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Distribution of titanium between coexisting muscovite and biotite in pelitic schists from northwestern Maine

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Table 2A. Distribution of Ti between coexisting muscovite and biotite in relation to Mg/Fe biotite and K_D, Mg/Fe, Musc/Bio. Upper Staurolite Zone, Rangeley. All specimens with staurolite. Data from Guidotti (1973, 1974, and unpublished).

Table 2B. Distribution of Ti between coexisting muscovite and biotite in relation to Mg/Fe of biotite and K_D, Mg/Fe, Musc/Bio. Transition Zone, Rangeley. Data from Guidotti (1973, 1974). All specimens with sillimanite and/or staurolite.

Table 2C. Distribution of Ti between coexisting muscovite and biotite in relation to Mg/Fe biotite and K_D, Mg/Fe, Musc/Bio. Lower Sillimanite Zone, Rangeley. Data from Guidotti (1973, 1974). All specimens with sillimanite and/or staurolite.

Table 2D. Distribution of Ti between coexisting muscovite and biotite in relation to Mg/Fe biotite and K_D, Mg/Fe, Musc/Bio. Upper Staurolite to Lower Sillimanite Zone, N. Rumford Quadrangle. All specimens are from the Small's Falls Formation and contain high-Al assemblages.

Table 2E. Distribution of Ti between coexisting muscovite and biotite in relation to Mg/Fe biotite and K_D, Mg/Fe, Musc/Bio. Lower Sillimanite Zone, Oquossoc. All specimens with sillimanite and/or staurolite. Data from Guidotti (1970, 1973, 1974).

Table 2F. Distribution of Ti between coexisting muscovite and biotite in relation to Mg/Fe biotite and K_D, Mg/Fe, Musc/Bio. Upper Sillimanite Zone, Oquossoc. All specimens with sillimanite. Data from Guidotti (1970, 1973, 1974). (* - specimens with high biotite Mg/Fe ratio)

Table 2G. Distribution of Ti between coexisting muscovite and biotite in relation to Mg/Fe biotite and K_D, Mg/Fe, Musc/Bio. Upper Sillimanite Zone, Bryant Pond Region. Data from Evans and Giodotti (1966). (* - specimens with high Biotite Mg/Fe ratio)

Table 2H. Distribution of Ti between coexisting muscovite and biotite in relation to Mg/Fe biotite and K_D, Mg/Fe, Musc/Bio. Upper Sillimanite Zone, Bryant Pond-Rumford Regions. All specimens from high-Al varieties of the Smalls Falls Formation.

Table 2I. Distribution of Ti between coexisting muscovite and biotite in relation to Mg/Fe biotite and K_D, Mg/Fe, Musc/Bio. K-feldspar + Sillimanite Zone, Bryant Pond Quad. Data from Evans and Guidotti (1966). All specimens with sillimanite. (* - specimens with high Biotite Mg/Fe ratio)

Table 2A. Distribution of Ti between coexisting muscovite and biotite in relation to Mg/Fe biotite and K_D, Mg/Fe, Musc/Bio. Upper Staurolite Zone, Rangeley. All specimens with staurolite. Data from Guidotti (1973, 1974, and unpublished).

Spec. #	*Wt% Ti-Mu	Wt% Ti-Bio	Ti Mu / Ti Bio	Mg/Fe Bio	Mg/Fe Mu	Mg/Fe Mus / Mg/Fe Bio
Ra-c50-66	.23	.96	.239	.995	1.143	1.149
Ra-a97-66	.22	.98	.224	.771	1.000	1.296
Ra-a2-66	.19	1.02	.186	.900	1.125	1.250
Ra-a14-66	.20	.95	.210	.832	1.143	1.374
Ra-a36-66	.20	.90	.222	.843	.800	.949
Ra-a8-66	.17	.93	.183	.891	.800	.899
Ra-a28-66	.24	1.03	.233	.787	.875	1.112
Ra-a33-66	.20	1.02	.196	.964	1.286	1.334
Ra-a52-66	.19	.92	.206	.878	1.000	1.139
Ra-a61-66	.21	.95	.221	.844	.975	1.155
Ra-a67-66	.19	.95	.200	.820	1.040	1.268
Ra-a69-66	.25	.95	.263	.709	1.007	1.420
Ra-a98-66	.30	1.07	.280	.860	1.095	1.273
Ra-b9-66	.23	.94	.243	.847	1.092	1.289
Ra-a29-66	.26	1.05	.248	.846	1.250	1.477
M-762-64A	.23	.98	.235	.834	1.286	1.542
M-798-64	.21	.93	.226	.866	1.286	1.485
Ra-c84-66	.20	.96	.208	.973	1.333	1.370
Average	.22	.97	.224	.859	1.085	1.265

*The analytical error for data in this and all subsequent tables is about two percent for elements constituting more than two percent of a given specimen. For elements analyzed together (Fe, Mg, Ti) the relative amounts have a similar error even for lower concentrations.

