for cutting, staining and counting), inexpensive and useable by anyone who has a rock saw.

3) Large numbers of analyses for the statistical study of rock variation such as that of Whitten (1961) on granitic plutons can be made almost anywhere.

4) Little training is required in order to recognize the minerals of most rocks, so that counting may be performed by relatively unskilled personnel.

5) Counting through the binocular microscope reduces eye strain.

The principal disadvantage is that the various accessory minerals cannot be recognized. This disadvantage and the construction cost of this apparatus are far outweighed for rocks in which accurate estimates of the various accessories are not desired by the obtainability of the numerous modal analyses that can be determined for the time and expense of a single chemical analysis.

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THE COMPOSITION OF BAVENITE

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In recent papers by Fleischer and Switzer (1953) and Switzer and Reichen (1960) chemical analyses of bavenite and "pilinite" are consid-

TABLE 1. BAVENITE: ANALYSES EXPRESSED IN ATOMIC PROPORTIONS WITH Si+Al+Be=13

Locality	Ca	Si	Al+Fe	Be	H	O	x	n	Specific Gravity
1. Baveno	4.17	9.06	1.87	2.06	2.64	28.47	0.10	1.27	2.72
2. "Pilinite"	3.98	9.03	1.86	2.10	3.02	28.44	0.12	1.45	2.73
3. Russia	4.03	8.86	1.80	2.36	1.96	27.79	0.28	0.84	2.733
4. Russia	4.02	8.81	1.75	2.44	1.92	27.66	0.35	0.79	
5. Australia	3.94	9.09	1.28	2.63	2.53	27.92	0.68	0.93	2.71
6. Australia	3.78	8.94	1.24	2.81	2.44	27.55	0.79	0.83	
7. California	3.99	8.96	1.18	2.86	3.70	28.39	0.84	1.43	
Average	3.99	8.95	1.57	2.47	2.60	28.03		1.08	
			12.99						

1. Baveno Italy. Anal. Artini (1901) with BeO by Fleischer and Switzer (1953) and Al_2O_3 adjusted as given by Switzer and Reichen (1960) (anal. 1, Table 2).
2. Striegau, Silesia, Anal. Reichen in Switzer and Reichen (1960) who find that "pilinite" = bavenite.
3. Malshevsky mine USSR, Kutukova (1946) quoted as analysis 6, Table 1. Fleischer and Switzer (1953).
4. Analysis 5, Table 1, Fleischer and Switzer (1953).
5. Londonderry, W. Australia, Rowledge and Hayton (1948) quoted as analysis 8, Table 1, Fleischer and Switzer (1953).
6. Analysis 7, Table 1, Fleischer and Switzer (1953).
7. Mesa Grande, California, Anal. Carron in Fleischer and Switzer (1953, anal. 9, Table 1).

ered. In the second paper the formula $(Be,Al)_4Ca_4(SiO_3)_9 \cdot xH_2O$ is suggested as representing the cell content of bavenite with $Z=1$ for the unit cell measured by Ksanda and Merwin (1933) and $Z=4$ for the larger unit cell found by Claringbull (1940). This formula provides for mutual substitution of Be for Al which is indeed indicated by the analysis. Variation of the Be:Al ratio from 2:2 in this formula results in a charge imbalance.

In Table 1 the available analyses of bavenite have been reduced to

TABLE 2. BAVENITE: LATTICE DIMENSIONS (IN ÅNGSTROM UNITS)

	a	b	c	Locality	Author
1	9.69	11.55	4.96	Italy	Ksanda and Merwin (1933)
2	19.38	11.55	4.96	Switzerland	Claringbull (1940)
3	9.71	11.62	4.85	"Pilinite"	L. G. B.

atomic proportions on the basis of Si+Al+Be=13. The results of this calculation suggest the following formula for bavenite:

$$H_xCa_4Be_{2+x}Al_{2-x}Si_9O_{27}\cdot nH_2O$$

where x varies from 0.10 to 0.84, the average total oxygen is 28 and the average $n=1.08$.

Determinations of the lattice parameters are noted in Table 2. Data listed under 3 were derived from the powder data given by Switzer and Reichen (1960) after first indexing the data with the cell of Ksanda and Merwin (1933). The powder data do not appear to require the larger cell found by Claringbull (1940). The data give $V=555$ for bavenite and 553 for pilinite. For formula deduced above, using $V=554$, the calculated density for $x=0$, $n=1$ is 2.80 and for $x=1$, $n=1$ it is 2.75. The latter is in close agreement with the measured values 2.745 (Ksanda and Merwin, 1933), 2.74 (Claringbull, 1940) and others given in Table 1.

With a fibrous mineral such as bavenite, measured values of specific gravity are generally low, and it is unlikely that such measurements could be accurate enough to confirm the variations in x.

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ROGERSITE=WEINSCHENKITE[1]

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The University of Michigan Mineralogical Collections contain a single small specimen (*ca.* 1×.75×.5 inches), labelled "Rogersite on Euxenite, Mitchell Co., N.C.". Palache *et al.* (1944, p. 800) state that rogersite is "Probably an altered samarskite . . . . Of little validity." Rogersite was described by Smith in 1877 (p. 367) as a hydrated columbate of rare earths of the yttrium subgroup. Smith (1877, p. 367) describes the mineral as follows: "On some of the samarskite, but more especially on

[1] Contribution No. 253, The Mineralogical Laboratory, Department of Geology and Mineralogy, The University of Michigan, Ann Arbor, Michigan.