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## Some Quartzite Pebbles

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supercentrifuge, complete chemical analyses, X-ray analyses, microscopic study and base exchange determinations. Work, to date, suggests that the colloidal portions of the two materials differ in their mineralogical character; one apparently containing as its principle clay mineral, illite, the other, a mineral of the kaolinite group.

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### SOME QUARTZITE PEBBLES

CHARLES CARTER

Near Luverne in Southwest Minnesota a ledge of quartzite extends northeast to southwest for a few miles. At one point along this ledge a quarry not now in operation has left an almost perpendicular face of some fifty feet. In this face are found crevices of varying widths. In one width of 8 to 12 inches and running back an undetermined distance, angular fragments of quartzite were found. Among them some rounded pebbles were obtained. The feature called to your attention is the symmetrical form and the highly polished surfaces of these pebbles. The surfaces of some are nearly as well polished as that on the quartzite in Gitchie Manitou Park in Northwest Iowa. The polishing there has been attributed to the work of the wind carrying fine sand or soil. The pebbles from the crevice show no glacial scratches or markings. Some water, especially that of melting snows, may be a factor in the polishing. But the chief cause is probably the wind carrying fine particles and circulating through the crevice.

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### THE GEOLOGY OF GREENE COUNTY, IOWA

WILFRED B. TAPPER

A layer of Wisconsin drift ranging up to 150 feet in thickness mantles the better part of the bedrock surface of Greene County.

The shales and coals of the Pennsylvanian Des Moines series are limited to three townships in the southeastern part of the