Table 2B. Distribution of Ti between coexisting muscovite and biotite in relation to Mg/Fe of biotite and K_D, Mg/Fe, Musc/Bio. Transition Zone, Rangeley. Data from Guidotti (1973)(1974). All specimens with sillimanite and/or staurolite.

Spec. #	Wt% Ti-Mu	Wt% Ti-Bio	$\frac{\text{Ti Mu}}{\text{Ti Bio}}$	Mg/Fe Bio	Mg/Fe Mu	$\frac{\text{Mg/Fe Mus}}{\text{Mg/Fe Bio}}$
Ra-a93-66	.25	.97	.258	.700	1.125	1.607
Ra-b48-66	.28	1.11	.252	.927	1.375	1.483
Ra-b42-66	.25	1.15	.217	.839	1.125	1.341
Ra-c35-66	.25	1.11	.225	.822	1.000	1.216
Ra-a96-66	.26	.93	.279	.719	1.111	1.545
Ra-a59-66	.22	1.03	.213	.845	1.125	1.331
Ra-b51-66	.31	1.05	.295	.934	1.375	1.472
Ra-a58-66	.31	1.00	.310	1.024	1.136	1.109
Ra-a72-66	.25	1.01	.247	.887	1.000	1.127
Ra-a88-66	.26	1.03	.252	.988	.900	.911
Ra-c71-66	.21	.92	.228	.876	.905	1.033
Ra-c72-66	.25	.94	.266	.924	1.060	1.147
Average	.26	1.02	.255	.874	1.103	1.277

Table 2C. Distribution of Ti between coexisting muscovite and biotite in relation to Mg/Fe biotite and K_D, Mg/Fe, Musc/Bio. Lower Sillimanite Zone, Rangeley. Data from Guidotti (1973)(1974). All specimens with sillimanite and/or staurolite.

Spec. #	Wt% Ti-Mu	Wt% Ti-Bio	$\frac{\text{Ti Mu}}{\text{Ti Bio}}$	Mg/Fe Bio	Mg/Fe Mu	$\frac{\text{Mg/Fe Mus}}{\text{Mg/Fe Bio}}$
Ra-b56-66	.34	1.20	.283	.701	1.125	1.605
Ra-c63-66	.29	1.05	.276	.858	1.111	1.295
Ra-b93-66	.28	1.09	.257	.836	1.428	1.708
Ra-a95-66	.26	1.10	.236	.796	1.125	1.413
Ra-b86-66	.36	1.21	.297	.859	1.222	1.423
Ra-b4-66	.29	1.10	.264	.796	1.375	1.727
Ra-b95-66	.28	.98	.286	.846	1.500	1.773
Ra-b41-66	.31	1.10	.282	.782	-	-
Ra-b90-66	.35	1.02	.343	.835	1.171	1.402
Ra-a92-66	.28	.95	.295	.909	1.206	1.327
Average	.30	1.08	.282	.822	1.251	1.519

Table 2D. Distribution of Ti between coexisting muscovite and biotite in relation to Mg/Fe biotite and K_D, Mg/Fe, Musc/Bio. Upper Staurolite to Lower Sillimanite Zone, N. Rumford Quadrangle. All specimens are from the Small's Falls Formation and contain high-Al assemblages.

