CH. H. Son of the Amtmand.] TRAVELS IN ICELAND.

not forsake us. Not only the Amtmand, but our good friend Mr Fell, arrived at Huaneyrè from Reikiavik, almost at the same moment with ourselves; and this unexpected meeting gave uncommon pleasure to the whole party. Mr Fell had come over into the Borgarfiord Syssel, to make some inquiry respecting the salmon fishery in this district. We also found here Mr. Magnuson, who is Sysselman of the Dalè Syssel. This large party, added to a very large family, occasioned some consultation on the manner in which we were all to be disposed of during the night. We were not suffered to wait for our baggage horses; the good people set themselves to work, and, by means of chairs, and mattresses filled with Eider-down, soon made up a sufficient number of beds. From the noise over our heads, it was probable that the whole family, males and females, were crammed together in the loft. It is not uncommon in Iceland, as it must be in all countries under similar circumstances of poverty, for people of all ranks, ages, and sexes, to sleep in the same apartment. Their notions of decency are unavoidably not very refined; but we had sufficient proof that the instances of this which we witnessed expressed nothing but perfect innocence.

193

Mr Bright being somewhat indisposed, Mr Holland and I occupied the following day in visiting the valley of Reikholt, leaving him behind with great regret. We were accompanied part of the way by the Amtmand, Mr Magnuson, and Mr Fell. The two former were going to hold a judicial court at a place called Huitaar, in the Myrè Syssel. The eldest son of the Amtmand was our guide, a youth about sixteen years of age, and of the most promising talents. The fluency and elegance with which he spoke the Latin language, and the progress he had made in the English under his uncle the Chief Justice, were far less surprising to us than the shrewdness of his remarks on every subject which occurred in conversation. His father intends to send him to Copenhagen. If life shall be granted to him, and proper opportunities of prosecuting his studies, we venture to prophecy, that this young man will prove an honour to his native country, which may derive much advantage from his public services.

After traversing a great extent of swampy ground, and encountering many difficulties in our progress through it, we at length reached the entrance of the valley; the natural curiosities of which greatly exceeded the expectation we had formed of them.

The hot springs in the valley of Reikholt, or Reikiadal,* though not the most magnificent, are perhaps the most curious among the numerous phenomena of this sort that are found in Iceland. Some of them, indeed, excite a greater degree of interest than the Geyser, though they possess none of the terrible grandeur of that celebrated fountain; and are well calculated to exercise the ingenuity of natural philosophers. On entering the valley, we saw numerous columns of vapour ascending from different parts of it. The first springs we visited, issued from a number of apertures in a sort of platform of rock, covered by a thin coating of calcareous incrustations. We could not procure any good specimens, but from those we broke off, the rock appeared to be greenstone. From several of the apertures the water rose with great force, and was thrown two or three feet into the air. On plunging the thermometer into such of them as we could approach with safety, we found that it stood at 212°.

A little farther up the valley, there is a rock in the middle

* Reikholt, means smoky hill; Reikiadal, smoky valley; Reikiadals-aa, the river of the smoky valley.

CH. II. Reikholt hot springs.] TRAVELS IN ICELAND.

of the river, about ten feet high, twelve yards long, and six or eight feet in breadth. From the highest part of this rock a jet of boiling water proceeded with violence. The water was dashed up to the height of several feet. Near the middle, and not more than two feet from the edge of the rock, there is a hole, about two feet in diameter, full of water, boiling strongly. There is a third hole near the other end of the rock, in which water also boils briskly. At the time we saw these springs, there happened to be less water in the river than usual, and a bank of gravel was left dry a little higher up than the rock. From this bank a considerable quantity of boiling water issued.

About two miles farther up the valley, on the opposite side

Call and a

BOILING SPRINGS IN THE RIVER REIELADALSAA

and and a second second second second the second

and the second second

to wat a contract the to contract the second

durante souther transfer and the second second

of the river, whose windings rendered it necessary for us to cross it several times, are the church of Reikholt, and the minister's house. We went thither for the purpose of examining a bath which was built nearly 600 years ago by the celebrated Snorro Sturleson. The bath is a circular bason, constructed of stones, apparently without any cement, but nicely fitted together. It is about fourteen feet in diameter, and altogether about six feet deep, the water being allowed to fill it to the depth of about four feet. The hot water is brought from a spring about 100 yards distant, by means of a covered conduit, which has been somewhat injured by an earthquake. We were told that cold water had been brought to it, so that, by mixing the hot and cold together, any desired temperature might be obtained. All round the inside, a little way under the surface of the water, was a row of projecting stones, placed apparently to serve the purpose of steps. Steps were constructed as an entrance to the bath, close to the orifice by which the hot water entered. At present it is not much used, and the bottom is covered with vegetable matter and soil.

In the absence of the minister, we were politely received by his wife, who gave us some excellent cream; a good proof of the quality of the pastures of this valley.

Proceeding down the valley on the side opposite to that on which we entered it, we came to a group of cottages, situate close to some hot springs. In the water of one of them we saw some pots, containing milk and curds. There is a sort of natural dome, several feet in diameter, formed over part of this spring, of clay and stones. It intermits at short and pretty regular intervals. Having sat down near an orifice in the dome from which steam was rushing, we observed that the noise suddenly ceased, and the water, when it was visible, sunk

CH. II. Reikholt hot springs.] TRAVELS IN ICELAND.

down amongst the stones in its channel, leaving them dry. After a short interval, the noise recommenced, steam rushed forth, and boiling water followed. We observed many repetitions of this phenomenon, and the intervals were scarcely two minutes. It may be easily explained in the same manner as that of ordinary intermittent springs, connecting such an apparatus as is supposed to belong to them, with one in which steam may be brought into action in order to force the water upwards, Upon part of the mound or dome mentioned above, and extending a little way beyond, a hut was constructed, the entrance to which was by a long, narrow, and low passage. The heat of the earth occasioned by the hot water was here confined, so that the temperature of the air was 73°. No use was made of this hut except for the drying of clothes. It is singular that the people have not contrived the means of heating their apartments by the hot springs that are steady in their operations. One would think, that the great scarcity of fuel, and the difficulty of procuring it, would have suggested this long ago. The fear of danger does not exist, for the habitations are close to the springs; and near the place where boiling water is thrown out with the most terrible violence, and which will afterwards be described, the natives quietly repose. Their not having taken advantage of this natural source of comfort, must proceed from that want of enterprise. which is so conspicuous in the character of the Icelanders of the present day.

About a mile farther down, at the foot of the valley, is the Tunga-hver, an assemblage of springs the most extraordinary, perhaps, in the whole world. A rock (wacke?) rises from the bog, about twenty feet, and is about fifty yards in length, the breadth not being considerable. This seems formerly to have been a hillock, one side of which remains covered with grass,

while the other has been worn away, or perhaps destroyed at the time when the hot water burst forth. Along the face of the rock are arranged no fewer than sixteen springs, all of them boiling furiously, and some of them throwing the water to a considerable height. One of them, however, deserves particular notice. On approaching this place, we observed a high jet of water, near one extremity of the rock. Suddenly this jet disappeared, and another thicker, but not so high, rose within a very short distance of it. At first we supposed that a piece of the rock had given way, and that the water had at that moment found a more convenient passage. Having left our horses, we went directly to the place where this had apparently happened; but we had scarcely reached the spot, when this new jet disappeared, and the one we had seen before was renewed. We observed that there were two irregular holes in the rock within a yard of each other; and while from one, a jet proceeded to the height of twelve or fourteen feet, the other was full of boiling water. We had scarcely made this observation, when the first jet began to subside, and the water in the other hole to rise; and as soon as the first had entirely sunk down, the other attained its greatest height, which was about five feet. In this extraordinary manner, these two jets played alternately, The smallest and highest jet continued about four minutes and a half, and the other about three minutes. We remained admiring this very remarkable phenomenon for a considerable time, during which we saw many alternations of the jets, which happened regularly at the intervals already mentioned.

This spring may be distinguished by the name of the ALTERNATING GEYSER.

