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Boudinage in relict bedding in layers of rusty lOA. marble. The camera faces north and the numerous small boudins plunge gently in that direction, parallel to the axis of a nearby large fold. The layers which form the boudins are feldspardiopside-quartz granulites whereas the intercalations and matrix material are silicated calcitic marble. Other boudins in other relict beds nearby are oriented at right angles to these, and plunge down the flanks of the associated folds. ..

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Deformed and highly feldspathized beds in the median gneiss. The locality is about 800 feet southwest of the Edwards zinc mine. The camera faces north, and the folds plunge northwest at moderate angles. The darker disrupted layers are biotitic gneiss thought to represent reconstituted argillaceous sandstone beds. The lighter colored layers and matrix are largely quartz-microcline granulite (see also tables 14 and 15) thought to be of metasomatic origin. Here as in other parts of the district a common type of asymmetry appears in most folds (see,

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plates 9A, 9B, 9C, 9D).....

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		level of the Woodcock mine, Fowler talc belt

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Plate 12D. A fold in silicated marble and pegmatite. The pegmatite (P) is mylonitized and isoclinally folded. The dark core of the fold is a replacement vein of sphalerite-pyrite-galena in calcitic marble (M). The layers to the right of the pegmatite are complexly silicated marble. This fold is a minor one formed in conjunction and accordant with the large Edwards fold. The sulfides replaced the marble near the conclusion of folding. The scale is six inches long..... 293 Thinly layered and laminated diopsidic marble. 13A. The light colored layers (relict beds) are highly diopsidic quartzite and the darker layers are dolomite. Quartz remains only in the very cores of the diopsidic layers. The incipient dispersal and boudinage features in the silicated layers

wall of the Balmat talc belt..... 245

are clearly visible. Rock of this type occurs in

Zone 14 along the footwall contacts of the Balmat,

American and Fowler talc belts, and in the hanging

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Plate 13B. Thinly layered and laminated tremolitic marble. The light colored layers are largely quartzite, with about 15 percent tremolite. The darker splotched layers are tremolitic marble (calcite). Most of the tremolite (darker colored areas) is serpentinous. Lenses of this type appear locally within the American, Fowler and Talcville talc belts. They are interpreted as examples of intermediate stages in the conversion of siliceous dol-293 omite to talc..... 13C. Siliceous talc composed of folia of the mineral talc (T) enveloping and interlayered with quartz lenticules (Q). This specimen and that shown in plate 12D are taken from the Woodcock talc mine ... 13D. Highly deformed siliceous talc. The quartz (Q) forms boudins, rods and knots elongated normal to the plane of the photograph. These linear elements are parallel to axes of major folding in the talc belts and associated rock. There are marked similarities between this type of deformation and that shown

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		tose). Specimen from the Freeman talc mine,	
		Talcville talc belt	04
	14B.	Section cut normal to the foliation in a slab of	
		tremolitic marble. The rock is approximately 50	
		percent talcose tremolite in a matrix of calcite.	
		Layers and lenses of this rock merge into purer	
		talcs along and across the strike and are interpre-	
		ted as representing an intermediate stage in the	
		conversion of an initially dolomitic marble to	
		talc. Note the intersecting foliations (fl and	
		f2). This specimen is from the Woodcock mine,	
		Fowler talc belt	2 4

Plate	14C.	Partly serpentinized, mylonitic pegmatite. The
		pegmatite (P) has been crushed into a microcrystall-
		ine rock and partly replaced by dark green serpen-
		tine (S). The specimen is from the Freeman talc
		mine, Talcville talc belt 293
	14D.	Partly serpentinized perthite crystal. The single
		perthite crystal (P) is about half replaced by deep
		green serpentine. This specimen came from a very
		coarse-grained pegmatite cutting talc and adjacent
		marble near Talcville. An analysis of unaltered
		perthite from this pegmatite is given in table 21 293
	15A.	Tremolitic marble sectioned normal to the foliation.
		The long slender blades of tremolite are growing a-
		cross the initial layering (bedding) and obliterat-
		ing it. Some of the tremolites are in turn crumpled
		along axes which are almost normal to the page 306
	15B.	An advanced stage in the replacement of marble by
		blades of tremolite growing at right angles to the
		prominent layering in the marble 307

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Plate 15C. Anthophyllite-tremolite schist split along the dominant foliation. The anthophyllite fibers form thin mats with a pronounced lineation parallel to (II). This lineation in the plane of the dominant foliation plunges down the flanks of associated folds at right angles to the axes (FA). Many of the anthophyllite tremolite fibers are crushed and broken. On layers parallel to and less than $\frac{1}{2}$ inch from the surface of this slab (shown by cut in upper right of the specimen) tremolite blades define a lineation at right angles to that shown here, and parallel to the axes of associated folds (I2). The specimen is from the International No. 4 mine, Talcville 327 Steeply dipping, uniformly foliated zone of 16A. commercial talc. The darker layers represent highly serpentinous tremolite. The lighter bands are slightly to moderately talcose and serpentinous tremolite and anthophyllite. The locality is

the fifth level of the Woodcock mine, median zone,

just west of the shaft......

