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HEARTS RESOLVED AND HANDS PREPARED, THE BLESSINGS THEY ENJOY TO GUARD.—SMOLLET.

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REPORT ON THE GEOLOGY OF Newfoundland.

BY

J. B. JUKES, B. A. & F. G. S.

(Continued from our last.)

3.—We come now to Trinity Bay. In this district we entirely lose sight of the St. John's slate formation—its western boundary running down the middle of the peninsula between Trinity Conception Bays. Of the Signal Hill sandstones, too, I cannot undertake to affirm the existence further than from Breakheart Point to Old Perlican; though at the same time it is perfectly possible that what I have called the Trinity Bay sandstone may be only the upper part of that formation of which the Signal Hill sandstone forms the lower beds; and that thus this latter rock, and even the St. John's slate, may be again visible on the West side of Trinity Bay. From Salvage Point to Heart's Content the coast is entirely composed of beds belonging to the Trinity Bay sandstone formation, consisting of alternations of dark red or purple gritstones and sandstones with thin beds of slaty rock. The beds strike along the coast, or about N. E and S. W. and dip invariably to the N. W. at an angle of about 50° or 60°.—Between Heart's Content and Heart's Desire these beds gradually trend round, and eventually strike into the country towards the S. E., and at the head of the harbour of Heart's Desire dip to the S. W. beneath the variegated slate formation. The variegated slate formation occupies the *whole* coast and a good breadth of the interior, from Heart's Desire to the head of Dildo Cove. Along the whole of this tract it is traversed by various anticlinal and synclinal lines, running nearly N. E. and S. W., and thus causing the rocks to dip alternately N. W. and S. E. Between Long Point and Witless Bay is one interesting locality, where in a hollow of the variegated slate rocks, reposes a mass of beds of slate and gritstone belonging evidently to the Bell Isle formation (See section No. 5.) The gradation from one into the other is here perfect; the upper beds of the variegated slate pass into a grey gritstone, with fine grain, but devoid of cleavage; these, as we ascend become separated by thin beds of shale, the thickness of which continues to increase, and that of the gritstone to diminish, until the whole is crowned by a mass of slate without any gritstone whatever. (See section No. 6.) What makes this locality still more remarkable, however, is the fact of the slaty cleavage being developed in the beds of slate themselves. These beds, which are curved up at a high angle on either side, are finely laminated, and they split as easily as any shale along their planes of lamination; but they are also traversed by a fine cleavage preserving a constant angle of nearly 90° to the horizon, and having the same strike as the beds.—The shale is thus minced as it were into small scales or little narrow chips, being cut *thin* by the lamination, *narrow* by the cleavage, and too fragile to retain any *length* in the direction of the strike of the beds. The lower surfaces of the gritstone beds alternating with the shale are likewise traversed by the cleavage for an inch or so upwards, as they break or decompose into sharp jagged edges.—These gritstone beds scarcely differ in fineness of grain from the whole mass of those composing the variegated slate formation in which the slaty cleavage is perfectly developed. About half a mile S. of this spot, in a small cove opposite Red Rock, among some beds of the ordinary red slate, I observed a band of red calcareous rock, traversed in every direction by small strings of carbonate of line, looking like fragments of shells, and containing concretionary balls of grey crystalline limestone. Underneath this was a pinkish yellow concretionary rock, with veins of carbonate of lime, and small balls of ironstone. The thickness of these beds was about 15 or 20 feet, and they are capable of being burnt into lime. I did not succeed in discovering in them any decided organic remains, though some of the markings were like faint impressions of shells.

At Dildo Head some beds of shale again appear resting on the variegated slate rocks which rise up from underneath the shale towards the S., and continue to dip to the N. W. to the head of the Cove, where the lower beds of the formation begin to shew themselves. Returning from the head of Dildo Cove, which forms the extreme southern point of Trinity Bay, we find the variegated slate formation still forming the coast through Spread Eagle, Long Cove, and Collier's Bay, down to Tickle Harbour Point, having on the whole a N. W. dip. On each side of Chapel Arm the undulations in the slate rocks are frequent pitches of shale resting here and there in their hollows, but there sides still remarkably preserving the usual inclination towards the N. W. and S. E. On entering Chapel Arm we come immediately on igneous rock. This is for the most part a rather largely crystalline greenstone, its texture however sometimes varies into a nearly compact basalt. It is frequently marked with circular bands in relief, of some inches in diameter; these are sections of spheroidal concretions which are not however sufficiently developed to be detached from the mass, and the nucleis of which are of the same character as the rest of the rock.