These springs have been formerly observed, though the singularity of the alternations does not seem to have been

CH. H. Alternating Geyser.] TRAVELS IN ICELAND.

attended to as any thing remarkable. Olafson and Paulson mention, that the jets appear and disappear successively in the second, third, and fourth openings. We observed no cessation in any of the springs but in the two under consideration.

To form a theory of this regular alternation is no easy matter; and it seems to require a kind of mechanism very different from the simple apparatus usually employed by nature in ordinary intermittent or spouting springs. The prime mover in this case is evidently steam, an agent sufficiently powerful for the phenomena. The two orifices are manifestly connected; for, as the one jet sinks towards the surface, the other rises; and this in a regular and uniform manner. We observed once, that when one of the jets was sinking, and the other beginning to rise, the first rose again a little before

E TUNGU HVER AND ALTERNATING GEYSER

E. Mitchell Joseph

it had quite sunk down; and when this happened, the other ceased to make any efforts to rise, and returned to its former state, till the first again sunk; when the second rose and played as usual. This communication must be formed in such a manner, that it is never complete, but alternately interrupted, first on one side, and then on another.

Not having obtained any explanation which we can consider quite satisfactory, and having been unable entirely to overcome the difficulty, we leave its solution to the ingenuity of those who may think the phenomenon of the Alternating Geyser worthy the exercise of their talents.

The examination of the various natural wonders in the valley of Reikholt, detained us so long, that we did not reach Huaneyrè until a late hour in the evening; and we found the rest of the party, who had left the place in the morning, already re-assembled there.

Of all the Icelanders we had hitherto met with, we agreed that the Amtmand Stephenson had most of the appearance and manners of an Englishman. He is unassuming and mild in his address, and possesses something more than good common sense. With the exception of Mr Steingrim Jonson of Bessestad, he is the only person in Iceland who understands the French language, which he speaks with considerable facility. His property and rank, as well as character, give him a high degree of respectability among his countrymen.

The Amtmand did not terminate his great civility when we quitted his house the following morning, on our return to Reikiavik, but attended us several miles on the road to Indreholm. Mr Fell having expressed his wonder at the swift pacing of the Amtmand's horse, I was requested to try it. The poney paced with me at the rate of twelve or fourteen miles an hour, while I felt as if sitting in an easy chair; and

CH. II. Indreholm.] TRAVELS IN ICELAND.

when, on dismounting, I spoke in warm terms of my admiration of the animal's performance, and the pleasure it had given me, the Amtmand, with a politeness that could not be surpassed at the most refined court, requested that I would honour him by accepting his horse. In spite of my remonstrances against his parting with an animal so valuable to him, and which it was probably impossible for me to convey to England, he pressed the matter so much that I was obliged to comply with his desire. He is himself famous in Iceland for the rapidity of his travelling. With two or three led horses, he usually accomplishes 100 English miles in twentyfour hours.

We had a charming day for viewing the stupendous precipices of the Eastern Skards-heidè, over which mountains we again passed. On our return to Leira, we found all in a bustle preparing for a wedding, which was to be celebrated in the afternoon. Not wishing to intrude, we stopped only to take a dish of coffee. The priest, and a number of people, dressed in their holiday clothes, had already arrived. Though it would have gratified our curiosity to see the marriage feast, we feared lest our presence might interrupt the enjoyment of the party.

We remained at Indreholm only a few hours, having re solved, as the evening was favourable, to cross over to Reikiavik by sea. When formerly here, we had observed a quantity of the bones of small whales lying scattered upon the shore. We were informed that, early in the preceding winter, a shoal consisting of nearly a thousand of these whales had come on shore, and had been taken.

At ten o'clock we went to the beach; but, on getting into the boat prepared for us, it filled so fast, that we were glad to make our escape, notwithstanding the assurances of the

TRAVELS IN ICELAND. [CH. II. The Handel.

boatmen that the leaks were of no consequence. The Chief Justice soon had another boat launched, but we could not get away till the first had been drawn upon the beach. All hands from the house were called to assist, and men and women jumped out of bed on the alarm being given, and came down without waiting to dress themselves. We were perfectly thunderstruck with the appearance of this motley group. A pleasant sail of four hours brought us to Reikiavik at two o'clock in the morning, after an absence of one month and two days, during which we had travelled about three hundred and fifty miles.

From the 25th of June till the end of July, the Icelanders frequent Reikiavik, in order to dispose of their commodities, and to purchase such articles as they may require from the Danish merchants. They bring oil, fish, tallow, wool, butter, fox and swan skins, &c. which are taken in exchange for tobacco, spirits, meal, rye, iron and steel, linen and cotton goods, thread, &c. &c. This period of traffic is called the Handel, and while it lasts, many thousands of laden horses come to the town. The people bring tents with them, in which they live during their stay, and on their journey. During this period of activity little bustle is observable, excepting in the shops. The Handel of this year was not so good as usual. Butter was scarce all over the country, and tallow being used in its stead, very little of that article was exposed to sale.

There was a good deal of drunkenness observable at this time. The drinking of spirits is much encouraged by the merchants, both for the purpose of promoting the sale of that article, and of enabling them to over-reach the poor people who deal with them.

During our stay at Reikiavik at this time, a day was appointed for taking the salmon from the Laxaa (Salmon river),

202 -

CH. II. Salmon fishery.] TRAVELS IN ICELAND.

estend by R. Bright

about three miles from the town. This is a sort of gala day, and not only the people interested in the capture of fish, but all the ladies and principal people attend. Sometime before the appointed period, parties were seen galloping off towards the scene of action.

The river, which is small, divides into two branches about a mile from the sea. The channel is dammed up early in the morning, and the water forced into one branch, while the other is allowed to run almost dry, and the salmon that happen to be in the river are thus easily taken. The river is held on lease by Mr Scheele, who keeps the tavern, and pays a rent of sixty dollars. Sometimes two or three thousand salmon are taken out. At the time we witnessed the capture, there

SUMMUT OF SNEFELL JOKUL.

203

E.Milchell fo.

were only nine hundred taken. The fish are caught in the early part of the season, in boxes formed like our mouse traps. The salmon fishery of Iceland appears to be an admirable object for speculation, while the rents of our British rivers are so high. From the beginning of June to the beginning of August, vast quantities might be taken in the different rivers with very little trouble.

On the river near Reikiavik, near the place where the salmon traps are set, are the remains of a mill, which was erected many years ago for the purposes of the woollen manufacture, which did not succeed.

About this time, Amtmand Thoranson, having been appointed one of the commissioners for managing the affairs of Iceland in the absence of the Governor, came from his residence at Eyafiord, in the north, to Reikiavik. He honoured us with a visit; and we found him to be a man of plain simple manners, but sensible, and possessed of much and accurate knowledge respecting every thing connected with Iceland; and at the same time very liberal in communicating what he knew.

JOURNAL.

CHAP, III.

On the 24th of July, we attempted to leave Reikiavik, in order to visit the Geysers, and Mount Hekla; but the wind blew so strongly from the east, accompanied by very heavy rain, that, after having proceeded a few miles, we were obliged to return. Next morning the weather seemed to be improving, and, though it was rather foggy, and heavy showers appeared all round, we departed for Thingvalla. * We were attended to the Geysers by Mr Fell, to whom we were very much obliged, and in whose society we often found great relief from the fatigues we underwent; and by Mr Jorgen Flood, private secretary to Count Trampe. In the direction of Thingvalla the hills are low, and the country comparatively flat, and it contains much good grass, interspersed with boggy ground. We passed a deep gulley by a steep winding path, and here we once more perceived the great defect arising, even in the most romantic country, from the want of trees. † On approaching Mosfell, we saw the vapour of se-

* The double *l* is pronounced like *tl*.

+ We saw no vestiges of wood in the bogs; and were informed, that where it occurs, the trees are small. Mr Hooker, however, saw one five or six feet long, and about a foot in diameter.

