

MINERALOGY.

SOMETHING OF INTEREST.

To Amateur Prospectors.
PAPER NO. 3.
(SELECTED.)

In pursuing the subject of minerals there are various qualities presented for our study. We observe that stones or minerals have color; they have hardness in different degrees, from being soft and impossible to the nail to the extreme hardness of the diamond; they have weight; they have lustre from almost a total absence of the power of reflecting light to the brilliancy of a mirror. Some are as transparent as glass others are opaque. A few have taste. These are the most obvious characters and characters to which the mind would at once appeal in distinguishing species.

Other characters of equal importance are found in the internal structure of the minerals. On examining a piece of coarse granite, we find that each scale of mica may be split by the point of a knife into thinner leaves. Here is evidence of a peculiar structure, called cleavage, and wherever mica is found this peculiarity is constant. The field spar in the same rock, if examined with care, will be found to break in certain directions with a smooth or nearly smooth surface, showing a lustre approaching glass though somewhat pearly. It is true of feldspar also that this cleavage is a constant character for the species as regards direction and facility. In nearly all minerals this kind of structure more or less perfect in quality may be distinguished. In a broken bar of iron the irregularity of the grains proceeds from this cause. In granular marble, although the mass as a whole has no such structure, the several grains if attentively examined will be seen to present a distinct cleavage structure and consequent angular form. In finer varieties the grains may be so small that the characters cannot be observed; or again the texture of the mass may be so compact that not even grains can be distinguished.

This cleavage then, is a peculiarity of internal structure. It is intimately connected with another fact—that these same minerals often occur under the form of some regular solid with neat plane surfaces; and are furnished with symmetry and perfection, which art would fail to imitate. These forms are their natural forms, and every mineral has its own distinct system of form. The beauty of a cabinet of minerals arises to a great extent from the variety of forms and high finish of these gems of nature's workmanship. The mineral quartz sometimes occurs in crystals consisting of two pyramids united by a short six sided prism, and they have generally the transparency and almost brilliancy of the diamond whose name they bear in common language. The diamonds of central New York and many other localities are of this kind. In other cases a large surface of rock sparkles with a splendid grouping of the pyramidal glassy crystals. We might draw other illustrations from almost all mineral species. But this will suffice to show that in addition to the physical characters above mentioned, there are other dependent on structure, which affords distinction of species, apparent both in external form and internal cleavage. Still other characters are derived from subjecting species to the action of heat, or to acids and other reagents. One mineral when heated melts, another is infusible or only fuses on the edges, another evaporates. By such trials, and others hereafter to be described we study minerals in a different way, and ascertain their chemical character. This mode of investigation more minutely pursued leads to a knowledge of the constitution of minerals, a branch of study which belongs properly to analytical chemistry. The results are of the highest importance to mineralogists.

It is perceived therefore that the learner may (1) examine into the peculiarities of structure among minerals, (2) he may attend to the physical characters depending on light hardness and gravity, (3) he may acquaint himself with the effect of heat and chemical reagents—the chemical characters. These are three sources of distinctions giving mutual aid, and a knowledge of all is necessary to the mineralogist. To learn to distinguish minerals by their color, weight and lustre is so far very well, but the accomplishment is of a low degree of merit, and when most perfect make but a poor mineralogist. But when the science is viewed in the light of chemistry and crystallography it becomes a branch of knowledge perfect in itself, and surprisingly beautiful in its exhibitions of truth. We are no longer dealing with pebbles of pretty shapes and tints, but with objects modeled by a Divine hand, and every additional fact becomes to the mind a new revelation of His wisdom.

In the study of this science the learner will be introduced first to the structure of minerals. The subject is treated of under its usual name, crystallography.

GRAND LODGE OF ALBERTA.

F. & A. A. Masons.

Installation of Bow River Lodge

Bow River Lodge which has hitherto been working under a dispensation was regularly instituted 5th inst. The Grand Lodge of Manitoba having issued the necessary authority.

The officers for the ensuing year are as follows:—

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|--------------------------|-----------|
| Bro. Geo. Murdoch | S. W. |
| " G. L. Newman | J. W. |
| " Jan. McNeil | Chaplain |
| " Carney | Treas. |
| Wor. Bro. C. N. Campbell | Secy. |
| " A. F. Martin | S. D. |
| " McKenzie | J. D. |
| " Turnbull | Stewards. |
| " Milne | |
| " Major Walker | D. of C. |
| " Mortimer | J. G. |

THE EPISCOPAL CHURCH.

Plan of the Proposed Edifice.

