, etc.).
Mineralogy and mineral industries:
Collections of minerals and gems.
Collections of ores illustrating the various kinds and occurrences of all ores of industrial importance; also of nonmetallic materials.
Collections of meteorites from various falls illustrating their composition and structure.
Exhibits illustrating coal mining, copper mining, and the manufacture of iron and steel.
Anthropology and paleontology:
Panorama of life from the earliest ages to the present, which emphasizes the brief space of time during which man has been present on the earth.
Restorations of extinct monsters of the distant past, including the *Cretaceous*, *Stegosaurus*, *Sтегозавр*, and other dinosaurs that lived in the District region in the early part of the Cretaceous period.
Characteristic plant life of the various ages of the past including petrified logs from the fossil forests of Arizona.
Archaeology and ethnology:
Washingtonians of 500 years ago—Indian group working at Piney Branch quarry and artifacts left by them.
Aboriginal soapstone quarry group, Santa Catalina Island, Calif., which illustrates the method used by the Powhatan Indians of the District of Columbia in quarrying soapstone.
Agricultural products for which we are indebted to the Indians.

Local natural history:
Animals and plants of the District of Columbia.
18. Washingtonia, a section in the Central Branch of the Public Library of the District of Columbia, where publications that deal exclusively with Washington are available.
19. Outcrops on Good Hope Hill that show one or more of the following: the Magothy and Monmouth formations (Upper Cretaceous); the Calvert formation (Miocene); the Brandywine formation and Bryn Mawr(?) gravel (Pleistocene and Pliocene?).
20. Quarry in sand of the Magothy formation (Upper Cretaceous) west of Fort Stanton, a Civil War fort. Above the Magothy, there are also exposed the Monmouth formation (Upper Cretaceous), the Calvert formation (Miocene), and the Brandywine formation and Bryn Mawr(?) gravel (Pleistocene and Pliocene?). Lenses of iron-bearing sandstone may be seen in the Magothy formation.



EXPLANATION

- SEDIMENTARY ROCKS**
- Qal Alluvium and artificial fill
 - Gravel, sand, silt, and clay of lowest stream terraces and bottoms; only larger deposits shown.
 - Qrt River terrace deposits at various levels
 - Gravel, sand, and loam; basal part generally unsorted boulders, pebbles, and sand.
 - Qbr Brandywine formation and Bryn Mawr(?) gravel
 - Upland deposits of gravel and sand in orange loam matrix, capping remnants of former plateaus. Coarse material at base and in western part of area.
 - UNCONFORMITY
 - Ca Calvert formation
 - Very fine sand mixed with clay. Dark gray to olive green where fresh; gray or buff where weathered. In east, lower beds are largely discontinuous earth. Contains marine fossils and remains and leaf impressions of plants.
 - UNCONFORMITY
 - Ma Aquia formation
 - Where fresh, bluish- or greenish-black, moderately fine sand mixed with clay, greenish (glauconitic), organic matter, and chalky white fossil shells. Weathered material in gray, buff, or reddish-brown sand, with ironstone (limonite) concretions in places.
 - UNCONFORMITY
 - Mo Monmouth formation
 - Dark micaceous sand with considerable greenish (glauconitic). Weathers to brown sand with limonite-encrusted crusts and concretions. In places contains shells or impressions.
 - UNCONFORMITY
 - Ma Magothy formation
 - Chiefly clean gray sand, in places cemented to brown sandstone and conglomerate. No fossils collected in this area.
 - UNCONFORMITY
 - Ma Raritan formation
 - Clay; chiefly red or pink, in places white or gray; in northeast extension beyond D.C. boundary includes sand beds. Contains a few fossil plants.
 - UNCONFORMITY
 - Ma Potomac group
 - Consists of Patuxent, Arundel, and Potomac formations, not differentiated in this area. Upper beds chiefly pink, red and gray clay with interbedded irregular sand lenses that grade into clay lenses; basal part gravel, sand, sandstone or conglomerate overlying crystalline rocks. Contains fossil bones, plant remains, and lignite.

IGNEOUS AND METAMORPHIC ROCKS

- Gr Granite
- Massive rock of moderately coarse texture. Light gray where fresh; dull where weathered.
- Sc Soapstone
- Highly metamorphosed rock consisting chiefly of talc. Dark gray to greenish gray.
- Di Diorite
- Massive diorite and dioritic gneiss. Greenish-gray or black where fresh; lighter colored where weathered.
- Gn Granite gneiss
- Massive and gneissic granite, with layers of schistose granites and siliceous mica schists. Dark bluish gray where fresh; yellowish or greenish gray where weathered.

These rocks are classed as pre-Cambrian, but recent evidence indicates that some may be younger.

Contours on contact of unconsolidated sediments and underlying crystalline rocks (sand rock) in places is as much as 50 feet below the surface, owing to weathering. Ground water usually available near this contact. Contour interval, 100 feet. Datum is mean sea level.

GEOLOGIC MAP
OF
THE DISTRICT OF COLUMBIA
AND THE AREA IN VIRGINIA
THAT WAS FORMERLY A PART
OF THE DISTRICT

By
N. H. Darton and Arthur Keith
With
Guide to points of geologic interest
By Martha S. Carr
1950