TRAVELS IN ICELAND. [CH. III. Almannagiau,

veral hot springs at the foot of the mountain, on the south side of the valley. At that place are a church, the priest's house, and some cottages. We found the good pastor busy cutting down his grass for hay; an employment not beneath his calling, and a symptom of industry extremely pleasing. In England, the most wealthy, those of highest rank, do not disdain to amuse themselves in rural labour. With the poor priest, it was a matter of necessity to handle the scythe; yet in necessity there is often much delight; and there is little doubt that this man, and all the Icelanders occupied in the same way, were reaping the gifts of their Maker with glad and thankful hearts. On our approach, the priest left his work, and conducted us into his house. We were ushered into a very good room, and treated with abundance of milk by his wife, while he went to fasten the shoes of some of our horses. Having left Mosfell, we gradually ascended, and came upon an extensive tract of lava, which has been covered in many places to a considerable depth, with sandy soil. Our ride was now dreary and tiresome, though the path was good. We halted to refresh the horses on a small spot where there was a little grass, the principal covering of the soil being dwarf willows.

Near Thingvalla, we entered a deep and frightful fissure, called Almannagiau. This has been formed, with many others of smaller dimensions, and another large one which runs parallel to it at a considerable distance, by the sinking of the ground during some of those terrible convulsions which have shaken Iceland to its foundations. The whole rock bears marks of having been affected by fire. We came suddenly upon the brink of the precipice, and were turning aside from a scene so horrible, when we were told that we must descend. Our horses seemed prepared to carry us to the bottom, and

CH. III. Thingvalla.] TRAVELS IN ICELAND.

we had already proceeded a little way, when compassion for them, not any doubt, or fear for our own safety, while we depended on these cautious and sure-footed creatures, induced us to dismount, and allow them to find their own way. Having admired this frightful scene, and the caverns which were exposed to view by the disruption of the rock, we got out of the hollow by a narrow path, and after crossing a small stream that runs into the lake, we arrived at the place of Thingvalla, which is about twenty-six miles distant from Reikiavik. Here is a small, mean, and dirty church, in which, however, we contrived to sleep. The priest is a very old man; and has had his coffin prepared and placed in the church, though his appearance did not indicate a speedy dissolution. He was the only clergyman who seemed at all to dislike our occupying the church; and he did not receive us with the same cordiality we experienced from his brethren in other parts of the country. But we were treated with civility; milk, and an excellent dish of fresh trout, fried, were soon brought to us. Trouts abound in the lake, and often go up where the water gets into the fissures of the lava; so that, by throwing a line with a baited hook into a hole at a distance from the lake. where the water is not even visible, the people frequently catch them.

The scenery about Thingvalla is romantic, but the want of wood, and the effects of subterraneous heat, combine to give an impression of dreariness. The lake is a fine sheet of water, reckoned to be about ten miles long, and from three to seven in breadth. There are two pretty large islands in the lake, called Sandey, and Nesey, composed entirely of volcanic matter. The mountains at the south end are very picturesque, and the vapour ascending from hot springs on their sides, contributes to the solemnity of the whole scene, which has been created by the most dreadful commotion, and the destruction of a country that may once have been beautiful and fertile.

Near this place was the building where the courts of justice were held formerly. Reikiavik being now the seat of government, the courts are at present held there. Why Thingvalla was originally chosen as the seat of justice, does not appear; but a town being once established, and trade carried on freely, and to a greater extent than in former times, ready recourse to the law became necessary. Though not more than ten years have elapsed since the judicial courts were transferred to Reikiavik, few remains are left to mark a spot so famous in the history of Iceland. The only building was a small wooden house in which the consultations were held, and sentence pronounced by the Stiftamtmand, or Governor. The Magistrates and people assembled on the occasion lived in tents. Those culprits who were condemned to die, were beheaded on a small island in the river Oxeraa, which here flows into the lake. The females were drowned in a deep pool below the lava, a little farther up the valley.

An ecclesiastical court used to be held at Thingvalla by the Bishop of Skalholt, attended by the Provosts and two ministers from each Syssel.*

Towards the north are several ranges of mountains, which, from the account received, and the appearances we observed, are volcanic. Among these the principal seems to be Skalbreidè, a lofty Jokul, of which description of mountains others were seen at a distance.

From Thingvalla to Skalholt, a distance of twenty-four

* Tingwall in Shetland, and Dingwall in Ross-shire, are evidently the same name as Thingvalla in Iceland; and were probably, in ancient times, places where justice was administered.

209

CH. III. Skalholt.]

miles, the country is low and uninteresting ; except at a place where, from an eminence, we obtained the first view of Mount Hekla, and the stupendous mountains beyond it. The road lies along the north end, and part of the east side of the lake. where there is a considerable tract of stunted birch, and willow trees. The depth of the lake is said to be very great, a line of a hundred fathoms having been sunk without bottom being found. After many turnings, and crossing some bogs, we came to a low hill, round which we passed, and having got safe over another bog, which seemed to be fully as hazardous as any we had formerly attempted, we reached the bank of a large river called the Brueraa, which takes its rise from the Apa Vatn. This lake receives the water of the surrounding bogs; and near it, in different places, we saw vapours ascending from hot springs. After waiting and hallooing for some time, the boatman arrived and carried us across the river in a very good boat, the horses being obliged to swim. We stopped a few minutes at the house of the ferryman, whom, with his wife and family, we admired exceedingly on account of their cleanliness. Their persons, house, and the utensils in which they brought milk to us, were all neat, but this description must be understood comparatively. About a mile farther on is Skalholt, which has been erroneously denominated the capital of Iceland, in most English books on geography; but formerly it might have been entitled to this appellation as well as any other place. Till Reikiavik became of some note, there was nothing in Iceland that could be called a town; and it is no wonder that the seat of a Bishop should be 'honoured in preference to that of the Governor.

The situation of Skalholt is beautiful. Towards the south, there is a view of a noble river, formed by the junction of that discharged from Apa Vatn and the Huitaa, bounded by a

[CH. III. Skalholt.

finely shaped hill in the distance; another equally picturesque hill rising on the eastern bank of the latter, and facing Skalholt. Flat meadow land, gently swelling ground, and distant mountains towards the east, among which are Eyafialla Jokul and Hekla, form altogether a magnificent amphitheatre, and compose a landscape which, even without wood, was highly gratifying to the eye.

Here we found Mr Jonson, the Lector of the school of Bessestad, for which place he was preparing to depart on our arrival. He remained, however, till the following morning, and gave us fresh cause for lamenting our having had so little of his society. A daughter of the late Bishop Finnsson, very attentively furnished us with the best provisions she had, and one of her brothers offered to shew us the way to the Geysers.

On the 27th of July we set out to visit these celebrated fountains, which are about sixteen miles to the north of Skalholt.

SKALHOLT.

But here she to and thought

CH. III. Geysers.]

The country between is varied by gentle risings, and the prospect towards the north and west is bounded by mountains, from which there appear to have been many volcanic eruptions. All the flat ground in this quarter is swampy, but, excepting near the lakes, it is not so soft as to occasion any risk in travelling over it. To the eastward of Skalholt are several hot springs, and others rise among the low hills which we left on the right hand in going to the Geyser. We passed one farmhouse situate on a rising ground in the midst of the bogs; and the weather being favourable, the people were busy making hay; a scene which afforded a pleasing change from dreary solitude. The whole of this extensive district abounds in grass, and were draining practised, might prove a very rich pasture country. Further on, we found some cottages at the foot of the mountain; round which we turned, and came in sight of the hill, on one side of which are the Geysers. This hill, which does not exceed three hundred feet in height, is separated from the mountain towards the west by a narrow stripe of flat boggy ground, connected with that which extends over the whole valley. Crossing this bog, and a small river which runs through it, we came to a farm-house at the east end of the hill, and arrived at a place where the most wonderful and awful effects of subterraneous heat are exhibited.