Spec. #	Wt% Ti-Mu	Wt% Ti-Bio	$\frac{\text{Ti Mu}}{\text{Ti Bio}}$	Mg/Fe Bio	Mg/Fe Mu	$\frac{\text{Mg/Fe Mus}}{\text{Mg/Fe Bio}}$
Ru-e28a-66	.32	.59	.559	3.126	3.680	1.177
Ru-e28b-66	.30	.62	.484	3.261	3.404	1.044
Ru-d24-66	.28	.51	.549	4.018	3.870	.963
Ru-e31-66	.38	.45	.844	4.267	4.973	1.165
Ru-e26-66	.29	.40	.725	5.802	5.312	.916
Ru-e25-66	.27	.35	.771	7.619	8.333	1.094
Ru-e32-66	.31	.39	.795	7.828	-	-
Ru-G24-66	.43	.31	1.387	15.721	15.667	.997
Average	.32	.45	.764	6.455	6.463	1.051

Table 2E. Distribution of Ti between coexisting muscovite and biotite in relation to Mg/Fe biotite and K_D, Mg/Fe, Musc/Bio. Lower Sillimanite Zone, Oquossoc. All specimens with sillimanite and/or staurolite. Data from Guidotti (1970)(1973)(1974).

Spec. #	Wt% Ti-Mu	Wt% Ti-Bio	$\frac{\text{Ti Mu}}{\text{Ti Bio}}$	Mg/Fe Bio	Mg/Fe Mu	$\frac{\text{Mg/Fe Mus}}{\text{Mg/Fe Bio}}$
O-J-53	.41	1.15	.356	.709	1.100	1.551
O-J-65	.28	1.19	.235	.650	1.000	1.538
O-C-38	.29	1.07	.271	.771	1.200	1.556
O-J-67	.29	1.15	.252	.665	1.111	1.671
O-K-1	.34	1.15	.296	.696	.889	1.277
O-C-35	.31	1.11	.279	.692	.889	1.285
O-C-41	.23	1.32	.174	.651	1.000	1.536
O-C-44	.39	1.18	.330	.637	1.000	1.570
O-J-55	.44	1.09	.404	.608	.909	1.495
O-J-60	.28	1.17	.239	.740	1.000	1.351
O-J-63	.25	1.07	.234	.614	1.000	1.629
O-J-73	.34	1.16	.293	.601	1.000	1.664
O-K-46	.30	1.13	.265	.758	1.100	1.451
O-K-57	.25	1.16	.215	.621	1.000	1.610
Average	.31	1.15	.274	.672	1.014	1.513

Table 2F. Distribution of Ti between coexisting muscovite and biotite in relation to Mg/Fe biotite and K_D, Mg/Fe, Musc/Bio. Upper Sillimanite Zone, Oquossoc. All specimens with sillimanite. Data from Guidotti (1970)(1973) (1974). (* - specimens with high biotite Mg/Fe ratio)

Spec. #	Wt% Ti-Mu	Wt% Ti-Bio	$\frac{\text{Ti Mu}}{\text{Ti Bio}}$	Mg/Fe Bio	Mg/Fe Mu	$\frac{\text{Mg/Fe Mus}}{\text{Mg/Fe Bio}}$
O-K-31	.47	1.55	.303	.726	1.100	1.515
O-J-20	.44	1.31	.336	.602	.909	1.510
O-K-61	.42	1.38	.304	.787	1.300	1.652
O-C-14	.44	1.50	.293	.752	1.222	1.625
O-C-13	.41	1.40	.293	.712	1.100	1.545
O-C-17	.37	1.33	.278	.619	-	-
O-C-21	.40	1.39	.288	.741	1.100	1.484
O-J-41	.47	1.30	.361	.752	1.000	1.330
O-J-50	.47	1.32	.356	.765	1.200	1.569
O-J-87	.45	1.39	.324	.766	1.111	1.450
O-J-88	.43	1.41	.305	.637	1.000	1.570
O-J-89	.32	1.25	.256	.731	1.000	1.368
O-K-29	.39	1.46	.267	.581	.833	1.434
O-K-30	.46	1.36	.338	.603	.917	1.521
Average	.42	1.38	.307	.698	1.061	1.506
Non Sillimanite-bearing Specimens						
O-K-9	.86*	1.22*	.705*	2.580*	3.666*	1.421*
O-K-8	.82*	1.27*	.646*	1.619*	2.182*	1.348*
O-J-86	.38	1.36	.27[illegible]	.706	1.143	1.619

Table 2G. Distribution of Ti between coexisting muscovite and biotite in relation to Mg/Fe biotite and K_D, Mg/Fe, Musc/Bio. Upper Sillimanite Zone, Bryant Pond Region. Data from Evans and Guidotti (1966) (* - specimens with high Biotite Mg/Fe ratio).

