

Addendum by T. F. W. Barth.

Mountain leather has been observed at various localities in Norway but never further investigated. Antun's description of the Åna-Sira material prompted us to investigate with x-rays some additional specimens of mountain leather that were available to us. (The diagrams were taken by Mr. P. Sæbø). Two of the specimens gave x-ray powder patterns identical to that from Åna—Sira, and are thus additional examples of Norwegian palygorskites.

Both specimens were collected in 1937 when the railroad was under construction west of Kristiansand. In the upland («hei») between Greipstad and Øyslebø the railroad follows a breccia zone. On joints and sheared surfaces large sheets of white mountain leather composed of *palygorskite* and *calcite* were found at Fossestøl; more earthy varieties of the same substances filling cracks were collected at Krossen. These localities are at the railroad track 1 and 2 km respectively, east of the lake Høyevann.

Other minerals occurring in this system of breccia zones are *hematite* (compact, platy, red hematite) and, on the track just south of Høye Station, *pyrolusite* in composite groupings of needle-like lustrous crystals (polianite). Manganese oxides have been known to occur in fissures in the gneisses around Kristiansand and Mandal (S. Foslie, N. G. U. no. 126, 1925) but large, well-defined crystals (polianite) have not been described before.

A pulverizer for micas and micaceous minerals.

by

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The process of grinding micas in an agate mortar to a powder sufficiently fine for x-ray work is both tedious and awkward. Even after a thorough grinding the grains still have a sufficient size to give spotted films because of single crystal reflections. This effect can be avoided by prolonged grinding, but then the lines will often be blurred and too poorly defined for accurate measurement, probably as a result of distortions of the crystal structure because of the weak bonding between individual layers of the mica lattice. Crushing in the several different types of commercial mills gives equally unsatisfactory results.

A mica pulverizer built in the Mineralogical Museum of Oslo University works so well that it would seem worth while publishing details of its construction.

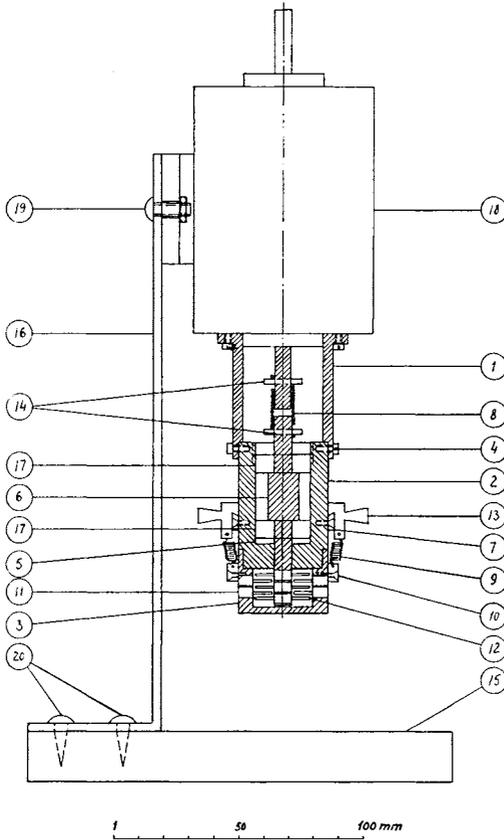


Fig. 1. Drawing of the mica pulverizer giving details of the construction. 1. Connecting ring. 2. Ballbearing holder. 3. Container. 4. Screwed disc. 5. Disc. 6. Axle. 7. Ring. 8. Spring. 9. Spring. 10. Spring-fastener. 11. Fixed knives. 12. Rotating knives. 13. Clamp. 14. Pin. 15. Base. 16. Stand. 17. Ballbearing. 18. Motor, 1/10 Hp., 9000 rpm. 19. Nut and bolt. 20. Wood-screws.

The principle is very simple: mica particles floating in the air are hit by sharp knife edges which split them without causing any lattice distortions. In practice this is effected by having two sets of knives in a small container, one set fixed and the other revolving at a speed of 9000 r.p.m. The edges of the two sets of knives face each other, and the knives are sufficiently far apart to give no scissor effect. The revolving knives are «feathered» so as to cause the mica grains to whirl about within the container when the pulverizer is running. The details of the construction are given in Fig. 1.

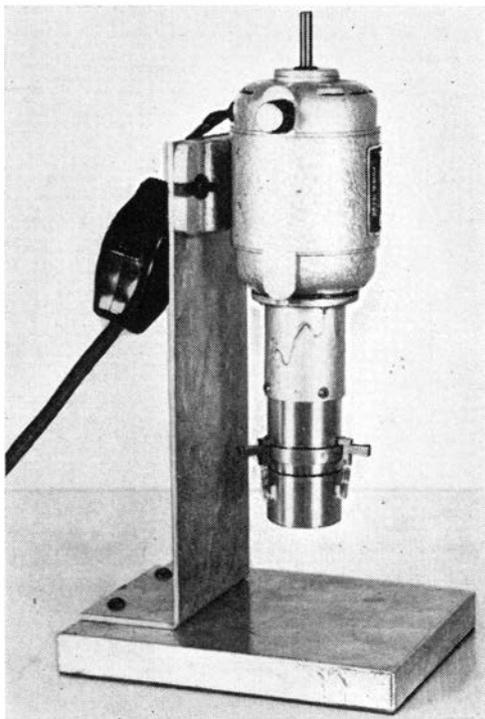


Fig. 2. The mica pulverizer.

The pulverizer may be built on a large or small scale according to requirements. The one drawn in Fig. 1 works well with samples from 0.01 gms to 2 gms, which are reduced to powders of x-ray size in 10 minutes. The powder is fine enough to keep the preferred orientation effect to a minimum. If a very high degree of accuracy in the intensity measurements is required, this effect can be eliminated in the conventional way by making the spindle of a not too finely reground, wetted and dried mixture of the mica powder with an amorphous, low-re-sorbing substance such as organic coal and a little gum tragacanth.

The principle of the instrument was outlined by the author to instrumentmaker Thorolf Nordby, who with his usual skill designed and built it.