On the east side of the hill there are several banks of clay, from some of which steam arises in different places; and in others there are cavities in which water boils briskly. In a few of these cavities the water, by being mixed with clay, is thick, and varies in colour; but it is chiefly red and grey. Below these banks there is a gentle and uniform slope, composed of matter which, at some distant period, has been deposited by springs that no longer exist. The strata or beds thus formed, seemed to have been broken by the shocks of earthquakes, par-

[CH. III. Geysers.

ticularly near the great Geyser. Within a space not exceeding a quarter of a mile, there are numerous orifices in the old incrustations, from which boiling water and steam issue, with different degrees of force; and at the northern extremity is the great Geyser, sufficiently distinguishable from the others by every circumstance connected with it. On approaching this place, it appeared that a mount had been formed of irregular, rough looking depositions, upon the ancient regular strata, whose origin has been similar. The slope of the latter has caused the mount to spread more on the east side, and the recent depositions of the water may be traced till they coincide with them. The perpendicular height of the mount is about seven feet, measured from the highest part of the surface of the old depositions. From these the matter composing the mount may be readily distinguished, on the west side, where a disruption has taken place. On the top of this mount is a bason, which we found to extend fifty-six feet in one direction, and forty-six in another.

At a quarter before three o'clock in the afternoon, when we arrived on the spot, we found the bason full of hot water, a little of which was running over. Having satisfied our curiosity at this time, we went to examine some other places whence we saw vapour ascending. Above the great Geyser at a short distance, is a large irregular opening, the beauties of which it is hardly possible to describe. The water which filled it was as clear as crystal, and perfectly still, though nearly at the boiling point. Through it we saw white incrustations forming a variety of figures and cavities, to a great depth; and carrying the eye into a vast and dark abyss, over which the crust supporting us formed a dome of no great thickness; a circumstance which, though not of itself agreeable, contributed much to the effect of this awful scene.



CH. III. Geysers.]

Near this spot are several holes from which vapour continually rises ; and from one of which a rumbling noise proceeded. This last might probably be taken for what Sir John Stanley denominates the roaring Geyser. But as the opening is not large, the beautiful cavity attempted to be described may have been the seat of that once furious spring .- " One of ' the most remarkable of these springs,' says Sir John, ' threw ' out a great quantity of water, and from its continual noise ' we named it the roaring Geyser. The eruptions of this foun-' tain were incessant. The water darted out with fury every ' four or five minutes, and covered a great space of ground ' with the matter it deposited. The jets were from thirty to ' forty feet high. They were shivered into the finest particles ' of spray, and surrounded by great clouds of steam. The ' situation of this spring was eighty yards distant from the ' Geyser, on the rise of the hill.'

From the last mentioned circumstance, notwithstanding the noise produced by the other, we are inclined to think that the first cavity described was the one whence these furious jets were thrown. The quantity of water that runs from it is small; and its perfect stillness at the time we saw it, formed a striking contrast with Sir J. Stanley's description. The mass of incrustations which seems to have been formed by this spring, was open in several places, and the cavities were full of water. It is probable that an earthquake has deranged the mechanism of this spring, or that the production of heat at the particular spot where it is situate, has ceased to be sufficient to produce the striking phenomena it formerly exhibited.

Having examined several other cavities, I returned to the Geyser in order to collect specimens of the incrustations on the mount. I selected a fine mass close to the water on the ... brink of the bason, and had not struck many blows with my

[CH. III. Geysers.

hammer, when I heard a sound like the distant discharge of a piece of ordnance, and the ground shook under me. The sound was repeated irregularly, and rapidly; and I had just given the alarm to my companions, who were at a little distance, when the water, after heaving several times, suddenly rose in a large column, accompanied by clouds of steam, from the middle of the bason, to the height of ten or twelve feet. The column seemed as if it burst, and sinking down it produced a wave which caused the water to overflow the bason in considerable quantity. The water having reached my feet, I was under the necessity of retreating, but I kept my eye fixed on what was going on. After the first propulsion, the water was thrown up again to the height of about fifteen feet. There was now a succession of jets to the number of eighteen, none of which appeared to me to exceed fifty feet in height; they lasted about five minutes. Though the wind blew strongly, yet the clouds of vapour were so dense, that after the first two jets, I could only see the highest part of the spray, and some of it that was occasionally thrown out sideways. After the last jet, which was the most furious, the water suddenly left the bason, and sunk into a pipe in the centre. The heat of the bottom of the bason soon made it dry, and the wind blew aside the vapour almost immediately after the spouting ceased. We lost no time in entering the bason to examine the pipe, into which the water had sunk about ten feet, and appeared to be rising slowly. The diameter of the pipe, or rather pit, is ten feet, but near the top it widens to sixteen feet. The section, which is taken across the longest diameter of the bason, gives a distinct idea of the whole structure of the external part of this wonderful apparatus. The perpendicular depth of the bason is three feet ; that of the pipe being somewhat more than sixty feet, though "there may be

CH. III. Geysers.]

some inaccessible hollows which extend to a much greater depth.

After the water had descended into the pipe, there was no appearance of any vapour issuing from it, till it had reached the mouth, when a little was visible. Even when the bason was full, the quantity of vapour was far from being so great as might have been expected to proceed from so large a surface of hot water. At five minutes before six o'clock it boiled a little, and continued to do so at intervals. Having thrown a stone into the water while it was perfectly still, we observed

Plan & Section of the bason of the Great Geyser

6 feet

enconstruises intructions a



The state of the second second

[CH. III. Geysers.

that an ebullition immediately took place, and continued till the stone reached the bottom. All the party having provided themselves with large stones, threw them into the pipe, on a signal, when the water was still. When the stones were thrown in, a violent ebullition instantly followed; and this escape of steam on agitation, may serve to assist a theory of the phenomena.

At twenty-nine minutes past six o'clock the pipe was full : and the water being within reach, its temperature was found to be 209°. At twenty minutes before seven we looked into the bason, and it was then hardly one-fourth full. The water was gently moved; and in some little hollows of the bottom of the bason it had the appearance of ebbing and flowing. About five minutes after, while we were collecting specimens on the edge of the bason, and expecting nothing, three jets took place, none of which exceeded thirty feet in height. In the same manner, at a quarter past eight o'clock, jets were thrown up repeatedly during the space of three minutes. one of which was about forty feet high. After these casual jets the water did not sink, but remained, filling about threefourths of the bason. Sir John Stanley mentions his having been surprised by similar unexpected jets; and we must take this opportunity of advising travellers who may wish to see the Geyser, not to be rash in going into the bason while the water is rising, as an opportunity of safely gratifying their curiosity will always occur immediately after every great exertion of the fountain.

We pitched our tent at the distance of about one hundred yards from the Geyser, and having arranged matters so that a regular watch might be kept during the night, I went to my station at eleven o'clock, and my companions lay down to sleep. About ten minutes before twelve, I heard subterraneous

CH. III, Geysers.]

discharges, and waked my friends. The water in the bason was greatly agitated, and flowed over, but there was no jet. The same occurred at half past two. At five minutes past four on Saturday morning an alarm was given by Mr Bright. As I lay next the door of the tent, I instantly drew aside the canvas, when at a distance of little more than fifty yards, a most extraordinary and magnificent appearance presented itself. From a place we had not before noticed, we saw water thrown up, and steam issuing with a tremendous noise. There was little water; but the force with which the steam escaped, produced a white column of spray and vapour at least sixty feet high. We enjoyed this astonishing and beautiful sight till seven o'clock, when it gradually disappeared. This fountain we immediately conjectured to be what has been called, by Sir John Stanley, the New Geyser.

We were occupied this morning in examining the environs of the Geysers; and at every step received some new gratification. Following the channel which has been formed by the water escaping from the great bason during the eruptions, we found some beautiful and delicate petrifactions. The leaves of birch and willow were seen converted into white stone, and in the most perfect state of preservation; every minute fibre being entire. Grass and rushes were in the same state, and also masses of peat. In order to preserve specimens so rare and elegant, we brought away large masses, and broke them up after our return to Britain; by which means we have formed very rich collections; though many fine specimens were destroyed in carrying them to Reikiavik. On the outside of the mount of the Geyser, the depositions, owing to the splashing of the water, are rough, and have been justly compared to the heads of cauliflowers. They are of a yellowish brown colour, and are arranged round the mount

[CH. IM. Geysers.

somewhat like a circular flight of steps. The inside of the bason is comparatively smooth; and the matter forming it is more compact and dense than the exterior crust; and, when polished, is not devoid of beauty, being of a grey colour, mottled with black and white spots and streaks. The white incrustation formed by the water of the beautiful cavity before described, had taken a very curious form at the edge of the water, very much resembling the capital of a Gothic column. We were so rapacious here; that we did not leave a single specimen which we could reach; and even scalded our fingers in our eagerness to obtain them. We found the process of petrifaction in all its stages; and procured some specimens in which the grass was yet alive and fresh, while the deposition of the silicious matter was going on around it. These were found in places at a little distance from the cavity, where the water running from it had become cold.