On the W. side of Chapel Arm the variegated slate rock abuts against the greenstone without undergoing any apparent alteration, except that its colors become fainter, and that the red beds lose that hue entirely as they approach the igneous rock. This change of color, however, takes place sometimes where no igneous rock is present. On the E. side of Chapel Arm patches of shale and gritstone rest upon and have been caught among the greenstone, and are of course greatly altered from their original characters. The shale is hard, brittle, and rings with a metallic sound, and the gritstone is almost crystalline in texture, and in places joined so as to assume an irregular columnar form. The greenstone does not come out upon the coast in any other part, but it spreads a good way in the interior, the hills called Spread Eagle Peak, Old Shop, and the Tolt, being certainly composed of the greenstone and its cognate rocks. Passing round the extremity of Tickle Harbor Point, we find the upper beds of the variegated slate formation dipping regularly under the Bells Isle shale and gritstone, which occupies the whole of the West side of this long headland up to Tickle Harbour. Not far from the extremity of the point the shale contains a great bed of conglomerate 30 or 40 feet thick, of a light grey colour. The pebbles consist of white quartz, are seldom larger than walnuts, and are compacted together by a grey cement which is slightly calcareous. In the cliff at this place is seen a very neat example of a fault, and of the effects which is sometimes (though perhaps rarely) produced by a fault on the surface of the ground. (See section No. 7.) In Tickle Harbour an entire change takes place in the rocks forming the surface of the country, produced probably by a great fault, but the exact nature of which cannot be ascertained by reason of the lowness of the land and the want of a continuous section. A mile or two W., however, of Tickle Harbor, the cliffs again commence, and the first thing seen is a mass of serpentine with some impure stealitic and a yellow quartz rock containing crystals of feldspar. Over these, which are not above 20 or 30 yards across, is an ash-colored slate, then a dark purple slate, then a slate with a brown stripe, surmounted by a grey slate, the whole having a thickness of 400 or 500 feet, dipping N. W. and passing upwards into a grey mass of alterations of slates and gritstones, forming what I have called provisionally the Trinity Bay sandstone formation. This formation, which in its upper parts consists entirely of thick beds of hard sandstone and conglomerate, occupies the whole coast from the Bay of Bulls to Trinity Harbor. Its prevailing dip from Bay of Bulls Arm to Bonnaventure is N. W. at various angles of inclination, and thus it shortly passes in that direction under the variegated slate formation. These latter rocks come in at the head of Bay of Bulls Arm, and form a band of country running thence by Centre Hill to the middle portion of Random Island about Hickman's Harbor, and striking from the Island across Smiths Sonnd into the mainland W. of Pope's Harbo.—From under this band of variegated slates, however, the Trinity Bay sandstone again arises to the W. and in Random S. W. Arm continues to rise to the W. or dip to the E., until at the head of the Arm its lowest beds come out to the surface, and we have the same slate rocks appearing underneath them which I mentioned before as occurring near Tickle Harbor. In Random Island, however, this is not the case, as the Trinity Bay sandstone, after rising to the W. from under the variegated slate formation, very soon arches over, dips again to the W., and so passes under another band of the variegated slates, which, as they also dip rapidly to the W. shortly become covered by the next superior rocks, the Bell Isle shale and gritstone. (See sec. No. 8.) The shale and gritstone occupies all the N. W. corner of Random Island, and a considerable tract on the mainland opposite. This tract is low and level, and is bounded to the W. by a range of hills, some spurs of which strike the coast opposite the W. side of Random Island, about one mile S. of the bar which nearly connects the Island with the main. The rock of which these hills are composed is a red sienite, very similar to that which occurs in some places at the head of Conception Bay. The junction of the sienite, with the shale and gritstone, is at one place clearly exposed; it partly overlies those rocks which dip slightly towards it, and abut against it. The shale near the junction is indurated, and the gritstone more than usually hard and of a simi-crystalline texture.—(See diagram No. 9.) In several other points at the extreme head of Random Sound, masses of a dark grey schistose rock may be observed resting on or entangled in the sienite, but there is no evidence to shew to what formation they belong. The sienitic rocks have apparently a very extensive range in the interior, as the same chain of hills runs beyond the extremity of Random S. W. Arm for some distance; they do not however, appear elsewhere on the coast. The variegated slate rocks both in Random and Smith's Sounds have some remarkable localitis. In one part of Smith's Sound the variety of color is very great,—bright red, dull red, cream color, deep brown and green, alternating with each other. The cream colored portion is rather calcarious. In Random Sound, near Hickman's Harbor, a bed of white crystalline quartz rocks, 15 feet thick, is apparently interstratified with the red and green slates; and some distance above it two thinner beds of a similar character appear. The whole is in a highly inclined position, but not contorted, and the beds of quartz preserve a regular thickness for several hundred yards.

From Pope's Harbour to Trinity Harbour the country is composed of the Trinity Bay sandstone one anticlined line only occuring in this tract.—This line passes through New Buonavonture and runs thence into the country in a N. N. E. direction. To the W. of this line the rocks dip W. N. W.; to the E. of it, or along the coast, the dip is E. S. E. at various angles of inclination. Between Trinity Harbour and Robin Hood's Bay the beds are perpendicular for a short distance, but afterwards recover their Easterly dip, and in Salmon Cove are nearly horizontal.

The detached Islands about the mouth of Smith's Sound are composed of a red and grey fine grained gritstone, belonging, I believe, to some part of the variegated slate formation. Some of the beds on these islands would make tolerable building stone. Just E. of British Harbour (called also Shutsin Harbour) a great trap dyke comes out upon the coast cutting through the gritstone beds without producing in them any sensible alteration. This dyke is two or three hundred yards wide, and is very interesting. Near its sides the rock is vesicular, nearly black, and precisely resembling modern lava; approaching the centre it becomes compact and of a dark grey, and part of the very central portion is columnar. The part in which the columns are best developed is about 20 yards wide, forming a nearly perpendicular band slightly curved. The columns are small and irregular in the number of their sides.—They are nearly horizontal, and are divived by 3 or 4 perpendicular beds as it were. In the two outside beds the columns are slightly bent; those on one side downwards, those on the other upwards. (the section No. 12 will make this description more clear.) North of the principal dyke two or three smaller ones occur, cutting through the gritstones without disturbing them.

