GSA Data Repository Item # 8531

Title of article Trondhjemite and metamorphosed quartz keratophyre tuff of the Ammonoosuc Volcanics (Ordovician), western New Hampshire and adjacent Vermont and Massachusetts

Author(s) Leo W. Gerhard

see Bulletin v. 96, p. 1483 - 1492

Contents 8 pages

Appendix

APPENDIX

Sample numbers, descriptions and locations for tables 1 and 2.

Anal.
No.

1. OL 60, fine-grained, gray, strongly lineated gneissic trondhjemite consisting of approximately 94 percent quartz + plagioclase, 5 percent biotite + 1 percent magnetite + apatite[1/]. New Hampshire Rte. 110 at road to Jericho Lake Park, approximately 5 km NW of Berlin, N.H., southeast corner of Milan, N.H. 15-minute quadrangle.

2. OL 203, fine-grained homogeneous trondhjemite intruding layered Ammonoosuc, and containing 3 percent biotite + <1 percent muscovite. Near Brown Co. plant entrance, Sullivan and Champlain Streets east of Androscoggin River, Berlin, N.H. 7 1/2-minute quadrangle.

3. OL 208, fine-grained trondhjemite containing 2 percent partly chloritized biotite and 1 percent magnetite + sphene. Intrudes Ammonoosuc amphibolite in railroad cut directly west of Berlin Post Office, Berlin, N.H. 7 1/2-minute quadrangle.

[1/] The essential minerals in both trondhjemite and quartz keratophyre are quartz and sodic plagioclase in roughly equal proportions. These will not be reiterated in each description. Accessory minerals vary, and their reported abundance is based on visual estimates.

Appendix--continued

Anal.
No.

4. OL 341, pinkish fine-grained trondhjemite containing 2 percent green hornblende + chlorite + epidote + sphene. Cuts mafic Ammonoosuc within Landaff pluton, west flank of unnamed hill near 1900 ft (580 m) contour, approximately 5 km southwest of Sugar Hill village; Sugar Hill, N.H. 7 1/2-minute quadrangle.

5. OL 39-1, medium-grained, white, inequigranular, locally sheared trondhjemite containing 15 percent total muscovite + epidote + magnetite and <1 percent garnet. Cuts amphibolite of Orfordville Formation regarded as equivalent to Ammonoosuc Volcanics (J. B. Lyons, pers. commun., 1980). Cut in exit ramp from I89 near intersection with N.H. Rte. 12A, southern outskirts of West Lebanon, N.H. Hanover, Vt.-N.H. 7 1/2-minute quadrangle.

6. OL 507-1, grayish-green sheared trondhjemite, containing 10 percent total hornblende + epidote + biotite + magnetite. Part of "gneiss at White River Junction, Vt." of Lyons (1955). Cut in median of I91 directly west of White River Junction, Vt. Hanover, Vt.-N.H. 7 1/2-minute quadrangle.

7. OL 507-2, generally similar trondhjemite as OL 507-1 but more greenish color; chlorite + amphibole + magnetite total approximately 15 percent. Same location as OL 507-1.

Appendix--continued

Anal.
No.

8. OL 502, foliated greenish trondhjemite containing 25 percent total muscovite + epidote + chlorite. Part of "gneiss east of Plainfield, N.H." of Lyons, 1955. Porter Road, 3 km south of Grafton County line (coincides with Lebanon City boundary). North Hartland, N.H.-Vt. 7 1/2-minute quadrangle.

9. OL 309-2, medium-grained, equigranular trondhjemite containing 5 percent alkali feldspar and 7 percent (total) biotite + sphene + epidote + chlorite + magnetite. Cut on west side of I89 approximately 1 km west of North Grantham; southern edge of Mascoma, N.H.-Vt. 15-minute quadrangle.

10. OL 310, medium-grained trondhjemite generally similar to OL 309-2 but a smaller proportion (estimated 4 percent) of mafic minerals. Cut in I89, 1.2 km south of loc. 9.

11. OL 293, inequigranular, medium-grained gray-brown trondhjemite containing 7 percent biotite + muscovite, and traces of garnet. Core gneiss of Unity Dome. Outcrop on old N.H. Rte. 103 approximately 5 km east of Claremont. Claremont, N.H.-Vt. 15-minute quadrangle.

Appendix--continued

Anal.
No.

12. OL 301, gray medium-grained trondhjemite containing 4 percent alkali feldspar and 5 percent (total) deep green hornblende, brown biotite and epidote. Core gneiss of Unity dome on north bank of Little Sugar River, approximately 1 km east of Quaker City, southeastern part of Claremont, N.H.-Vt. 15-minute quadrangle.

13. OL 267A, fine-grained trondhjemite containing 2 percent chlorite + magnetite + epidote + biotite + cummingtonite(?); intrudes Ammonoosuc amphibolite. In barnyard north side N.H. Rte. 123A approximately 5 km NW of Alstead; Bellows Falls, N.H.-Vt. 15-minute quadrangle.

14. OL 272-1, foliated, medium-grained gneissic trondhjemite containing 8 percent deep green hornblende and 2 percent magnetite + garnet + apatite. Core gneiss of Alstead dome. N.H. Rte. 12A, 0.9 km south of Alstead Center; Bellows Falls, N.H.-Vt. 15-minute quadrangle.