- - 16C. Contorted and schistose commercial talc and serpentinous marble separated by a slickensided surface of discontinuous shear. The shear surface lies subparallel to the foliation in both rocks. The talc (T) is composed largely of folia of the mineral talc, with small amounts of serpentine, anthophyllite, tremolite, quartz and calcite. The marble (M) is serpentinous calcite. Folds and rods of quartz in the talc plunge gently away from the camera (arrows marked F), whereas slickensides on the fault ("slip") surface plunge normal to the fold axes as shown by the arrow marked (S). The locality is the fifth level of the Woodcock mine, hanging wall zone.....

Plate	17A.	Photomicrograph of highly fibrous talc showing	
		paragenetic relations. The blades of tremolite	
		(TR) are largely replaced by fibers of antho-	
		phyllite (A) which in turn is partly replaced by	
		microcrystalline aggregates of the mineral talc	
		(TC). When this talc is ground the anthophyllite	
		fibers fluff up and produce an asbestiform mass.	
		If ground to a minus 250 mesh this talc has an	
		oil absorption of about 50. X50	282
	17B.	Tremolitic talc partly replaced by microcrystall-	
		ine grains of the mineral talc. The light color-	
		ed boundaries of each tremolite grain and cleav-	
		age lines are altered to the mineral talc. This	
		variety of talc is not fibrous and has an oil ab-	
		sorption of about 34 when ground to a minus 300	
		mesh. X16, crossed nicols	3/8
	17C.	Slightly serpentinous and talcose commercial talc.	
		It averages about 80 percent tremolite, 5 percent	
		serpentine, 14 percent talc and 1 percent calcite.	
		It has an oil absorption of about 36 when ground	
		to a minus 300 mesh. X50, crossed nicols	3/9

Plate	17D.	Commercial talc composed of diopside, tremolite,
		serpentine and talc. Tremolite and very rare
		diopside (light and dark laminae) comprise about
		18 percent of this talc, serpentine about 50 per-
		cent, and the mineral talc (the very light color-
		ed spots) about 32 percent. This talc ground to
		minus 300 mesh has an oil absorption of about 48.
		X16, crossed nicols
	18A.	Diopside (D) veined by serpentine (S), the whole
		partly replaced by microcrystalline talc (T).
		Layers and lenses of this type lie in contact with
		commercial talc at numerous localities in the dis-
		trict. X50
	18B.	Commercial talc composed of tremolite (TR) altered
	100.	to and veined by serpentine (S). The tremolite
		comprises about 64 percent of this rock. This
		talc ground to minus 300 mesh has an oil absorp-
	7.0 -	tion of about 38 to 40. X50, crossed nicols 243,32/
	18C.	Commercial talc composed in large part of contorted folia of the mineral talc. Both coarse folia (FT)
		and microcrystalline talc (MT) are present. Talc
		of this type forms the zone shown in plate 16C.
		X50. crossed nicols

- - 19A. Partly ground anthophyllite and fibers of the mineral talc. The mineral talc tends to be fibrous when it replaces fibrous anthophyllite.

 This specimen is about 77 percent anthophyllite,

 23 percent the mineral talc. Prior to crushing the anthophyllite looked like that shown in plate

 17A, although the fibers in this photo are much longer. This material is the most asbestiform talc in the district, but is rarely found in lenses or layers of minable dimensions.
 - 19B. Partly ground talc in which folia of the mineral talc are the major constituent. About 10 percent of microcrystalline serpentine (S) also is present, as well as a few fibers of anthophyllite. There is little or no tremolite. Almost none of the commercial talcs contain this much of the mineral talc. X50, reflected light......

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Plate	26.	Structure contour map of the footwalls of the Fow-	-	
		ler and Talcville talc belts		240
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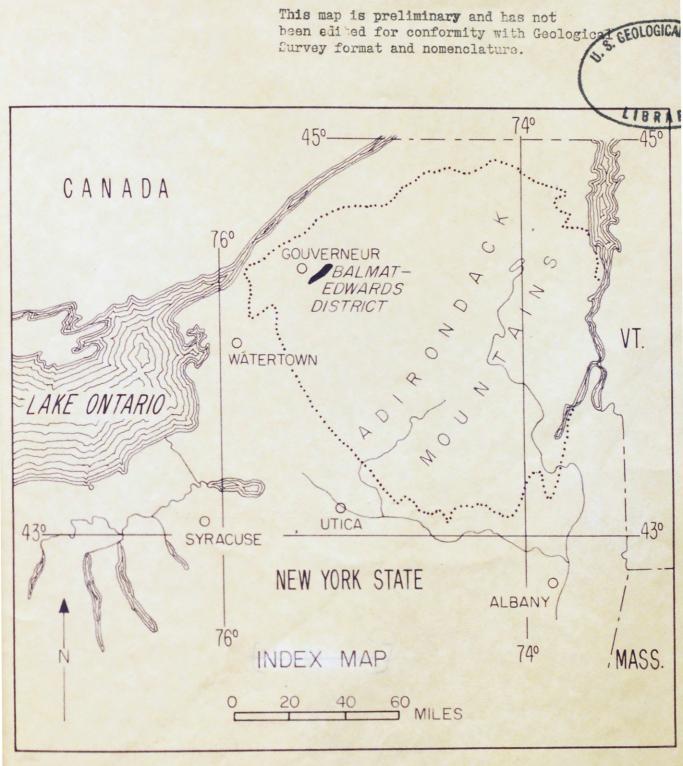


Figure 1. Index map showing location of the Balmat-Edwards (Gouverneur) mining district/in the northwestern Adirondacks, New York

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