A representative of the NOR-WESTER in his search for light, came across Mr. McCookie the well known architect, and he was invited by Mr. McC. to take a seat in the latter's snug little office. Mr. McCookie produced a large plan and then he proceeded to give the NOR-WESTER the particulars. The nave is to be 44 feet by 24, there is to be an out porch 5x9 feet; the vestry 11 x 9 feet 6. There is to be an organ chamber and staircase from the same size as the vestry. The chapel is to be 25 x 17 feet 6. It will accommodate 200 persons. The nave and chancel ceilings are to be open up to the roof.

The boards are to be three jointed. The church is to be fitted up with seats with ornamental ends. There is a rose window in the east gable and a triplet line light. These too are filled with stained glass. The whole is surmounted with ornamental spire. Fourteen tenders were put in, and the contract has been awarded to H. E. Smith. The plans have been prepared by Messrs. A. McCookie & Co. When the church is completed it will be one of the finest in the North-west.

CALGARY.

THE METROPOLIS OF ALBERTA

Its Situation—Extent—Buildings—Population and Prospects.
This one year old town is situated near the confluence of the Bow and Elbow rivers in the district of Alberta, within sight of the great Canadian Alps whose wreaths of eternal snow glisten in the sunlight and afford the traveler a never failing source of wonderment and pleasure. The town site is beautifully laid out in a regular natural basin formed by the wide bend of the Bow and Elbow rivers, both of which here well deserve the name of Bow. The valley is here from a mile to a mile and a half wide.

To the east is the natural opening through which the Canadian Pacific enters the basin and to the west is a similar opening through which the train emerges on its westward course. With the exception of these two gaps the immediate view is obstructed by bold, magnificent and continuous bluffs, whose escarpment exposes various kinds of valuable stone which will yet be a source of wealth to the town. To one accustomed to the dead level of the eastern prairie, or even to the rolling prairie of the Assiniboine, the valley of the Bow affords a most agreeable variety, and the traveller who enters it for the first time cannot help uttering exclamations of admiration. It is no exaggeration to say that it is one of the finest town sites in North America. It has already earned the distinction and it is well deserving of it. But if the local scenery is varied and charming, the view to the west where rise those majestic cliffs which have been often termed the backbone of North America is grand in the extreme. The great cones show them here and there beyond the peaks of the foot hills, and pierce the sky with their snow clad sides and spires.

The Canadian Mettoborn and the Devil's Head, the latter a curiously shaped mountain of a dark hue rounded like a dome are plainly visible on any clear evening from Stephen Avenue, and when the telescope is brought upon their icy cones the eye is furnished with a treat of which no eastern city can boast. Calgary has already assumed the dimensions of a city. There are at least three hundred buildings of all kinds, in the place. Here are the headquarters of the Mounted Police, there being a force here of at least 150 men. The first town site was laid out on the east side of the Elbow, close to where that river joins the Bow, but the location of the railway depot about a mile further west changed the business centre of the place, and most of the east enders moved over in the night time to the west side, though the store of the Hudson's Bay Company that of Messrs. King & Co. are still on the east side of the river, and the well known firm of I. G. Baker & Co., traders, occupy ground at the east end though on the west side of the Elbow. These firms are the largest in the place and as many are supposed to do an immense business. They have selected ground on the west side and they intend to build. The barracks of the Mounted Police occupy a beautiful situation on a rising ground at the east end, but it is evident that the heart of the business life is entering around the depot.

There is already here a Methodist Church, a Presbyterian Church and a Roman Catholic and the English Church people are arranging for a handsome structure to be erected this summer. There are already several hotels which furnish accommodation to the weary traveller.

Capt. Boynton, an Englishman of means and who takes a great interest in the place is erecting on Stephen Avenue a theatre which is to cost several thousand dollars. The building is in a fair way of completion and it bids fair to become one of the successful institutions of the place.

A noticeable feature is the existence of bar rooms and saloons, and the total absence of the liquor traffic, and to meet an intemperate person is a rarity. Hop beer is the most intoxicating beverage. This is due to the prohibitory law in force and is producing a quiet and orderly population. It is perhaps the most cosmopolitan place of its size in the Dominion. There is a western freedom about it that is most agreeable since drunkenness is a feature which does not enter into the tea ensemble of every day life.

