They all have a white or light colored streak. They are all more or less glassy in lustre. They differ in color, but that is not an essential property unless the substance is a powder. They apparently differ in crystallization, but it is found that under the microscope even the jasper and flint are crystalline. Chemists can prove that they are all of similar composition. The only difference is, that in the colored varieties the quartz is stained with some substance present as an impurity and not as a part of the mineral. For example, jasper is quartz stained with iron. Amethyst is quartz thought to be stained with manganese, and so on for other colors. The different names are merely given for convenience, but do not imply any difference except that due to impurities. The question of crystallization should be illustrated by allowing crystals to form from evaporating solutions of sugar, salt, alum, bluestone, etc. Notice that the shape of the crystal depends upon the substance, while the size depends upon rapidity of evaporation. Every substance has its own system of crystallization. Iron pyrites may be found in cubes, octahedrons, and dodecahedrons, but all these are of the isometric system. Quartz belongs to the hexagonal. True there are a few exceptions to this rule. Calcium carbonate, for example, crystallizes in two systems, one represented by calcite, the other by aragonite. The smooth, pearly inside of a sea sheel is proved by the microscope to belong to the aragonite type, while the rougher outside belongs to the calcite.

Now just as all varieties of quartz were taken for study, so should we take other groups. The ores of iron can best be taken together. Compare and contrast magnetite, hematite, limonite, and siderite. The last one is very different from the other three. Try the effect of acid on its powder. The children have long ago learned the acid test for lime. They see the same here, but less energetic in its action. It is time now for them to know that escaping carbon dioxide causes this *effervescence*.. Then siderite and limestone have this gas in common. The other three ores mentioned are oxides. Be sure to notice their streak, for it affords the safest mark of distinction. A short talk on the manufacture of iron and steel from the iron ore would interest the boy, especially if he has ever been where iron is mined or manufactured. With the iron ores, pyrite may be brought in incidentally as an important iron compound, but is worked for its sulphur instead of its iron.

Another suitable group for study may be found in the three forms of gypsum, the glassy selenite, the fibrous variety, and the hard, white, compact kind, which when free from all stains is called alabaster.

After the lesson on quartz, have the boy examine cuff-buttons that may resemble, say, agate. Are they agate? When he studies amethyst, tell him manganese is used to stain glass one shade of blue. Rock crystal is used for cheap jewelry. The practical use appeals to the average boy.

Education in Japan.

Japan is attracting so much attention now that a few lines from Henry Norman's "The Real Japan," in relation to education in that country, will prove of interest and may serve to show how real education may hasten the development of a people. Scarcely a generation ago (1872) the Emperor issued an order "that henceforth education shall be so diffused that there may not be a village with an ignorant family, nor a family with an ignorant member." Education in Japan is compulsory and secular, but not gratuitous. It consists of five parts: Kindergartens, elementary schools, middle schools, special schools and university.

Let us in Canada mark well that it has kindergartens and special schools, and that it is compulsory. The spirit of Japanese education is summed up in three words by the late minister of education, Count Mori:

"It is our aim to inculcate and develop three qualities in our people—obedience, sympathy and dignity. Obedience, because only through obedience come regularity and serenity of life. Our people are irregular at present, and the influence of our rebellion ten years ago has been widespread, for one thing, in making them so. Therefore obedience ranks first among the qualities they need. Sympathy we must inculcate, because it is the crowning virtue of civilization and the indispensable basis of the democracy we hope, like other nations, to become. Our people have emerged too recently from feudalism to possess sympathy to any great degree, and without sympathy the best man is but a savage. Finally, dignity is the handle of all the blades of character. The Japanese are an impulsive people, and now that they are about to meet the outside world on equal terms for the first time, the value of dignity cannot be over-estimated. These three, again, are the characteristic of an ideal army—invariable obedience, perfect sympathy of high with low, and low with high, equal dignity in victory and in defeat. To aid in their development, therefore, we have established military drill in our schools."