Spec. #	Wt% Ti-Mu	Wt% Ti-Bio	$\frac{\text{Ti Mu}}{\text{Ti Bio}}$	Mg/Fe Bio	Mg/Fe Mu	$\frac{\text{Mg/Fe Mus}}{\text{Mg/Fe Bio}}$
Sillimanite-bearing specimens						
8	.48	1.63	.294	.735	1.167	1.588
9	.40	1.41	.284	.748	.917	1.226
10	.43	1.68	.256	.630	1.100	1.746
11	.75*	1.47*	.510*	1.585*	2.000*	1.262*
12	.45	1.50	.300	.692	.923	1.334
13	.33	1.49	.221	.630	.769	1.221
16	.42	1.32	.318	1.010	1.200	1.188
18	.48	1.64	.293	.734	1.000	1.362
19	.82*	1.50*	.547*	1.250*	1.250*	1.000*
22	.51	1.58	.322	.830	1.100	1.325
24	.25	1.09	.229	.920	.909	.988
Average(1)	.42	1.48	.280	.770	1.009	1.331
Non Sillimanite-bearing specimens						
1	.43	1.46	.294	.826	1.222	1.479
3	.46	1.56	.295	.790	1.133	1.434
4	.77*	1.48*	.520*	1.610*	1.909*	1.186*
5	.90*	1.36*	.661*	1.660*	1.846*	1.112*
6	.38	1.41	.269	.776	1.000	1.287
Average(1)	.42	1.48	.286	.797	1.118	1.400

(1) Excludes specimens with asterisks

Table 2H. Distribution of Ti between coexisting muscovite and biotite in relation to Mg/Fe biotite and Kp, Mg/Fe, Musc/Bio. Upper Sillimanite Zone, Bryant Pond - Rumford Regions. All specimens from high-Al varieties of the Smalls Falls Formation

Spec. #	Wt% Ti-Mu	Wt% Ti-Bio	$\frac{\text{Ti Mu}}{\text{Ti Bio}}$	Mg/Fe Bio	Mg/Fe Mu	$\frac{\text{Mg/Fe Mus}}{\text{Mg/Fe Bio}}$
7/16/73	.59	1.000	.590	2.432	2.106	.866
Ru-P18b-73	.49	.92	.533	2.807	2.293	.817
Ru-P18a-73	.59	.89	.661	3.224	2.329	.722
Ru-P19-73	.64	.74	.865	4.151	4.915	1.184
Ru-G57-66	.64	.56	1.143	4.694	5.026	1.071
Ru-P20-73	.75	.60	1.250	6.703	5.947	.887
Average	.62	.78	.840	4.002	3.769	.924

Table 2I. Distribution of Ti between coexisting muscovite and biotite in relation to Mg/Fe biotite and Kp, Mg/Fe, Musc/Bio. K-feldspar + Sillimanite Zone, Bryant Pond Quad. Data from Evans and Guidotti (1966). All specimens with sillimanite. (* - specimens with high Biotite Mg/Fe ratio)

Spec. #	Wt% Ti-Mu	Wt% Ti Bio	Ti Mu / Ti Bio	Mg/Fe Bio	Mg/Fe Mu	Mg/Fe Mus / Mg/Fe Bio
31	.63	1.74	.362	.753	1.077	1.430
37	.44	1.56	.282	.776	1.182	1.523
41	.71	2.08	.341	.603	.917	1.520
43	.78	2.35	.332	.613	.857	1.398
51	.31	1.52	.204	.756	.929	1.229
52	.77*	1.84*	.418*	1.075*	1.600*	1.488*
53	.82*	1.90*	.432*	1.118*	1.333*	1.192*
55	.71	2.13	.333	.539	.800	1.484
60	.48	2.06	.233	.595	.714	1.200
63	.51	1.72	.296	.771	.929	1.205
65	.77	1.90	.405	.651	..857	1.316
67	.71	2.38	.298	.643	..786	1.222
68	.83*	1.77*	.469*	1.341*	1.727*	1.288*
69	.52	1.91	.272	.833	1.091	1.310
70	.52	1.89	.275	.751	.923	1.229
Average(1)	.59	1.94	.303	.690	.922	1.339

(1) Excludes specimens with asterisks