15. OL 561-1, gray medium-grained trondhjemite containing 5 percent biotite + epidote + garnet + magnetite. Core gneiss of Alstead dome. South flank of east peak of Bald Hill (east of Cannon Brook), approximately 1100 ft (335 m) level, north side Ashuelot River; Bellows Falls, N.H.-Vt. 15-minute quadrangle.

Appendix--continued

Anal. No.

16. OL 15, inequigranular, gneissic trondhjemite containing 5 percent alkali feldspar plus 5 percent biotite + muscovite + sphene + magnetite + apatite. Core gneiss of Vernon dome. N.H. Rte. 119, 650 m west of intersection with N.H. Rte 63, center of Hinsdale; Keene, N.H.-Vt. 15-minute quadrangle.

17. OL 20, gneissic trondhjemite containing 5 percent biotite + muscovite and 1 percent sphene + garnet. Oxbow Road, 1.2 km east of N.H. Rte. 119 and approximately 3.5 km southeast of Brattleboro (Vt.). Brattleboro, Vt.-N.H. 15-minute quadrangle.

18. OL 288A, medium-grained trondhjemite containing 7 percent biotite, 1 percent alkali feldspar, and 1 percent muscovite + epidote + apatite. Cut north side of N.H. Rte. 10 (Manning Hill Road), 4.5 km south of Winchester, N.H.; Northfield, Mass.-N.H.-Vt. 7 1/2-minute quadrangle.

19. OL 79-7, fine-grained granofels containing 15 percent authophyllite + pale biotite + magnetite. Cut along power line just north of falls on Cascade Alpine Brook, east bank of Androscoggin River directly east of Cascade, N.H.; Berlin, N.H. 7 1/2-minute quadrangle.

Appendix--continued

Anal.
No.

20. OL 398, fine-grained and sugary-textured granofels containing 7 percent biotite and 2 percent muscovite. See fig. 2A and 2C. From excavated block, 6th and Madigan Streets, Berlin; Berlin, N.H. 7 1/2-minute quadrangle.

21. OL 139, similar to OL 398 but containing approximately 5 percent each of biotite and muscovite. N.H. Rte. 25C, 6.4 km NW of Warren at Ore Hill Summit; Warren, N.H. 7 1/2-minute quadrangle.

22. OL 32C, lenticular, slightly altered granofels containing 6 percent chloritized biotite, 12 percent magnetite and <1 percent actinolitic amphibole. Lower part of Ammonoosuc section (1800 ft = 550 m level) at Holts Ledge near Dartmouth Skiway, approximately 6 km east-southeast of Lyme, N.H.; Mt. Cube, N.H.-Vt. 15-minute quadrangle.

23. OL 270-1, gray fine-grained banded granofels containing 10 percent cummingtonite, 2 percent epidote and 1 percent magnetite. Roadcut 1 km southwest of South Acworth and 400 m south of Beryl Mountain; Bellows Falls, N.H.-Vt. 15-minute quadrangle.

24. OL 252-2, white friable medium-grained granofels containing 5 percent biotite + sphene + magnetite + green hornblende. 350 m north of Wentworth Church and 2.3 km north of N.H. Rte. 25A; Warren, N.H. 7 1/2-minute quadrangle.

Anal.
No.

25. Ol 32F, fine-grained, dense, thickly bedded granofels approximately 30 m stratigraphically below bottom of Ammonoosuc. Contains 8 percent green hornblende + chloritized biotite + epidote + magnetite. Loc. same as no. 22 (OL 32C) but at approximately 1500 ft (450 m) level.

26. OL 32G, massive, friable white granofels containing 5 percent green hornblende + brown biotite + epidote + magnetite. Location same as preceding sample but approximately 30 ft (10 m) stratigraphically lower.

27. OL 524, amphibolite dike 1.5-2.0 m wide cutting Oliverian gneiss; consists of about equal proportions intermediate zoned plagioclase + green hornblende, plus 3 percent granular sphene. Dike may be of Ammonoosuc age or younger. South side of road leading into Cascade westward from N.H. Rte. 16, 2.2 km south of intersections of N.H. Rtes. 16 and 110 in Berlin. Berlin, N.H. 7 1/2-minute quadrangle.

28. OL 120-1, massive amphibolite except for local faint layering, banding, and lensoid structures. Consists of approximately 45 percent plagioclase and 25 percent each of hornblende + brown biotite, plus 5 percent magnetite + epidote. Cut in southbound lanes of I93 1.3 km southeast of intersection with N.H. Rte. 10. Littleton, N.H.-Vt. 7 1/2-minute quadrangle.

Anal.
No.

29. OL 32A, strongly foliated amphibolite consisting of green hornblende + plagioclase + 7 percent biotite + 2 percent magnetite. Same as loc. 22 but near 2000 ft (610 m) level.

30. M-15, massive amphibolite interpreted as feeder dike for Post Pond Volcanics (= Ammonoosuc volcanics). Collected by J. N. Aleinikoff. Consists of hornblende + plagioclase, plus 10 percent biotite + sphene. Pompanoosuc, Vt., Stickney Farm, quarry approximately 1 km north of junction of Ompompanoosuc and Connecticut Rivers; Mt. Cube, N.H.-Vt. 15-minute quadrangle.

31. OL 267-2, amphibolite cut by trondhjemite, northern part of Alstead dome. Consists of plagioclase + green hornblende, plus 3 percent magnetite. Same loc. as no. 13.