

ally better constituted, but have not been brought under similar enriching influences.

We observe, then, two facts: first, that the richness of these galenas is due to the circumstance of small crevices becoming filled with a highly concentrated form of argentiferous mineral, not necessarily silver sulphide; and second, that the deposition of this rich accompanying product is not contemporaneous with the precipitation of the galena, but is in all probability of secondary origin, having been introduced subsequently. This brings us to the next point, viz., the chemical nature of the minerals which fill these cavities. We saw just now that silver sulphide itself is frequently deposited in this manner, but there is another element which seems to have a peculiar affinity for silver and is often found in conjunction with it; I refer to antimony. Prospectors have a familiar way of ascribing the richness of galenas to their association with what they term "ruby silver and gray copper" and there can be no doubt that many of the Slocan ores owe their value largely to the presence of these minerals. Dark ruby silver or pyrargyrite is a sulphide of silver and antimony, which is to say that the three elements, silver, antimony and sulphur enter into its composition in fixed ratio. It contains when pure some sixty per cent. of metallic silver and may be readily detected in galena by scratching the specimen with a pen-knife when the part scratched will exhibit a ruby colour, or as the miners express it, will begin to bleed. The ordinary colour of this mineral by reflected light is very dark, almost amounting to black, so that it is always necessary to obtain the streak before its presence becomes apparent. In the lighter variety known as proussite, the antimony is replaced by arsenic and there is no occasion to hunt for it with a knife or anything else as it is naturally of a beautiful cochineal red which speedily catches the eye. This particular variety is not commonly met with in galena, but in a few of the dry quartzose ores in this region it is responsible for almost the entire value.

The other highly argentiferous mineral referred to, gray copper, is, on the contrary, very often associated in the same way as dark ruby. It is known to mineralogists by the name of tetrahedrite, which has reference to the geometrical outline of its crystals; the term gray copper is, however, more generally employed on account of its colour and the fact of that metal being its chief constituent.

Antimony and incidentally arsenic also enter largely into its composition. The main thing to be borne in mind in connection with this is that in the case of pyrargyrite, silver is an essential element, whereas in gray copper it is merely present as an accessory, having partly replaced one of the other constituents, to the extent sometimes of twenty and even thirty per cent. of the whole.

It is worthy of mention though that some gray coppers, like some galenas, are almost destitute of silver contents.

I do not propose to go into the subject of concentration, but I wish to remind you that these valuable minerals which accompany the galena are very often lost in that process. Not only are they of much lower gravity and therefore difficult to separate from the gangue, but being extremely friable they flour readily when crushed and pass away in the slimes.

It may possibly appear to some that I have here attempted to lay down rules which will enable them to

distinguish at sight the richer from the poorer galenas, and this is doubtless true so far as it goes; but so vain and elusive is the science of the mineralogist, if I may be permitted to express the opinion, that what is true of one district is not necessarily so of another, that I cannot therefore do better than conclude with a quotation from one of the standard English works on mineralogy which says: "There are apparently no external characters which serve to distinguish even the highly argentiferous ores from ordinary galena; the question can only be solved by analysis."

I have already occupied so much valuable space that I have perforce to end here for the present, but with the editor's permission I hope to be able to supplement this with another article at some future date.

#### FROM THE EDITOR'S NOTE BOOK.

PEOPLE in England will ere long have a very fine and large idea of the fabulous richness of British Columbia's mineral wealth—that is, if they will only swallow with the proper amount of credulity everything that is published in the Old Country papers. Here is a well-spiced sample with the tolerably sensational caption "Streets of Pure Gold" which recently appeared in a highly respectable Plymouth journal:

"A miner accidentally probing a hole in a street of Victoria, Vancouver, (*sic*) turned up a quantity of gold. Setting to work in real earnest, he found so much that he decided to set up a 'claim' on the spot. The civic authorities are now seeking means to prevent the man digging up the streets. Keen interest as to the result ran high, and people were greatly excited when the mail left."

The local colouring imparted to this interesting story is truly admirable and clothes the whole in a garb of probability. People have certainly been known to probe holes in the streets of Victoria, particularly in rainy weather, and have then and there sworn to "set up" a claim—for damages. Then, again, Victorians have a conservative affection for their streets just as they are, and would not have them meddled with, no, not for all the gold of Klondyke.

"Westralia" has long been a name to conjure with on the London stock exchange. It is euphonious and has a seductive sound. "But Britcolumbia!" The perpetrators of this outrageous abbreviation are, fortunately perhaps for them, unknown, but the word appears on the prospectus of another wild-cat Klondyke promotion, yecept "The Britcolumbian Exploration and Development Syndicate." The public are earnestly warned not to delay in "taking a few shares" as Mr. Ramsay, one of the directors, has already left for London, Ont., "and as soon as he commences to operate the shares will go to a high figure." The object of the syndicate is to exploit British Columbia for gold (and incidentally, of course, Great Britain for idiots) "the existence of which is" the prospectus informs us, "proved beyond question, the recently discovered Klondyke field alone being a veritable Eldorado." There is a good deal more of the same sort, but we imagine the quotation will prove quite enough for the digestion of the majority of our readers.

An extremely interesting comparative table showing the gold production of the world for the years 1896-