About a hundred yards from the Great Geyser towards the north, in the cleft where the disruption already mentioned had taken place, and which has probably been formed by an earthquake, are banks of clay, in which there are several small basons full of boiling mud. The mud is thin, and tastes strongly of sulphate of alumina, of which we observed many films attached to the clay, which seems to have been forced up from below, through fissures in the ancient incrustations. The clay contains also iron pyrites; the decomposition of which has given it very rich colours. Almost directly above this place, under the rock at the top of the hill, are several orifices, from which steam rushes; and there are some slight appearances of sulphur. Almost the whole of this side of the hill is composed of incrustations and clay.

19-1

CH. III. Geysers.]

The depositions of the present and former springs are visible to a great extent, about half a mile in every direction; and from their great thickness in many places, it is probable that they are spread under the surface now covered with grass and water, to a very considerable distance. About half a mile up the rivulet, in the direction of Haukardal, where there is a church, another hot spring appears, which deposits silicious matter. From thence we obtained one of the most curious specimens we collected; it almost perfectly resembles opal. The situation of this spring is mentioned to shew the probability that the extent of the matter, which may for ages have been collecting, is very great; and its depth, from what is seen in the cleft near the Geyser, where it is visible to the thickness of ten or twelve feet, is probably also very considerable.

It is somewhat curious, that no particular notice has been taken by the early Icelandic authors of this, the most remarkable spot in all the island. Though hot springs are without number, and occur in every part of the country, and may be regarded with indifference, yet the Geysers must have been remarkable at all times; for the extent of the old incrustations shews them to have been deposited by springs of no ordinary dimensions. They are, it is true, on the verge of that vast district of uninhabited and desolate country which forms the interior of Iceland. In looking around as we approached the place, nothing was seen but rugged mountains, far extended swamps, and frightful Jokuls rearing their frozen summits to the sky. Nothing in this direction seemed to invite the curiosity or enterprise of people, already accustomed to the horrors of volcanic eruptions, and fully aware that their only sure subsistence was to be derived from the sea. The indifferent and casual manner in which the Geysers are mentioned by Arngrim

[CH. III. Geysers.

Jonas, shews this want of curiosity even among the learned of the Icelanders. He speaks of some great springs near Haukardal, to the north of Skalholt, which he had never himself seen, but of which he had heard that they deposited incrustations, and changed vegetable matter into stone.* At the present day, the number of the natives who have visited these springs is comparatively very small; and, by those who live near them, their extraordinary operations constantly going on, are regarded with the same eye as the most common and indifferent appearances of nature. Towards the north-east, and east, the country is low; the only elevated ground that appears towards the south-east being the summits of Hekla, and Evafialla Jokul. Several Jokuls break the view towards the north ; and we remarked one mountain which had several rugged and peaked summits soaring to a great elevation.

However strongly the feelings excited by the productions of the springs, and by the appearance of the surrounding country, were impressed upon us, we often turned anxiously towards the Geysers, longing for a repetition of their wonderful operations. To them all our wishes and hopes were directed; and we felt as if our eyes could never tire of beholding, nor our minds weary of contemplating them. The descriptions we had read, and the ideas we had formed of their grandeur, were all lost in the amazement excited on their being actually before us; and, though we may perhaps raise their attributes in the estimation of the reader, we are satisfied that we cannot convey the slight-

* Brev. Com. de Island. Hakluyt's Voyages, London 1809, vol. 1. p. 596.— Saxo Grammaticus, in his preface to the history of Denmark, slightly notices the Geysers; and this is the earliest account we have. It proves them to have existed at least six hundred years.

CH. III. Geysers.]

est idea of the mingled raptures of wonder, admiration, and terror, with which our breasts were filled; nor do we fear that any conception which may arise of the astonishing effect of the Geysers, will leave the traveller disappointed, who trusts himself to the tempestuous ocean, and braves fatigue, in order to visit what must be reckoned among the greatest wonders of the world.

After yielding a little to impatience, we were gratified by symptoms of commotion in the Great Geyser. At three minutes before two o'clock, we again heard subterraneous discharges, and the water flowed over the edge of the bason ; but no jet took place. The same happened at twenty-five minutes past five o'clock, and at five minutes before seven. At thirty-five minutes past eight, it boiled over again, and immediately the new Geyser began to play, and continued till a quarter past nine. This Geyser gives no warning before it spouts, and it is therefore necessary to be cautious in looking down the pipe, unless it is known what time has elapsed since the preceding jet. While the spray and vapour are rushing out, one may approach with perfect safety, and stand quite close to the very brink of the pipe on the windward side. The pipe is nine feet in diameter, not perfectly round, and rough and uneven within.

Having been busily engaged in packing our specimens, and being somewhat tired, we went to sleep a little earlier than usual. We lay with our clothes on, separated from the ground by sheep-skins and a rug, in order that we might start up at a moment's notice. Mr Fell and Mr Flood had left us to return to Reikiavik; and we had soon cause to regret that they had departed before the next eruption of the Great Geyser took place. On lying down, we could not sleep more than a minute or two at a time; our anxiety causing us often

[CH. III. Geysers.

to raise our heads to listen. At last the joyful sound struck our ears; and we started up with a shout, at the same moment when our guides, who were sleeping in their Iceland tent at a short distance opposite to us, jumped up in their shirts, and hallooed to us. In an instant we were within sight of the Geyser; the discharges continuing, being more frequent and louder than before, and resembling the distant firing of artillery from a ship at sea. This happened at half past eleven o'clock ; at which time, though the sky was cloudy, the light was more than sufficient for shewing the Geyser ; but it was of that degree of faintness which rendered a gloomy country still more dismal. Such a midnight scene as was now before us, can seldom be witnessed. Here description fails altogether. The Geyser did not disappoint us, and seemed as if it was exerting itself to exhibit all its glory on the eve of our departure. It raged furiously, and threw up a succession of magnificent jets, the highest of which was at least ninety feet. At this time the sketch from which the engraving is made was taken : but no drawing, no engraving, can possibly convey any idea of the noise and velocity of the jets, nor of the swift rolling of the clouds of vapour, which were hurled, one over another, with amazing rapidity.

After this great exertion, the water, as before, sunk into the pipe, leaving the bason empty. At seven minutes before seven o'clock on Sunday morning, the Geyser boiled over; and again at twenty minutes past nine; and this was the last time we saw it in motion.*

* In Olafson's and Paulson's travels, we have a description of the Geyser, in which the height of the jet is stated at three hundred and sixty feet. This, making every allowance for deception, is certainly an exaggeration, since in subsequent observations made at distant periods, we find a striking uniformity. The heights observed at the time Sir Joseph Banks visited Iceland in the year 1722, are stated





CH. III. Geysers.]

At thirty-two minutes past nine, the New Geyser began its operations by throwing the water out of the pipe at three or four short jets, and then some longer ones. As soon as the bulk of the water was thrown out, the steam rushed up with amazing force, and a loud thundering noise, tossing the water frequently to a height of at least seventy feet. So very great was the force of the steam, that although a brisk gale of wind was blowing against it, the column of vapour remained as perpendicular as it is represented in the engraving. It proceeded in this magnificent play for more than half an hour, during which time we had an opportunity of taking a correct sketch of this beautiful fountain. A light shower fell from the vapour, which has been attempted to be expressed; but the imitation is very far short of the fine effect it produced. Sir John Stanley saw it throw up water to the height of one hundred and thirty-two feet. When stones are dropped into the pipe while the steam is rushing out, they are immediately thrown up, and are commonly broken into fragments, some of which are projected to an astonishing height.