Concerning the relative age of the rocks of Trinity Bay, it it clear that the greenstone and sienites are the most modern; and from the mass of sienite to the W. of Random Islands forming hills which seem to keep a nearly N. and S. direction, it is probably that to the outburst of that sienite is due the dislocations affecting the stratified rocks which have likewise an approximate N. and S. direction,—or at all events that the outbreck of the sienite and the dislocation of the rocks was simultaneous. It would appear also that the variegated slate rocks are conformable to the Trinity Bay sandstones; but as I have not yet traced any gradation of one into the other, their continuity is uncertain. How beneath the Trinity Bay sandstones we have seen that slate rocks shew themselves both in Tickle Harbor and the head of Rundom, S. W. Arm, and it thus appears probable that this series may represent or contain what I have called the Signal Hill sandstone and St. John's slate formation. To this latter, however, the variegated slates have been shewn clearly unconformable in Conception Bay. In the absence of all organic remains, and the want of a good continuous section, the distinctness or identity of two formations can never behold as proved by mineral character along; I have therefore left the question open for future evidence to decide.—Such evidence I hope to get, early in the next spring, at the head of St. Mary's Bay.

The external characters of Trinity Bay are distant and well deserving of notice. In those parts occupied by the Trinity Bay sandstone formation the land is high and the cliffs bold, the summits of the hills however are not craggy, and their outline is tame and regular. The country is generally thickly wooded, but the trees are not remarkable for size, and the fertility of the soil is not striking, though in sheltered situations it appears of an average quality. The great difference between these rocks and the variegated slate formation, in the character of the country which they compose, is obvious about Heart's Desire and in Random Island.—In each case the tract occupied by the variegated slate is low and level. The improvement in the size of the trees is great, and wherever a spot has been cleared of trees and moss, or a strip of ground along the sea shore is naturally so unincumbered, the soil is clothed with a rich pasturage of bright green grass, sometimes scattered with wild clover. The tract between Heart's Desire and Dildo Harbor would amply repay the labour of cultivation, as pasture land certainly, if not as arable, were but a good road once opened to the capital; and it certainly seems a pity that such a space should be left unused as would be fully able to supply the most populous part of the Island with the common luxuries of fresh meat, butter, milk and eggs, leaving out of the question the great resources that would be thrown open to a part at least of the laboring population. The tract about the N. W. corner of Random Island is perhaps too remote from the mass of the population to be at present valuable as an agricultural district; otherwise the whole of the ground formed by the variegated slates and Bell Isle shale formation, from the size of its timber and the patches of grass, is evidently of good quality, and able, if opened, to support a much larger population than is now to be found on the neighbouring shores. The hills about the head of the Bay, around Chapel Arm, and which are composed of igneous rocks are remarkably distinct in appearance from the other high lands which surround the Bay; they are detached from each other, and have a peaked and serrated outline; they are clothed with wood, but not I believe of a quality better than ordinary. The sienite hills W. of Random Island are likewise immediately to be distinguished by their peaked and decided outline from the heavy forms of the gritstone ridges. One detached hill, however, composed of the sandstone rocks, lies between Bay of Bulls Arm and Deer Pond. It is called Centre Hill, and is upwards of 1000 feet in height. It is a fact remarkably characteristic of the way in which this country is covered with water, that from the summit of this hill I counted 152 "ponds," varying in breadth from 20 or 30 yards to about a mile, none of which were at a greater distance than 8 miles from the foot of the hill. The cliffs around the entrance of Random Sound are very striking; the immensely thick beds of gritstone forming smooth perpendicular walls of great height above and depth below the level of the sea,—a large block or ledge here and there jutting out to support a stunted fir, and an occasional mass of ruins affording an uncertain landing at their foot

I have drawn section No. 10 from Shoal Bay, around the head of Conception Bay and Trinity Bay, to the country S. W. of Random Island, by way of exhibiting, in a connected form, some of the facts mentioned above. It does not aim at giving more than the rudest imitation of the outline of the country, with little regard to proportion. The contorted position of the St. John's slate is given from analogy, as I have never actually traversed the country between the head of Conception Bay and the E. coast.

4.—I had been so long detained by contrary winds on the Western part of the Island that the only places I was able, on my return, to visit in Placentia Bay, were St. Lawrence, Mortier, Audierne, & Great and Little Placentia. From what I saw in passing from one to the other, and from what I gathered from different accounts, I am enabled to state that the principal formation of Placentia Bay is the variegated slate. In the neighbourhood of Great & Little Placentia the rocks are chiefly a dull red and green compact slate rock, but devoid of slaty cleavage, evidently the lower beds of the variegated slate forma-

tion. At Little Placentia the dip of these rocks is N. W. at an angle of 60°. The N. side of the N. E. Arm of Great Placentia is composed of a porphyritic greenstone of a fine grain, with small disseminated red and white crystals. I could no where trace the junction of this rock and the other formation which forms the cliffs on the South side of the Arm. The whole of the S. E. Arm of Great Placentia and the country about is composed of the variegated slate rock, dipping either S. E. or S., at various angles of inclination. From this Southern dip we should of course expect to find the country to the South composed of the higher beds of the variegated slate rocks; I believe the whole of the country between Placentia and Cape St. Mary's to be so occupied, but was prevented ascertaining its precise character, or the position of the beds, by stormy weather and the want of a harbor along the coast. Fox Island, Red Island, Long Island, and Audierne, are composed of the most characteristic beds of the variegated slate formation. The neighbourhood igneous rocks, however, is shewn by the occurrence in the latter Island of a mass of dark purple porphyry, associated with quartz rock.

