



2017 SUMMER FIELD TRIP, August 5-6

*Cape Neddick to Spring Point – In Arthur's Footsteps*

This year's field trip will focus on well known geologic sites in southern Maine. There was no need to write a lengthy field guide this year, because this ground has been covered exquisitely and comprehensively by Arthur Hussey in his 2015 book "A Guide to the Geology of Southwestern Maine," published by the Maine Mineral and Gem Museum in Bethel. So rather than trying to modify and reassemble the work of the master, we have chosen several of the classic localities described in his book, and will let his words and figures lead us. This is a sort of "greatest hits" tour to celebrate the geology of the southern Maine coast and the long, productive career of Arthur Hussey. Among the maps we will use along the way are a detailed map that he surveyed in 1954 as an undergraduate student, and an award-winning regional bedrock map he published in 2016.

Most of the sites we will visit have been described in previous field guides, starting with the 1965 meeting of the New England Intercollegiate Geological Conference, and have become teaching venues for two generations of geology students. If you have not been to all these places, or if it has been a while, you are in for a treat.

Instead of a field guide, we are providing an outline with the following information for each stop: 1) relevant page numbers from "A Guide to the Geology of Southwestern Maine," 2) a list of features to see or topics for discussion in a "keyword" format, and 3) the name of the geologist who has volunteered to lead the stop for us. It is a testament to the breadth of Arthur's interest in all aspects of geology that it will take seven of us to cover the stops we have selected from his book.

– Henry Berry

**SATURDAY, AUGUST 5**

**STOP 1. Marginal Way, Ogunquit.** Pages 51-66 of Hussey (2015). "One of the most outstanding geological sites in the state of Maine" (p. 52). Figures 32, 33, 39, 44, 48.

Stratigraphic features of the Kittery Formation: Bedding; Graded bedding;  
Metamorphosed sandstone, phyllite, and calc-silicate rock.

Structural geology: Upright folds, Recumbent folds; Cleavage; Upright and inverted beds; Faults and shear zones.

Mesozoic dikes: Mafic and felsic compositions; Internal texture and structure; Cross-cutting relationships. [Wally Bothner, Henry Berry]

**STOP 2. 214 Nubble Road, Cape Neddick.** Pages 40-45 of Hussey (2015); Figs. 19, 20, 21.

STOP 2A. Sohier Park.

Normal gabbro; Pegmatitic gabbro; Anorthositic gabbro; Cortlanditic gabbro;  
Igneous layering; Dikes; Mappable igneous units; Funnel-shaped intrusion; Mesozoic age. [Wally Bothner]

STOP 2B. Coastal outcrops reached from Fort Hill Avenue.

Country rock in contact zone; Dikes in the Kittery Formation; Breccia; Mechanism of intrusion; Melting; Contact metamorphism (cordierite). [Henry Berry]

**STOP 3. Laudholm Preserve, Wells.** Pages 161 and 188-194 of Hussey (2015); Fig. 145.

Inlet; Dunes; Barrier beach; Coastal environments; Sea-level rise. [Dan Belknap]

**STOP 4. Behind Home Depot, Biddeford.** Page 77 of Hussey (2015).

Biddeford Granite; Geochronology; Kittery 1:100,000 bedrock map (winner of the Charles J. Mankin award); Biddeford dextral flexure. [Wally Bothner, Henry Berry]

**SATURDAY, AUGUST 5** (continued)

**OPTIONAL STOP BEFORE DINNER. Ocean Avenue, Biddeford Pool.** Page 77 of Hussey (2015); Figure 62.

Kittery Formation; Biddeford Granite; Roof pendants; Xenoliths; Beautiful rocks in a beautiful place. [Henry Berry, Ian Hillenbrand]

**SUNDAY, AUGUST 6**

**STOP 5. Ferry Beach State Park and walk to Camp Ellis, Saco.** Pages 191-197 of Hussey (2015); Figure 183.

Natural dune system; Back dune; Frontal dune; Artificial dune; Geotube; Rip-rap; Influence of 6000-foot jetty; Infrastructure at risk; Sea-level rise. [Pete Slovinsky, Steve Dickson]

**STOP 6. Chases Lane, Saco (private property).** Pages 180-181 of Hussey (2015); Figure 165.

Presumpscot Formation; Landslides; Scarps; LiDAR imagery. [Lindsay Spigel]

**STOP 7. Danford Cove, Sea View Avenue, Cape Elizabeth.** Pages 114-115 of Hussey (2015); Figures 95, 96.

Cushing Formation; Blue quartz phenocrysts; Metamorphosed volcanic rocks; Crystal tuff; Pyroclastic rocks; Lineation; Cushing Island. [Henry Berry]

**STOP 8. Southeast side of Spring Point, Southern Maine Community College, South Portland.** Pages 126-130 of Hussey (2015); Figure 112.

Ordovician stratigraphy; Spring Point Formation; Greenstone; Diamond Island Formation; Graphitic phyllite; Scarboro Formation; Metamorphosed sandstone and phyllite; Quartz veins; Dextral shear deformation; Overturned section; Greenschist facies metamorphism; Garnet; Casco Bay map pattern; Mafic dike. [Henry Berry]

END OF TRIP

I offer deep gratitude to the following people whose cooperation made this field trip possible. – *Henry*

Wally Bothner, Univ. of New Hampshire (emeritus)	Ed Clark, Chases Lane
Dan Belknap, Univ. of Maine (emeritus)	Southern Maine Community College
Steve Dickson, Maine Geol. Survey	Barbra Barrett, Maine Gem and Mineral Museum
Pete Slovinsky, Maine Geol. Survey	Kelly Alden, University of New England
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Jeanne Roche, Marginal Way Preservation Fund	Sarah Hall, College of the Atlantic (van driver)
Jim Daly, Wells Superintendent of Schools	Chris Fuert, Univ. of New England (van driver)
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Mark Coles, Sohier Park Road	Henry Berry, Maine Geol. Survey (van driver)
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