This Geyser, we were told, had formerly been a comparatively insignificant spring, like many which we saw around. There is no bason round the pipe, but there are some remains of incrustations on its brink, similar to those round several of the smaller springs. The water constantly boils violently, about

by Von Troil, to have been from six to ninety-two feet. Sir John Stanley mentions the highest jet to have been ninety-six feet. He visited the Geyser in the year 1789. I have stated the heights as varying from ten to at least ninety feet. From these observations it appears that the great Geyser has not failed in magnificence after the lapse of thirty-eight years. Sir John Stanley mentions that, as the jets rose out of the bason, they reflected by their density the most brilliant blue; and that in certain shades the colour was green. We did not observe any thing of this kind, which probably depended on the position of the spectator, and the brightness of the sun, which scarcely shone while we were near the springs.

[CH. III. Geysers.

twenty feet below the mouth of the pipe ; but no subterraneous discharges take place to announce its operations ; and this circumstance seems to render a different theory from that of the great Geyser, necessary for explaining the phenomena.*

Each spring seems to have its own reservoirs, and its own mechanism distinct from the others. There is a small Geyser about a hundred yards distant from the new one, as it was called by Sir John Stanley, the phenomena of which we think worthy of being described, though after viewing the great Geyser, there is nothing wonderful in them. The description, however, may serve to shew what a singular range of cavities and pipes must exist under a small extent of surface, in order to produce the extraordinary effects which have been detailed. This little Geyser, for so we shall call it, first attracted our

* This Geyser seems to have undergone a considerable change since the time of the expedition to Iceland undertaken by Sir John Stanley. 'Its pipe,' says Sir John, ' is formed with equal regularity as that of the great Geyser, and is six feet ' ten inches in diameter. It does not open into a bason, but it is nearly surround-' ed by a rim or wall two feet high. After each eruption the pipe is emptied, and * the water returns gradually into it, as into that of the old Geyser. During three · hours nearly that the pipe is filling, the partial eruptions happen seldom, and do ' not rise very high ; but the water boils the whole time, and often with great vio-· lence.' Sir John further informs us in a note, that before the month of June 1789, the year he visited Iceland, ' this spring had not played with any great degree of violence, at least for a considerable time. (Indeed the formation of the ' pipe will not allow us to suppose, that its eruptions had at no former period · been violent.) But in the month of June, this quarter of Iceland had suffered ' some very severe shocks of an earthquake ; and it is not unlikely, that many of 4 the cavities communicating with the bottom of the pipe had been then enlarged, " and new sources of water opened into them."

Our author also says, that the eruptions of the new Geyser resembled those of the great one, consisting of several jets succeeding each other rapidly. It will be seen from the theory I have formed of the phenomena, that the change has been occasioned by the supply of water to the pipe having become less, while the great reservoir of water, subject to occasional and sudden increase of heat, remains the same

CH. III. Geysers.]

TRAVELS IN ICELAND.

attention while watching the great one on the night of the 27th. There are several openings near it, from one of which water occasionally spouts to the height of ten or twelve feet, and a number of holes whence steam rushes. The little Gevser does not throw its water above four or five feet high, but its phenomena are similar to those of the great one, whose grandeur it may one day rival. The pipe of this Geyser, at the depth of eight feet, is of an irregular shape, three feet by two in width, and opens like a funnel into a shallow bason about ten feet in diameter. When we went to examine it, the water was sinking into the pipe, and was at the same time very much agitated. After it had reached its greatest depth, which was about seven feet, it remained quiet for a considerable time, and we took the opportunity of going to examine some springs near it, which boil constantly. On our return we found all quiet, but in a very short time the water became disturbed, and before it began to rise we counted nineteen distinct bursts of steam. It then rose gently, a burst of steam taking place at intervals, and at each burst the water rose a few inches: sometimes it rose almost a foot, and then sunk again. Thus it proceeded for some time, till at last the ebullition became more constant, and the water rose faster. At length there were violent bursts of steam, and the water rapidly approached, being thrown up in short jets; and at this time we felt a distinct trembling of the ground, but heard no subterraneous noise. The bason was now filled, and we left the spring throwing up jets at short intervals. The little Geyser is pretty regular, and continues its operations about an hour. It is probable that the water of all these springs is of the same nature with that of the great Geyser; those, however, that are muddy, are different in respect to the ingredients contained in the water.

[CH. III. Geysers.

From all the circumstances which have been mentioned, it is evident, that a vast variety of cavities exists in the space from which the water issues in so many different ways. In forming a theory of the phenomena, therefore, any kind of mechanism may be supposed, that, by means of steam, is capable of producing such effects. The following theory, which was formed on the spot while the phenomena were before us, is submitted to our readers.

Were the appearances regular in duration, and the intervals between the jets always equal, it would not be difficult to construct an apparatus which would 'exhibit them with precision; but in both respects, as well as in the degree of violence, there is great irregularity. From whatever source the heat proceeds, whether from the combustion of beds of coal, the decomposition of pyrites, or any other cause, there can be no hesitation in granting the possibility of a greater quantity of heat being evolved at one time than at another; or of the heat remaining steady at intervals. It is not merely possible, but very probable, that the wonders of the Geysers are caused by sudden productions of heat. By such a supposition they may easily be explained with the help of an extremely simple apparatus; but without it, a very complicated system of pipes and cavities, and perhaps, too, of valves, will be necessary.

A column of water is suspended in a pipe, by the expansive force of steam confined in cavities under the surface. An additional quantity of steam can only be produced by more heat being evolved. When heat is suddenly evolved, and elastic vapour suddenly produced, we can at once account for explosions accompanied by noises. The accumulation of steam will cause agitation in the column of water, and a farther production of vapour. The pressure of the column will

CH. III. Geysers.]

be overcome, and the steam escaping, will force the water upwards along with it. Let us suppose a cavity C communicating with the pipe PQ, filled with boiling water to the height AB, and that the steam above this line is confined, so that it sustains the water to the height P. If we suppose a sudden addition of heat to be applied under the cavity C, a quantity of steam will be produced, which, owing to the great pressure, will be evolved in starts, causing the noises like discharges of artillery, and the shaking of the ground. The pressure being now greatly increased, the water must rise out of the pipe; an oscillation is produced; the water is pressed downwards from A to Q, and the steam having now room to escape, darts upwards, breaking through the column, and carrying along with it a great part of the water. As long as the ex-



fCH. III. Geysers.

traordinary supply of steam continues, these oscillations and jets will go on. But at every jet some of the water is thrown over the bason, and a considerable quantity runs out of it. The pressure is thus diminished; the steam plays more and more powerfully, till at last a forcible jet takes place, a prodigious quantity of steam escapes, and the remaining water sinks into the pipe. This explanation, however, is not quite complete, as it requires the production of the extraordinary quantity of heat to cease the moment after the last jet, which is in general the most violent. For though we may suppose the whole of the water to have been expelled, which it is not, unless the accumulation of heat was stopped at the very instant of the last and strongest jet, we should find steam rushing from the pipe. But it uniformly happens, that after the last jet all becomes perfectly quiet; and this unformity we know has continued since the time that Sir Joseph Banks saw the Geyser. It may be as allowable to infer a sudden cessation, as a sudden production of heat. But it is a very curious circumstance, that the heat should continue to produce steam, just as long as the pressure of the water continued considerable, and that it should cease the instant that the pressure is removed. We think that this last fact may be explained, by the diminution of temperature occasioned by the escape of the vast body of vapour, which accompanies the last effort.

The same configuration of a cavity will explain the phenomena of the new Geyser satisfactorily. We have only to suppose that there is a smaller supply of water, and that instead of a column reaching to P, pressing against the steam in the reservoir, the water reaches only a little way, if at all, above the level of that within the cavity. Things being thus adjusted, a sudden evolution of heat causes no explosive

CH. III. Geysers.]

escape of steam, as there is but little pressure to overcome. The instant that an extraordinary supply of vapour is brought into action, part of it passes through the water, and carries some up with it. This is repeated, more and more water being thrown out; at last there is no interruption, and the steam rushes forth with fury and noise, till, the heat abating, the force of the jet is gradually weakened, at last exhausted, and the phenomena cease.