The sea coast from Cape Chapeau Rouge through Little St. Lawrence, Burin and Montier, is composed of a dark greenish grey schistose rock in which all trace of bedding is sometimes lost, but which, near the entrance of Mortier Bay, dips 60° to the S. W. On going up Mortier Bay the most singular and perplexing variety of rocks presents itself, the green schistose beds abovementioned continue for about 2 miles into the Bay, but are suddenly replaced by quartz rock in a large amorphous mass on the S. side of the Bay, while on the N. side a serpentine with bands of quartzs comes in, and over these lie patches of black shale with their beds of grey gritstone precisely like the Bell Isle shale formation, but much twisted and contorted; these latter rocks run for some distance on the N. side of the Bay into the large Cove called Spanish Room. On the S. side of the Bay the quartz rock, arter forming a lofty cliff for about half a mile, suddenly ends, and regular beds of variegated slate are found abutting against it and dipping from it in a Westerly direction. The Bay here trends to the S. W. and these rocks apparently continue along its South shore; on the opposite side of the Bay a peninsula juts out, forming the South side of Spanish room. It is nearly a mile in length, and is composed of the following rocks—(See Section No. 13) The point of the peninsula is occupied by a rock which whether to call a sandstone or a gneiss is a matter of doubt. It has evidently been formed of the detritus of a red sienite, a round pebble of which rock I found enclosed in it; but in appearance, in the slightly rounded forms of its crystalline components, and their laminated arrangement, it exactly resembles gneiss. It is tough, but not very hard; it is regularly bedded, dips to the N. W. at an angle of 70°.—And is divided into square blocks by joints that follow the dip and strike of the beds. It would make a very fair building stone, if care were taken to place it with its planes of lamination in a horizontal position The thickness exposed of this rock is about two hundred feet. To the low cliffs composed of this, succeeds a small bank of sand and rubbish, immediately beyond which is another cliff about forty feet in height, composed of beds of red and green marls, containing a mass of red sandstone and conglomerate, dipping at a very slight angle to the S. W. and exposing a thickness of about 150 feet. In the lowest beds of marl are bands of white marl, indurated and very calcareous, and one or two beds of very hard concrerionary limestone, mottled with red and white. The cliff again ends, and a low bank of sand and boulders extends for about 200 yards, when suddenly some black and brown shale is found resting on two beds of light brown or whitish limestone, siliceous, and containing small tubular concretions and strings of spar, and agreeing in every respect with the thin beds of limestone in Chapel Cove, Holyrood, at the head of Conception Bay. The two beds of limestone are separated by a thin parting of shale; they are each about five feet thick; and the whole mass of shale and limestone dips at an angle of 75° to the S. S. E. The beds of limestone forms a ridge running across the Beach and keeping the same dip and strike some distance into the water Unfortunately the section here is again interrupted by a hollow filled with sand and boulders, immediately beyond which is a cliff of red sandstone and conglomerate, dipping in the same direction with the red marls and sandstones before mentioned, and exposing a thickness of about 40 feet. This last mass of conglomerate is rather soft, full of large quartz pebbles imbedded in fine red sand, and marked by regular lines of stratification. The remainder of the peninsula is a low beach running up to the mainland, the cliffs of which are there composed of the same serpentine rock, associated with quartz, which was mentioned before.—In my present ignorance of the surrounding country, I forbear to speculate on the presence of these red marls and sandstones; I was, however, struck with their resemblance to those which, on the W. side of the Island, form the lower parts of the coals formation. At the same time, the whole section is rather remarkable for its mystery than its capability of giving information. At the head of the harbour of Little St. Lawrence, the green & grey schistose rocks mentioned as forming the coast, are greatly twisted and contorted; and immediately beyond, the country is entirely composed of igneous rock. This igneous rock is a dull red; it is composed of a base of red compact feldspar, in which are disseminated crystals of the same mineral; it is then a feldspar porphyry; frequently, however, crystals of quartz occur, and the whole mass becomes granular and crystalline, and contains hornblende and other minerals, when it is called sienite. It forms a low tract of coast, rising into craggy hills in the interior, and extends from the harbour of St. Lawrence to Point May. At great St. Lawrence a small vein was found in this rock in which were small crystals of fluate of line, with one or two of galena, or sulphate of lead, and a few fragments, of green carbonate of copper. The vein, however, was only a few inches in width, and disappeared in the course of two or three yards without any sign of leading to anything of more importance. This rock forms the entire Island of St. Pierre. Langley, however, is composed of the variegated slate rocks. The Island is apparently traversed by an anticlinal line running N. E. and S. W. through Cape Percee, the rocks dipping on one side of it S. E. and the other N. W. (See section No. 14) In this Island the variegated slate apparently graduates down into rocks similar to the Trinity Bay sandstones—brown and purple grits shewing themselves about Cape Percee.