The soil near and around Calgary is a light sandy loam. A magnificent country stretches to the north and north-east along the Red Deer River, towards which are already flocking large numbers of settlers. When it is borne in mind that the great frozen belt which stretches from Lake Superior to the Saskatchewan exercises no influence on this region, that the winters are mild, with only an occasional cold day, that there is none of that terrible winter severity which renders Manitoba in winter synonymous with the

Arctic Circle, some appreciation will be felt for the climate at least. While the traveler passes the country near and around Medicine Hat he enters a more agreeable climate, and every fifty miles west from that point makes a very perceptible difference. The winters of this district are neither so long nor so severe as those of the Red and Assiniboine valleys. Spring commences from two to three weeks earlier, and the fall is two or three weeks later. The prevalence of westerly winds, Chinooks, ameliorates the climate and renders winter not only agreeable but positively acceptable.

An application for a town charter has already been made to the North-west Council and in a few weeks the town will have an incorporated existence, thus giving it additional status and importance.

The people of the town are already moving in the matter of bridging the Bow in order to secure the Edmonton trade. A new bridge has been erected across the Elbow, thus uniting the old town with the new, and the Canadian Pacific Railway Company and the North-west Land Company have contributed \$250.00 each towards the construction of another bridge across the Elbow to connect with the Fort McLeod trail. The population of Calgary is already about 1000, which is rapidly increasing. Two through trains from the far east are now running weekly. Calgary, though not the end of the C.P.R. is the terminus of the road. West of this point the road is in the hands of the contractors.

With the development of the mineral treasures Calgary promises to become the Denver of the Canadian North-west. Indeed it is already designated by that name.

The waters of the Bow and the Elbow abound in trout, the mountain and brook variety which afford excellent sport to the citizen and tourist. The waters are clear and beautiful the streams being mountain fed and clear as crystal.

The proprietors of the town are the North-west company the Government, the railway Company, Mr. Stewart and some others. Lots have been sold principally on building terms and a rebate allowed for building within a certain time. There are already about twenty stores in this place, three or four hardware stores, two stationer stores, and the Non-Wester Printing Office, and through the columns of the Non-Wester, which is published every Tuesday, will be furnished to thousands of eager eastern people the most valuable information concerning this most promising young city. The North-west Land Company have just completed a handsome office on the north side of Stephen Avenue which is to be occupied by the efficient and gentlemanlike agent, Mr. Ramsay. That Calgary is to become the capital of the proposed province of Alberta there can be no doubt. A great future is before it, and it has all the conditions of a sound and substantial commonwealth.

FROM OUR CONTEMPORARIES.

(Friendly.)

We have received the initial number of the Non-Wester, a new twenty four column folio weekly, published at Calgary by Warner and Co. The prospectus states that the Non-Wester will support the principles of the conservative party, but the publishers wisely promise not to weary their readers with "political dissertations from a party standpoint," or with "the sing-song twice told political tales which have been dinned into their ears from the cradle upwards." The existence of two weeklies in a town a few months old affords a striking comment upon the rapid growth of North-west communities. We trust that the progress of Calgary may afford ample warrant for such newspaper enterprise and that both its journals may render good service not only to their promising town and province, but to the whole of the North West.—Moose Jaw News.

Many Happy Returns.

The Non-Wester, a new journalistic venture at Calgary, has reached our sanctum. The sheet is edited by Mr. Elliott, late of the press of this city, and contains the vim usually committed to paper by the pen of this veteran journalist. The paper starts under fair auspices, and promises to be an able exponent of Conservative views in the far west. We wish the publication long life and every measure of happiness which is said to be occasioned by a full view of the rugged peaks of the Rockies at that far hub. There is plenty of room up there for poetic pens, and the battle for supremacy in that direction will now lie between the Non-Wester and the Regina Leader.—Brandon Mail.

(Unfriendly.)

The Non-Wester, a new candidate for public favor in Calgary, has been published. The proprietors, Warner & Co., were in the jobbing business in this city for some time. The editor is, we believe, Mr. Elliott, late of the Blade—at least we judge so from the tone of the articles in which we recognize the name of our ancient and valiant foe. He loses no time in proclaiming his political principles, the salutary containing the announcement that the Non-Wester will be a Conservative newspaper. This will be of vital interest to the people of Calgary and beyond, they have lots of time to discuss the relative merits of Grit and Tory. We expect to hear of our friend publishing a newspaper in the Great Slave Lake and Mackenzie River country, printed in the Indian language, with a prominent intimation that the paper is Conservative.—Thanks (?)

In Manitoba and other heathenish countries they put chimneys together brick after brick from the bottom upwards. In Calgary a "brick" chimney can be trotted around on a man's shoulder, and it is no uncommon thing to see the tinker trotting along with a chimney under each arm. These "flues" are made of galvanized tin or iron. The top is rectangular and painted red with white lines to represent the mortar. When the contrivance is placed on the top of a house it looks just like a real chimney which the good housewife has kept clean,

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