Another way of accounting for the operations of these extraordinary fountains, which appears equally plausible with what has been stated, has been suggested. It requires the existence of a strongly heated surface free from water; and also that of a small subterraneous fountain, operating like the little Geyser we have described, expelling its water occasionally, so that it flows over the heated surface, by which means an additional quantity of steam may be temporarily produced. But this explanation is perhaps more deficient than the other; for if we suppose the water which is to be suddenly converted into elastic vapour to be furnished from a small subterraneous fountain, the operations of that fountain must be explained, and the same difficulties that remain to be overcome in the case of the Geyser, meet us in this; as they must also do in whatever mode we may suppose water to be supplied.

About a mile from a place called Husavik, in the north of Iceland, is the Uxahver, (ox spring,*) which is more regular, and is said nearly to equal the Geyser in the magnificence of its operations.

We returned to Skalholt on the 29th. This place, during many centuries, was the residence of one of the Bishops. On the death of the last Bishop of Skalholt, the learned John

* It is said that this name was given to it from the circumstance of an ox having accidentally fallen into it, and been boiled alive.

[CH. III. Skalholt.

Finnsson (son to Finnur Jonson, the author of the Ecclesiastical History of Iceland), and that of the Bishop of Hoolum, which occurred soon afterwards, application was made to the court of Denmark to sanction a union of the two sees. This was granted; and the title of Bishop of Iceland was first conferred on our friend Geir Vidalin, who still holds that dignity.

The church of Skalholt is a neat small building of wood, erected on the site of the former one, which was taken down about six years ago. That, the Bishop's house, and a few cottages, constituted the supposed capital of Iceland. There is a very good picture of the late Bishop, painted at Copenhagen, in the church; and, on the floor of the space before the altar, is a beautiful white marble slab, inscribed to his memory by the present Chief Justice. The font, and pulpit of the old church, which are curiously carved and painted, are in the present building. Near the door of the church are some epitaphs carved on stones; none, however, of an old date. The following is a specimen of them :

- · Priscis nobilibus creatus olim,
- ⁴ Virtutisque patrum beatus hæres,
- · Dilecti genitoris ipsa imago,
- · Et desiderium piæ parentis,
- ' Communisque amor omnium bonorum,
- ' Quos secum sociavit alma fides,
- · Et candor sibi nescius fraudis ;
- · Eheu ! precipiti nimis ruina,
- · Mortis vulnifico peremptus æstro,
- · Post vitæ decies duos Decembre,
- · Mæstæ Thorstenides domus levamen
- · Eggertus jacet hac sepultus in urna;
 - ' Amoris ergo fecit, Johannes Vidalinus.'

CH. III. North of Iceland.] TRAVELS IN ICELAND.

The easiest route from the southern to the northern parts of Iceland, is by the way of Skalholt. To Skagastrand, the nearest road is by Thingvalla and Kalmanstunga; which last place is situate a little to the north-east of Reikholt. There is another route through the eastern part of the Borgarfiord Syssel. The northern division of the island is usually called the Nordland; the others, Östland, Sudland, and Vestland. We had no time for exploring the Nordland : indeed, to travel through it would take up a whole summer; which, probably, might be spent in that quarter by a naturalist, with much profit and pleasure. Respecting that part of the country, we obtained some information from Amtmand Thoranson, which we may take the present opportunity of communicating to the reader.

A journey to the northern part of the island, from Skalholt or Thingvalla, generally occupies three or four days. The interior of Iceland, an extent of perhaps not less than forty thousand square miles, is a dreary, inhospitable waste, without a single human habitation, and almost entirely unknown to the natives themselves. Through more or less of this desert, a traveller going to the northern coast, or coming towards the south, must necessarily pass; and it is no wonder that it has become customary to travel through it night and day without stopping.

The greatest proportion of the Nordland is the property of the farmers who occupy it. Some of it belongs to the church; and part to the crown. The lands which belonged to the school of Hoolum, were sold to the farmers of the district at the time when that establishment was removed.*

The population is confined to the shores of the Fiords;

* For an account of the mode in which the land in general is possessed, see the chapter on Rural Affairs.

- TRAVELS IN ICELAND. [CH. III. North of Iceland.

along which, and up the valleys, an extent, in many places, of above twenty miles, is occupied. In the four Syssels composing the Nordland, viz. Hunavatn, Hegranes, Vadlè, and Thingöes Syssels, there are about 12,000 inhabitants. The Vadlè, in which Eyafiord is situate, is the most populous in proportion to its extent, containing about 3000 people.

The harbour of Eyafiord is the best on the northern coast. At this place there are three wooden dwellinghouses, and four storehouses. Before the war, three ships used to be laden every year at this port, with tallow, wool, woollen goods, salted mutton, sheep-skins, &c.; the particulars of which will be found in the tables in the chapter relating to the state of commerce.

Except during the month of June, and the beginning of July, and in September and October, there are no cod-fish nor haddocks found in the Fiord ; and it is only at some distance out at sea that the fish are taken at these times. The months of April and May are chiefly occupied in taking the Houkal, or Shark. The shark fishery is principally carried on at Siglifiord, a place about fifty miles north-west from Eyafiord.

At the last mentioned place, herrings appear in vast shoals during the months of June and July; and are taken by means of Seine nets at the upper extremity of the Fiord. We heard, as no uncommon occurrence, that one hundred and fifty barrels of herrings are taken at a single hawl of a net. The fish are sold to the farmers in the neighbourhood for one rixdollar a barrel.

Several rivers of considerable size run into the Eyafiord; but the courses of the rivers in this part of the island have never been traced to any great distance up the country.

Hofsos, and Skagastrand, are the next most considerable

CH. HI. North of Iceland.] TRAVELS IN ICELAND.

places of trade on the northern coast of Iceland. The former, on the western side of the Skagafiord, is a very bad harbour, and only one merchant has settled there. This Fiord receives the waters of two rivers; one of which is as large as the Huitaa of Borgarfiord, and is called Kolbeinsdalsaa. At the head of the Skagafiord, not far from Hofsos, is Hoolum, which, until the close of the last century, was the seat of one of the Bishops of Iceland. A public school was also established there; but now the place consists only of a few cottages; and, in its present state, contains nothing particularly worthy of notice. Skagastrand is situate on the western side of the large promontory which bounds the Skagafiord. It is a bad harbour; and, towards the end of September, is particularly unsafe, on account of its being exposed to the north wind, and floating ice. This place formerly furnished a cargo for one vessel every year; but, since the commencement of the war, we believe the arrival of even one ship has not been regular.

Husavik is the only commercial station which remains to be mentioned. It lies to the north-east of Eyafiord, on the Skialfandèfiord, which receives the waters of a large and rapid river called the Skialfandèfiot, and also a river called Laxaa, which flows from the lake Myvatn. There is no good fishing at Husavik; but a great many seals are caught during the winter. Eider-ducks are very abundant on the coast.

Throughout the whole of the northern districts, the pasture is very good, though not so rich as that of Borgarfiord, and some other parts of the Sudland. It is better calculated for sheep than cows; but it is always necessary to feed the sheep with hay during the greatest part of the winter. Labourers being scarce, and the summer short, numbers of people go from other parts of the country, particularly from the Guldbringè Syssel, to assist in securing the hay crop. The Nordland is the only part of the country where goats are kept.

The Fiords on the north coast are frozen over every winter; but the open sea only in the most severe seasons. Floating ice frequently comes upon the coast, both during winter and summer. Very little ice is ever seen on the western side of the island, notwithstanding its proximity to Greenland; but, on the eastern shores, it comes often farther south than Berufiord, which it completely shut up about the middle of May this year.

The prevailing wind proceeds from the north. Snow generally begins to fall in large quantities about the end of September, and remains on the ground till the middle of May, and sometimes much later. The greatest degree of cold which Amtmand Thoranson recollected to have observed, was about minus 35°. Last winter, the thermometer, about the end of January, stood at minus 30°, for several weeks. The greatest heat of summer he had observed, was about 70°. These degrees are those of Fahrenheit: the thermometer used by the Amtmand was that of Reaumur.