The external characters of the tract now described are of course as various as the rocks which compose it.—The fertility of the variegated slate rocks is every where apparent. The Island of Langley supplies St. Pierre with meat, butter, milk and eggs. The tract between Placentia and Cape St Mary's is (as I was informed) occupied by six hundred head of cattle, and thus evidently only requires a commodious communication with St John's to become a flourishing agricultural district; which character, I have little doubt, may be extended to the Western shore of St. Mary's Bay. This formation everywhere forms rather low and level ground; but that its fertility is not due to that circumstance alone, may be proved by contrasting it with the low shore around Laun and Lameline, composed of the red sienite and porphyry, where scarcely a stunted bush can be seen for miles, and the whole country is a low barren waste of rocks, thinly covered with brown moss. From Cape Chapeau Rouge along the Northern shore of Placentia Bay, the country appears very rugged and broken; and N. and E. of Placentie are some very considerable hills, but of what composed I am as yet unable to state.

5.—Owing to the same cause mentioned before, I was unable to visit any part of Fortune Bay; and I therefore now pass to the district between Cape La Hume and Cape Ray. This tract is altogether composed of either igneous rocks or the very oldest of the stratified rocks. Though I did not land on any point between Cape La Hune and the Burgeo Islands, yet from the contour of the coast and the description I was enabled to get, I can safely assert it to be composed chiefly, it not entirely, of granite. About the Burgeo Islands granite is the sole rock with the exception of some patches of mica slate and gneiss on one of the headlands Three varieties of granite were observed; one white, rather fine grained, with abundance of mica; another of a coarse grain, with less mica and a redish colour; and the third, which is by far the most abundant, a coarsish red granite, with large embedded crystals of flesh-coloured feldspar. These rocks occupy the whole coast, and a wide tract of the interior between Burgeo and La Poile Bay. Both the E. and W. points of La Poile are composed of the porphyritic granite mentioned above, or that which contains the large crystals of feldspar.—On the E. side of the Bay this granite is soon replaced by porphyritic greenstone, which runs up to Galley-boy Harbour.—On the W. side of the Bay, however, the granite runs as far up as Tooth Head, where it partly overlies and sends large veins into a mass of dark blue and purple schistose rock with a green stripe. The changes which take place at the junction of these two rocks, in their respective characters are instructive. At about ten yards from this junction the imbedded crystals of feldspar in the granite become smaller, and soon cease to be conspicuous the rock is then principally composed of crystals of quartz and hornblende, and that portion which forms the veins shortly loses hornblende, the quartz from crystaline becomes compact, and the veins at a short distance from the granite are entirely composed of compact quartz rock on the one hand, while their gradation into granite on the other, is well and clearly exhibited. The granite itself becoming more and more largely granular and crystalline as we advance into its mass, (see Section No. 15.) This schistose rock at its junction with the granite is hard, brittle and travesed by strings of quartz; as we recede from that rock, however, it passes into a compact flagstone, in thin beds of a fine grain, hard but tough, of a light green colour, occasionally having a slaty cleavage when it resembles the St. John's slate. Its generally dip is about South, at an angle of 80°. About one mile above Tooth Head, in a large cliff of regular flagstone, without slaty cleavage, two granite veins are seen four or five feet across, whitish, consisting of crystalline quartz, feldspar and hornblende, and producing no apparent alternation in the neighbouring rocks. On the E. side of the Bay opposite this is a mass of dark siliceous schist, with brown ferruginous stains, which his succeeded towards the South by quartz rock and chloritic schist, continuing to the greenstones porphyry mentioned before. I was informed that slaty rocks were traceable for several miles into the country beyond the head of La Poile Bay. Between La Poile and La Moine the rocks are all granite, principally red, and some of it of a rather fine grain. From La Moine to the Dead Islands, and thence to Port aus Basques and Cape Ray, mica slate and gneiss compose the entire country. About the Dead Islands, abundance of veins exist in the gneiss, some of which are thirty yards wide, and are composed of large crystals of quartz and feldspar containing as it were nests of mica and hornblende, thus constituting a very largely crystalline granite. These veins always run with the strike of the beds, and their sides present no well-marked line of division between the crystalline rock and the schistose mica slate and gneiss, one passing into the other by fine gradation. Some well-marked distinct granitic veins, however, were observed, which not only ran in the strike of the beds but crossed them and enclosed masses of the mica slate. No large mass of granite appeared in the neighbourhood of these veins, but such might exist a little way in the interior. The mica slate and gneiss do not occupy distant tracts, but beds of each alternate with the other, and some beds partook of the character of both.—The strike of these rocks is everywhere pretty uniform about the Dead Islands and Port aus Basques, being about E. N. E.; their dip, however, is Northerly at the Dead Islands, and Southerly at Port aus Basques. At the latter place, beds of a very peculiar character were interstratified with the gneiss and mica slate. They were not more than a foot or two thick, black heavy and crystalline with a fine grain, resembling basalt very much in appearance. Garnets occur sparingly scattered about the mica slate, but I observed none of any magnitude These gneiss and mica slate rocks continue from Port aus Basques round Cape Ray, for some distance towards Little Codroy river, where they terminate.

The external characters of the district now under consideration have a great uniformity. The same barren desolate appearance of hopeless sterility is everywhere visible. The interior consists of a broken country, of small hummocky hills, traversed in every direction by narrow vallies; the tops of the hills are bare rock, and their sides scantily covered with moss, while a few stunted trees miserably congregated in some more sheltered spot, serve but to render more apparent the nakedness they are not sufficient to conceal. Few parts of the country rise into hills high enough to give features to the scene—the general level of the land sloping gradually from the interior towards the sea; as moreover, the rocks continue to have beneath the water the same broken and uneven surface they had above, the coast is lined with a perfect fringe of islands, islets, and rocks above and under water, the smallness and number of which render it impossible to lay them down on charts except of very large dimensions. To those well acquainted with this coast it offers an abundance of safe and commodious Harbour; to others it is full of dangers they can neither avoid or foresee. Under no possible circumstance, can it give to its inhabitants more than shelter and fresh water.

6.—We come now to the description of the large, important and interesting district between Cape Ray and the Bay of Islands, which I regret that the time at my command did not permit me to examine more in detail. I considered it my duty, however, in the first instance, to acquire materials for a slight outline of the structure of as large a space of country as possible, leaving the detail of the particular districts that were worth the labor, to be filled in at a future period. In describing this portion of the country, I shall depart a little from the plan hitherto pursued, and give first a slight sketch of its physical Geography, which is as yet little known. From Cape Ray a chain of hills runs into the country in a N. E. direction, having an average height of about 800 feet above the level of the sea. They are of the most part flat-topped, but end in three conical peaks towards Cape Ray, and become very much broken at the distance of 15 or 20 miles into the country. This chain of hills is apparently continued towards the head of St. George's Bay, at a distance of about 20 miles from the sea shore, but gradually trending towards the N., they run round the head of the Bay, and thence towards the Bay of Islands. The tract on the S. side of St. George's Bay, between these hills and the sea, is generally of a low average level, tho' having an agreeably undulated surface; about Cape Anguille, however, it rises to a height of 4 or 500 feet above the level of the sea. On the N. side of the Bay another tract of comparatively low grovnd exists to the W. of the range of hills; namely, the country around Port au Port, much of which is not greatly above the level of the sea; and that part which does attain a height of 3 or 400 feet is table land. The hills about the head of St. George's Bay, though rarely exceeding 1000 feet in height, are of a mountainous character, rugged and precipitous; and this continues to be the nature of rather a wide band of country that runs from the E. of St. Geo's Bay across the Humber river, at the head of the Bay of Islands, and thence for a bonsiderable distance still farther N. About St. George's Bay this ridge of hills forms the water shed of the country; the brooks on one side running down into the Bay—those on the other emptying themselves into the Grand Pond, a large lake into the interior. This lake commences at about 15 miles in a straight line N. E. from the extreme point of St. George's Bay. In the first 7 miles the lake spreads out to a width of about 2 miles, and runs about E. S. E.; at this point, however, it bends round, divides into 2 branches, each from half a mile to a mile wide, which enclose an Island about 21 miles long and 5 across in the broadest part. In this part of its course the direction of the lake is E. N. E. The remainder of the lake, which is about 25 miles long and 4 or 5 across, gradually trends round to the N. E. and N. E. b. N. The whole length of the lake is about 54 miles. At its S. W. extremity it is enclosed by lofty hills with precipitous banks and is of great depth, no bottom having been found with 3 fishing lines, or about 90 fathom. Its depth is further proved by the fact, of the truth of which my Indian guide assured me, that its S. W. half is never frozen over in the hardest winters. Towards its N. E. end it gradually becomes shallow, and the hills slope down into a flat country which extends as far as the eye can reach towards the N. and N. E. The lake receives on all sides many brooks, and at its N. E. extremity a very considerable river, 50 yards wide and several feet deep, comes in, which is called the Main Brook. Three miles W. of the mouth of this river, an equally considerable one runs out of the pond; this latter is full of rapids for 5 or 6 miles, when it is joined by another river of about the same size, which flows from the N. W. These united rivers run towards the S. W. and in about 6 miles enter Deer Pond, a lake about 15 miles long and 3 or 4 across, running in a direction about N. E. and S. W. The S. W. end of this lake is agin encircled by the hill, through which the united waters force their way by a narrow and precipitous valley, forming the River Humber, and running out into the Bay of Islands. The part of the river between Deer Pond and the sea is about 12 miles, long, from about 50 to 100 yards across, and several feet deep; its navigation is, however, impeded by two rapids, one about 3 miles from its mouth and 3 quarters, of a mile long, and another shorter but steeper and more dangerous about half a mile below Deer Pond. The river which above Deer Pond comes in from the North and joins that running out of the Grand Pond, is likewise encumbered with rapids, our progress up each branch being stopped half a mile from their junction by rapids utterly impracticable with our boat. I afterwards interrogated the Indians respecting the course of the river in those parts into which I was not able to penetrate myself, and they informed me that the North branch which I shall call the Humble, rises in the country near Cow head, passes down to the E. through several lakes, two of which are 8 or 10 miles long, and gradually bends round to the S. or S. W., to the spot I have before described. The main brook, which runs into the N. E. end of the Grand Pond, is navigable for a canoe for a distance of some miles above the place where I turned back. It is there found to run out of a lake 8 miles long; on the other side of the lake the river is again met with, and passing up it 3 more lakes are crossed, each above 6 miles long. The extremtty of the last of these is about 18 miles from Hall's Bay, a branch of the Bay of Notre Dame; and crossing half a mile of land another brook is met with, down which a canoe can proceed to the waters of that Bay. It thus appears that the country drained by the Humber is upwards of 100 miles from N. to S., and 50 or 60 from E. to W., by far the most extensive system of drainage in the Island; it approaches the sea on 3 points, namely, Cow head, Hall's Bay, and St. George's Bay, and the united waters force their way out at a point nearly equidistant from each, having either formed for themselves or taken advantage of the narrow pass between Deer Pond and the South branch of the Bay of Islands, called Humber Sound. The Indians likewise informed me that if they proceeded from the East side of the Grand Pond opposite the East end of the Island, a days journey to the East brought them