We left Skalholt on the 30th, in order to visit Mount Hekla. On approaching this mountain from the westward, it does not appear remarkable; and has nothing to distinguish it among the surrounding mountains, some of which are much higher, and more picturesque. It has three distinct summits; but they are not much elevated above the body of the mountain. After passing some dangerous bogs, we came to the noble river Huitaa, which derives its name from the same cause that gives that appellation to the river of Borgarfiord. It is not, however, equally white, being somewhat

CH. III. Skalholt to Hekla.] TRAVELS IN ICELAND.

of the colour of the Thames as it passes through London. Having crossed this river in a boat, making the horses swim over before us, we travelled over a flat country, sometimes through bogs, sometimes among sand banks, and occasionally on good dry turf, till we approached a farm-house, called Reikum, when we came upon lava. Indeed, we had been travelling over a particular species of this substance almost all the way; as shall be more particularly explained in the chapter on mineralogy. This place of Reikum, derives its name from a hot spring near it, which made its first appearance during an earthquake in the year 1789. Here we were informed that there was no boat at the usual place of crossing the Thiorsaa; and that we must go down the river to a place called Evalstadir. The farmer having agreed to be our guide, he mounted his horse, and we proceeded over an extensive flat, in some parts boggy, and in others rough with lava, This is part of an extensive plain, the opening of which, from he sea, reaches from Evarback to the Markarfliot, a distance of about thirty-six miles; and it extends a great way to the north, a number of low hills and ridges rising in it here and there. On many parts of this great flat, there has been a large deposition of loose sand, the spreading of which by the wind has done considerable mischief, and is still continuing to be injurious. This district is by far the richest in pasture that we saw during our stay in Iceland.

On our arrival at Eyalstadir, after a tedious ride, we found the Thiorsaa to be a very large turbid river; and we had some fears lest our horses should not be able to swim across, as at this place the river is about a quarter of a mile broad. The ferry boat which was destined for us was large enough for three persons, and that number was sufficient to keep the gunnel close to the water, so that the slightest motion

TRAVELS IN ICELAND. [CH. III. Eyalstadir Ferry.

to the right or left must have filled it in a moment; but although the wind was blowing strong against the current, we were carried in safety to the other side. In this little bark the ferryman sat with the utmost composure, and rowed across with two horses tied to the stern. The animals seemed to be perfectly aware, that if they did not swim steadily, their fate and that of the boat would be the same. We were told, that it was no uncommon thing to see this man cross in his little boat with four or five horses at a time; and that, when the people are going to Reikiavik with their goods, he frequently ferries over several hundred horses in one day, and several thousands in the course of the season. The fare for crossing the ferry was a mere trifle, a few of the small coins, called skillings, which are equivalent to our halfpence; but we gave the man a dollar, telling him that we greatly admired his skill, which made him very happy. From the opposite bank the place of Kalfholt is about two miles distant; perhaps not so much in a direct line, but a bog intervenes which occasions the route to be circuitous. We there found a church, which we entered and occupied without much ceremony.

The Priest presented himself in a dress through which we could not possibly descry the slightest tokens of the clerical character. On his head was a greasy woollen cap that had probably once been white, elevated like a sugar loaf. A short jacket and breeches of the same stuff adorned his body, and his legs were covered with coarse black stockings reaching above the knee. His father was dressed in the same mode at our arrival; but he had a small white beard which rendered his figure somewhat more venerable than that of his son. Both of them, after some time, put on their best clothes. The Priest accompanied us, next day, a part of the road to

CH. HI. Rangaa River.] TRAVELS IN ICELAND:

Storuvellir, where the Provost of the district lives. The road lay among low hills and bogs; and on our way, we saw some young Ptarmigans in a place not suited to the general habits of that bird in our own country, where they frequent stony places on the tops of mountains.

We now came into the plain from which Hekla rises; but we had no view of the mountain as we approached, as it was covered with clouds. We passed through lava which had been exposed to view by the blowing of the sand that covers so great an extent of this country. Storuvellir is situate in the midst of this tract; and round it there is a great deal of excellent grass. The Provost had a large stock of old hay, which, without any report in his favour as a good rural economist, would have been a sufficient proof of his merit. He received us with great kindness, but annoyed us a little by the excess of his attention or curiosity. The Provost is reputed rich ; and it is said that he has made his fortune entirely by his good management of his farm, on which we saw a considerable flock of sheep, and some cows. The winter provision of stock-fish kept in the church, was no advantage to its atmosphere, which can undergo little purification; for the windows of the churches, in general, did not seem to be made to open.

The weather being still foggy, we could not see Hekla as we approached it. On the 1st August, we passed through lava of the same description as that pervading every part of this flat district we had travelled over. We crossed the river called Wester Rangaa, the water of which is perfectly transparent, and flows along the foot of Hekla, on the west side. The bed of this river is very remarkable, being formed of rugged masses of lava, which being here and there elevated in peaks, cause great rapidity in the stream. Owing to the clefts in the lava, it is very dangerous to attempt crossing the river at this place without a guide. The Provost was very obliging, and gave us instructions in what manner to follow him across; and as soon as he saw us safe, he took leave and returned to Storuvellir.

On the end of a long ridge, running nearly north and south, close to the base of Hekla, is a small farm, called Naifurholt. Here we halted; and the grass having been recently mown, we found an admirable station for our tent. The cottager, Jon Brandtson, whom we found to be the most obliging and active Icelander we had met with, was not long in making his appearance, and ministering to our wants. He told us that he could guide us to a place where there was a great quantity of Iceland agate, or obsidian; a piece of information the most welcome we had for a long time received. That substance was one of the chief objects of our mineralogical researches; and not having before met with it, we had given up all thoughts of seeing it in its place; when honest Brandtson, observing us employed with the minerals we had already collected, brought a mass of obsidian to us, and relieved us from a most severe mortification. He told us that the place where he had seen great quantities of that substance, was situate near the Torfa Jokul, and distant a long day's journey from Naifurholt. Our time was now limited; but we had no hesitation in making up our minds to endure considerable fatigue, in order to visit a spot so interesting to us; and even, in case of need, to relinquish the project of ascending the far-famed Hekla; and, accordingly, we resolved to undertake this expedition next day, as the weather did not appear favourable for the ascent of the mountain. Having made preparations for both adventures, we went early to bed.

CH.III. Country beyond Hekla.] TRAVELS IN ICELAND.

Finding, at two o'clock in the morning, that Hekla was entirely obscured by fog, we mounted our horses; and each taking a spare one, we departed, Brandtson leading the way. In the course of our journey, as the clouds dispersed, we had different views of the mountain, which is completely covered with slags. Few streams of lava seem to have taken their course on the west and north sides; indeed, we saw distinctly only one. Hekla, like Snæfell Jokul, terminates a long group of comparatively low hills. Viewed from the westward, when Eyafialla, Tinfialla, and other Jokuls beyond it are in sight, the mountain makes no great figure; but, from the east and south, it appears to rise out of the hills surrounding it, and is very conspicuous.

Our road towards the obsidian lay between the Rangaa and the Thiorsaa, the course of which is nearly from northeast to south-west. This last mentioned river here rolls its large turbid stream, over rugged masses of lava rising abruptly from its bed; and in its efforts to overcome the obstruction thus occasioned, dashes among the rocks, forming impetuous rapids and falls. Great quantities of alluvial sand appeared disposed in strata in different parts of the country through which we passed; and in other places there were extensive accumulations of volcanic sand composed of pumice and cinders.

Having recrossed the Rangaa, we entered a wide plain, bounded by Hekla and the adjacent mountains on one side, and by a lofty, precipitous, and broken ridge on the other, the surface being completely covered with lava, sand, or minute fragments of scoriæ and pumice. The lava which has flowed over the plain, the termination of which we could not see, appears to have been remarkably rough, from the numerous sharp pointed masses rising out of the loose sand and