to the South end of Red Indian Pond, a lake between 40 and 50 miles in length, and that from that point another day's march to the S. E. brought them to the middle of another large pond of about the same size. Each of these ponds empties itself by a brook into the Bay of Exploits. They each run about in a parallel direction with the Grand Pond, or about N. E. and S. W., and the S. W. end of the third large pond is within a long day's walk of White Bear Bay. It thus appears that there are to easy methods of crossing the country from N. to S. with a canoe. The first by proceeding from St. George's Bay, through the Grand Pond, to Hall's Bay; the second from White Bear Bay, through the third pond, to the Bay of Exploits.

(*Remainder next week.*)

Poverty of Public Men in America. Chevalier (whose Letters, says the *Boston Journal*, we have mentioned as just issued,) evidently thinks that our public characters, and especially our national functionaries, are allowed to spend and be spent in their country's service, rather more than is politic or just. He allows them to be "servants" of the people, but thinks they are not treated as well as *other* menials As might be expected, he would have a system of retiring pensions. On this subject he says:

"I had already seen the illustrious Galatin at New York, who having grown old in the services of the Republic, after having been for forty years a legislator, a member of the cabinet, a minister abroad, after having taken part in every wise and good measure of the Federal Government, was dismissed without any provision, and woule have terminated his laborious career in poverty, had not his friends offered him the place of president of one of the Banks in New York. The distress of President Jefferson in his old age is well known, and that he was reduced to the necessity of asking permission of the Virginian Legislature to dispose of his estate by lottery; while President Monroe still more destitute, after having spent his patrimony in the service of his State was constrained to implore the compassion of Congress, and these are the men to whom their country owes the invaluable acquisisitions of Louisiana and Florida."

Popular Characteristics of Australia. Australia seem to be much more like the portions of an earth lately known to us than any part of America, or any of Islands scattered through the Pacific and Indian Seas. NO volcanoes have yet been discovered, and no proof of the great antiquity of the products on its surface. Nearly all the species of plants, from the grasses to the loftiest ornaments of the forests, are new to the inhabitants of the Old World. The indigenous animals are, in several instances, of a different character to any in the countries of the other quarters of the globe, while none but the dogs have any affinity to the animals of this new continent; and its curious that the lizard or tortoise tribes, or any of the great mammalia. The native dog bears some resemblance to mongrel fox-dog, and has some characteristics indicative of its being so, the effluvium, the tenaciousness of life, its silence when dying, and its peculiar short bark, which leads to the supposition that it is not indigenous but a race derived from some shipwrecked animal. The human beings which have hitherto been found on the shores, or in the interior, are of the same species, and differ sufficiently in form to constitute a species distinct from any hitherto known. Some anomalies are evident, which belong to no other race. They have great and varied powers of mimicry, without having exhibited naturally any talent for constructiveness; though when instructed, they have showed an aptitude for building. It has never been ascertained that they have a definite notion of a Supreme Being who created them, and all they see around them. They have neither idols nor sacrifices, prayers nor priests; which places them among the lowest known in the scale of human nature. Their perceptions are quick, and like other savage and wandering tribes they can discover a track where the civilized man can see nothing to guide him. They are cunning, lively and capricious, but with feelings of attachment which are to be improved, and a sense of inferiority, which may be turned to good, both for the settlers and themselves if patience and Christian charity are exercised towards a race whose country we seize, and whose hunting grounds, on which their existence depends, we enclose, to feed our cattle and grow our corn.—*Ogl's Western Australia.*

West India Statistios—It appears that there is much of passion much of prejudice, some malevolence, and a good deal of misrepresentation as to the condition of the negro population in the Colonies, their feeling in their new situation, and the cultivation and produce of the estates. Mr. Scoble, an excellent authority says: "In British Guiana, the average crops of the years 1832 and 1833, prior to the time of apprenticeship, was 53,089 hhds. sugar, during 1838 it was 46,965 hhds.; being 6,131 hhds. less than was raised during the period of slavery. This was during the year of transition; and between the years 1833 and 1838 a dreadful mortality happened among the negroes, cutting off several thousands. In Trinidad in 1833, 22,761 hhds, of sugar were made; in 1838, 20,721 hhds. only were produced exhibiting a diminution of 2,040 hhds. In Barbadoes, where there has been a slight increase of population, in 1833 the sugar crop amounted to 27,015 hhds.; in 1838 it was 33,659 hhds. being an increase of 6,034. In Jamaica, up to September 1st, 1838, there had been 150,000 cwts. more of sugar sent to Great Britain than during the year before, and in regard to the whole West Indies, there had been but a slight diminution in the whole amount of produce. The compative value of estates in different Colonies had increased from ten to fifty per cent.

Last week we copied from a Bermuda papers a description of a fierce hurricane which devastated the Bermudas. We now insert a letter from a correspondent well acquainted with the place and the people, who earnestly begs assistance from wealthy and benevolent Englishmen for the sufferers by this calamity. According to our correspondent's statement, such aid will be more than needed. It is said that property worth £ 0,000 has been destroyed; while the entire White population is only about 5,000 a year. A subscription for the relief of the sufferers has been opened; and we entirely agree with our correspondent Mr. Gray, that the sudden, overwhelming, and absolutely inevitable calamity of a colony, constitutes a strong claim on the mother country for succour. His statement of the case leaves us nothing to add, but the willing offer of our columns in the way proposed by Mr. Grey, without charge to the charity. *Colonial Gazette.*

THE IRONSIDE.—The ship Ironside, an iron vessel of beautiful construction, arrived on Thursday, after a fine passage from Pernambuco. She is commanded by Captain Mitchell, and on this her second voyage to South America, has fully established the practicability of ocean nagigation. The Ironside is a vessel of very beautiful model.

The Star.

WEDNESDAY, MARCH 4, 1840.

We believe a petition numerously and respectably signed has been forwarded to the Honorable the House of Assembly, praying for the establishment of a NAUTICAL SCHOOL in the Town of *Harbor Grace*. There can be but little difference of opinion on the utility, might we not have said the necessity of such an institution, and we have no doubt but that the Legislature will give the subject that consideration which it seems to demand.

It this week becomes our painful duty to record the death of JOHN ELSON, Esquire, of the late firm of *Slade, Elson & Co.* Merchants, Carboner, where he died on Wednesday morning last, after a few days illness, in the 64th year of his age. The deceased will be long remembered in this Island for his liberality, integrity of purpose, and for the variety and extent of his literary accomplishments.

Died,

At Carbonear on the 18th ult., after an illness of four days, Frederic Shreve Newell, youngest son of Mr Thomas Newell of that Town, a child of extraordinary intelligence and much promise, aged 6 years and 2 months.

At Carbonear on the 19th ult., Elizabth, youngest daughter of the late Doctor Teulon, aged 16 months.

POETRY

LANGSYNE.

In the sunset of life to look back o'er each scene,
While memory recalls every pleasure again;
What a train of remembrances rise o'er the mind
Of the raptures of friendship, and love left behind—
Of the hopes that enchanted, when fortune did shine;
All blighted and fled, with the days of Langsyne.

The moments of boyhood, in brightness shone
Are never forgot, though their rupture be gone;
For the bright glow of fancy is thrown o'er the past,
Endow'd from the clouds that our manhood o'er cast;
While the cares that embitter our age's decline,
Make us sigh with regret, for the days of Langsyne.

The spring may return, with its beauty and bloom—
Its freshness and fragrance, with rapture to some;
To me it brings sorrow, for never again
Can this bosom the gladness of boyhood regain;
And the bright beam of hope o'er my heart doth not shine,
Or promise the joys that gave pleasure Langsyne.

Oh, no for my spring-time of life is gone by,
And blighted each blossom of hope and of joy;
And now, like the last autumn leaf on the tree,
The chill breeze of winter, my death-knell may be!
For this dark wither'd heart can do nought but repine,
O'er the wreck of those joys that delighted Langsyne.

EVENING,

This is the hour when mem'ry wakes
Sweet dreams that could not last;
This is the hour when fancy takes
A survey of the past.

She brings before the pensive mind,
Dear thoughts of earlier years,
And friends that have been long consign'd
To silence and to tears.

The few we liked, the one we loved,
Come slowly stealing on,
And many a form far hence removed,
And many a pleasure gone.

Friendships that now in death are hush'd
Affection's broken chain,
And hopes that fate too quickly crush'd
In mem'ry live again.

I watch the fading gleam of day,
I muse on bright scenes flown,
Tint after tint they fade away—
Night comes—and all are gone.

The manner of Whipping among the Antient Jews. This punishment was not to exceed forty stripes, and therefore the whip, with which it was to be inflicted, being made of three thongs, and each blow giving three stripes; they never laid on any criminal more than thirteen blows. Because thirteen of those blows made thirty nine stripes, and to add *another blow*, would have been a transgression of the law, by adding two stripes over and above forty.

Wisdom in a Monarch and in a Subject. James the First, in one of his addresses to his Parliament, curiously remarks—"That wisdom in a *Subject* is as inferior to wisdom in a MONARCH, as the glittering of a nail in a horse's shoe is to the splendour of a star in the firmament!" This brilliant speech was, no doubt, a proof of his Majesty's *Modesty*.

The late Peter Bacon, Esq., stockbroker, has left a legacy of the value of £24,000 to the University College, London, payable at the death of his widow.